

PRODUCT MANUAL



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5. TECHNICAL DATA

TECHNICAL DATA LIST (ALPHABETICAL)

	PRODUCT NAME	DATA SHEET No.
A		
	ACRI 800 FINISH HS	(ACR 800 F HS) 4052-K
B		
	BANNOH 500	(B 500) 5055-K
	BANNOH 500 QD	(B 500 QD) 5056-K
	BANNOH 1500	(B 1500) 5084-K
	BANNOH 1500 QD	(B 1500 QD) 5085-K
	BANNOH 1500 R Z	(B 1500 R Z) 5084N-K
	BANNOH 2000	(B 2000) 5082-K
	BANNOH 2000 QD	(B 2000 QD) 5083-K
	BANNOH 3000	(B 3000) 5084G-K
	BANNOH 3000 QD	(B 3000 QD) 5084H-K
	BANNOH 5000	(B 5000) 6189G-K
	BANNOH 5000 QD	(B 5000 QD) 6189H-K
	BIOCLEAN ECO	(BCL ECO) 5945-K
	BIOCLEAN ECO COLOUR	(BCL ECO C) 5945H-K
	BISCON HB-NT L	(BC HB NT L) 6135G-K
	BISCON HB-NT L QD	(BC HB NT L QD) 6135L-K
	BONDET PUTTY	(BP) 9050-K
C		
	CERABOND 2000	(CB 2000) 1049D-K
	CMP PEELABLE COAT	(CMP P C) 2419P-K
	CMP AC-10	(CMP AC-10) 4007-K
	CMP BIOCLEAN PLUS	(CMP BCL PLUS) 5981B-K
	CMP BIOCLEAN HB	(CMP BCL HB) 5982B-K
	CMP BIOCLEAN R	(CMP BCL R) 5984-K
	CMP BIOCLEAN R PLUS	(CMP BCL R PLUS) 5984C-K
	CMP BIOCLEAN SG-R	(CMP BCL SG-R) 5988B-K
	CLEANKEEP 5000	(CK 5000) 6072-K
	CLEANKEEP 5000 QD	(CK 5000 QD) 6072B-K
	CLEANKEEP 5000 HOLDING PRIMER	(CK 5000H) 6075-K
	CERABEST	(CB) 8052A-K
E		
	EPICON ZINC RICH PRIMER B-2	(EPZR B-2) 1034-K
	ECO SWAN II	(ECO SW II) 2419L-K
	EVAMARINE	(EM) 2400A-K

The information given in this sheet is effective at the date shown above and subject to revision from time to time without notice.

EPICON ZINC HB-2	(EPZ HB-2)	5113-K
EPICON MARINE UNDERCOAT M	(EPM UC M)	5301-K
EPICON MARINE HB	(EPM HB)	5402K-K
EPICON MARINE CH	(EPM CH)	5409K-K
EPICON A-100 PRIMER	(EP A 100)	5530-K
EPICON S-100 PRIMER	(EP S 100)	5540-K
EPCION B-100 PRIMER	(EP B 100)	5542B-K
EPICON T-500 PRIMER H	(EP T-500 H)	6020A-K
EPICON T-500	(EP T-500)	6025-K
EPICON T-800	(EP T-800)	6037-K
EPICON T-800 QD	(EP T-800 QD)	6037B-K
ECOMAX Bi	(ECX Bi)	6141-K
EVAMAX 2000F	(EX 2000F)	6427-K
EVASIGN No.100	(EVA No.100)	8530-K
 G		
GALBON S-HB	(GB S-HB)	6250-K
GALVANITE No.200 PRIMER	(GNT 200 P)	8220-K
GALVANITE No.400 PRIMER	(GNT 400 P)	8231-K
 M		
MARINE STAR A	(MS A)	5895-K
 N		
NURI AF	(NURI AF)	5904L-K
NON-SKID SAND	(NS)	9090-K
 P		
PERMAX No.3300	(PM 3300)	6060-K
 R		
ROSWAN QD HB	(RWN HB)	2131-K
RUST INHIBITIVE OIL "CK"	(CK)	8250-K
 S		
SILVAX SQ K	(SX SQ K)	3007-K
SEAFLO NEO SL	(SFL N SL)	5843N-K
SEAFLO NEO SL Z	(SFL N SL Z)	5843M-K
SEA GRANDPRIX 1000 L	(SGP 1000 L)	5843P-K
SEAFLO NEO CF Z	(SFL N CF Z)	5846A-K
SEA GRANDPRIX 330HS	(SGP 330HS)	5904K-K
SEA GRANDPRIX 660 HS	(SGP 660 HS)	5904G-K
SEA GRANDPRIX 770 HS	(SGP 770 HS)	5904H-K
SEA GRANDPRIX 880 HS	(SGP 880 HS)	5904D-K

SEA GRANDPRIX 880 HS PLUS	(SGP 880 HS PL)	5904F-K
SEAFLO NEO M1 PLUS	(SFL N M1 PL)	5904J-K
SEA GRANDPRIX 900 L	(SGP 900 L)	5907G-K
SEA GRANDPRIX 950 L	(SGP 950 L)	5908C-K
SEAFLO NEO SL M	(SFL N SL M)	5908E-K
SEA GRANDPRIX 2000 A	(SGP 2000 A)	5911S-K
SEAFLO NEO CF PREMIUM	(SFL N CF P)	5917T4-K
SEAFLO NEO S-PREMIUM	(SFL N-S PRM)	5913I-K
SILICON HR PRIMER	(SN HR P)	8032-K
SILICON HR BLACK	(SN HR BK)	8033B-K
SILICON HR SILVER	(SN HR SILVER)	8034-K
SILVA SPAR	(SS)	8340A-K
SEAFLO NEO SL Z PLUS	(SFL N SL Z PL)	EXAF05-001-K
SEAFLO NEO CF PREMIUM EX	(SFL N CF P EX)	EXAF05-002-K

U

UNYVAN HS PRIMER	(UV HS P)	5150K-K
UNYVAN HS PRIMER J	(UV HS Pr J)	5127F-K
UNY MARINE	(UM)	5510A-K
UNY MARINE HS FINISH SILVER	(UM HS S)	5514B-K
UNY MARINE HS	(UM HS)	5526-K
UNY MARINE HS M	(UM HS M)	5526C-K
UMEGUARD SX	(UG SX)	6166G-K
UMEGUARD SX QD	(UG SX QD)	6166M-K
UMEGUARD SX HS	(UG SX HS)	6193A-K
UMEGUARD SX HS QD	(UG SX HS QD)	6194A-K

TECHNICAL DATA LIST (GENERAL)

PRODUCT NAME		DATA SHEET No.
SHOP PRIMER		
EPICON ZINC RICH PRIMER B-2	(EPZR B-2)	1034-K
CERABOND 2000	(CB 2000)	1049D-K
OLEORESINOUS COATING		
ROSWAN QD HB	(RWN HB)	2131-K
EVAMARINE	(EM)	2400A-K
ACRYLIC COATING		
ACRI 800 FINISH HS	(ACR 800 F HS)	4052-K
CHLORINATED RUBBER COATING		
CMP AC-10	(CMP AC-10)	4007-K
EPOXY COATING		
ECO SWAN II	(ECO SW II)	2419L-K
SILVAX SQ K	(SX SQ K)	3007-K
BANNOH 500	(B 500)	5055-K
BANNOH 500 QD	(B 500 QD)	5056-K
BANNOH 1500	(B 1500)	5084-K
BANNOH 1500 QD	(B 1500 QD)	5085-K
BANNOH 1500 R Z	(B 1500 R Z)	5084N-K
BANNOH 2000	(B 2000)	5082-K
BANNOH 2000 QD	(B 2000 QD)	5083-K
BANNOH 3000	(B 3000)	5084G-K
BANNOH 3000 QD	(B 3000 QD)	5084H-K
EPICON ZINC HB-2	(EPZ HB-2)	5113-K
UNYVAN HS PRIMER	(UV HS P)	5150K-K
UNYVAN HS PRIMER J	(UV HS Pr J)	5127F-K
EPICON MARINE UNDERCOAT M	(EPM UC M)	5301-K
EPICON MARINE HB	(EPM HB)	5402K-K
EPICON MARINE CH	(EPM CH)	5409K-K
EPICON A-100 PRIMER	(EP A 100)	5530-K
EPICON S-100 PRIMER	(EP S 100)	5540-K
EPICON B-100 PRIMER	(EP B 100)	5542B-K
CMP BIOCLEAN SG-R	(CMP BCL SG-R)	5988B-K
EPICON T-500 PRIMER H	(EP T-500 H)	6020A-K
EPICON T-500	(EP T-500)	6025-K
EPICON T-800	(EP T-800)	6037-K

EPICON T-800 QD	(EP T-800 QD)	6037B-K
PERMAX No.3300	(PM 3300)	6060-K
CLEANKEEP 5000	(CK 5000)	6072-K
CLEANKEEP 5000 QD	(CK 5000 QD)	6072B-K
CLEANKEEP 5000 HOLDING PRIMER	(CK 5000 H)	6075-K
BISCON HB-NT L	(BC HB NT L)	6135G-K
BISCON HB-NT L QD	(BC HB NT L QD)	6135L-K
ECOMAX Bi	(ECX Bi)	6141-K
UMEGUARD SX	(UG SX)	6166G-K
UMEGUARD SX QD	(UG SX QD)	6166M-K
UMEGUARD SX HS	(UG SX HS)	6193A-K
UMEGUARD SX HS QD	(UG SX HS QD)	6194A-K
BANNOH 5000	(B 5000)	6189G-K
BANNOH 5000 QD	(B 5000 QD)	6189H-K
EVAMAX 2000F	(EX 2000F)	6427-K
GALVANITE No.200 PRIMER	(GNT 200 P)	8220-K
GALVANITE No.400 PRIMER	(GNT 400 P)	8231-K
URETHANE PAINTS		
UNY MARINE	(UM)	5510A-K
UNY MARINE HS FINISH SILVER	(UM HS S)	5514B-K
UNY MARINE HS	(UM HS)	5526-K
UNY MARINE HS M	(UM HS M)	5526C-K
TBT FREE SPC ANTIFOULING PAINTS		
SEAFLO NEO SL	(SFL N SL)	5843N-K
SEAFLO NEO SL Z	(SFL N SL Z)	5843M-K
SEA GRANDPRIX 1000 L	(SGP 1000 L)	5843P-K
SEAFLO NEO CF Z	(SFL N CF Z)	5846A-K
SEAFLO NEO-S PREMIUM	(SFL N-S PRM)	5913I-K
SEAFLO NEO CF PREMIUM	(SFL N CF P)	5917T4-K
SEAFLO NEO M1 PLUS	(SFL N M1 PL)	5904J-K
SEAFLO NEO SL M	(SFL N SL M)	5908E-K
SEAFLO NEO SL Z PLUS	(SFL N SL Z PL)	EXAF05-001-K
SEAFLO NEO CF PREMIUM EX	(SFL N CF P EX)	EXAF05-002-K
SEA GRANDPRIX 330 HS	(SGP 330 HS)	5904K-K
SEA GRANDPRIX 660 HS	(SGP 660 HS)	5904G-K
SEA GRANDPRIX 770 HS	(SGP 770 HS)	5904H-K
SEA GRANDPRIX 880 HS	(SGP 880 HS)	5904D-K
SEA GRANDPRIX 880 HS PLUS	(SGP 880 HS PL)	5904F-K
SEA GRANDPRIX 900 L	(SGP 900 L)	5907G-K
SEA GRANDPRIX 950 L	(SGP 950 L)	5908C-K
SEA GRANDPRIX 2000 A	(SGP 2000 A)	5911S-K
MARINE STAR A	(MS A)	5895-K

NURI AF	(NURI AF)	5904L-K
SILICONE FOUL RELEASE COATING		
BIOCLEAN ECO	(BCL ECO)	5945-K
BIOCLEAN ECO COLOUR	(BCL ECO C)	5945H-K
CMP BIOCLEAN PLUS	(CMP BCL PLUS)	5981B-K
CMP BIOCLEAN HB	(CMP BCL HB)	5982B-K
CMP BIOCLEAN R	(CMP BCL R)	5984-K
CMP BIOCLEAN R PLUS	(CMP BCL R P)	5984C-K
INORGANIC ZINC COATING		
GALBON S-HB	(GB S-HB)	6250-K
CERABEST	(CB)	8052A-K
HEAT RESISTANCE PAINT		
SILICON HR BLACK	(SN HR BLACK)	8033B-K
SILICON HR PRIMER	(SN HR P)	8032-K
SILICON HR SILVER	(SN HR SILVER)	8034-K
SILVA SPAR	(SS)	8340A-K
MISCELLANEOUS PAINT		
CMP PEELABLE COAT	(CMP P C)	2419P-K
RUST INHIBITIVE OIL "CK"	(CK)	8250-K
EVASIGN No.100	(EVA No.100)	8530-K
BONDET PUTTY	(BP)	9050-K
NON-SKID SAND	(NS)	9090-K

STANDARD PAINTING SPECIFICATION (FOR NEW BUILDINGS)

Specifications listed here are typical standard examples, and may change depending on trading condition, expected life, etc.

Therefore please consult us before making your final decision.

1. BOTTOM / BOOTTOP COATINGS

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
TIN FREE SPC AF	Universal Primer	BANNOH Series	2	150 - 300
	Binder Coat (Modified Epoxy)	BANNOH 1500 R Z	1	75 - 100
	Tin Free SPC AF	SEAFLO NEO Series or SEA GRANDPRIX Series	2 - 3	100 - 400
SILICONE FOUL RELEASE COATING	Universal Primer	BANNOH Series	1	150 - 200
	Sealer Coat	CMP BIOCLEAR SG R	1	100
	Silicone Elastomer	CMP BIOCLEAR PLUS or CMP BIOCLEAR HB	1	200

Note : Please contact us so that we can recommend a suitable type for your ship's conditions.

2. TOPSIDE COATING

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Epoxy + Urethane	Universal Primer	BANNOH Series	1 - 2	150 - 250
	Finish	UNY MARINE Series	2	100
Epoxy + Epoxy	Universal Primer	BANNOH Series	1 - 2	150 - 250
	Finish	EPICON MARINE HB	1 - 2	100 - 200

3. WEATHER DECK COATINGS

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Epoxy System	Universal Primer	BANNOH Series	1 - 2	150 - 250
	Finish	EPICON MARINE HB	1 - 2	100 - 200
Urethane System	Universal Primer	BANNOH Series	1 - 2	150 - 250
	Finish	UNY MARINE Series	2	100
Inorganic Zinc System	Primer	GALBON S-HB	1	65
	Sealer coat *	BANNOH Series	1	50
	Finish	EPICON MARINE HB or UNY MARINE Series	1 - 2 2	100 - 200 100

* Mist coat system

4. OUTSIDE OF SUPERSTRUCTURES(Including DUCT, PIPE, etc.)

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Epoxy System	Universal Primer	BANNOH Series	1 - 2	150 - 250
	Finish	EPICON MARINE HB	1 - 2	100 - 200
Urethane System	Universal Primer	BANNOH Series	1 - 2	150 - 250
	Finish	UNY MARINE Series	2	100
Inorganic Zinc System	Primer	GALBON S-HB	1	65
	Sealer coat *	BANNOH Series	1	50
	Finish	EPICON MARINE HB or UNY MARINE Series	1 - 2 2	100 - 200 100

Note : Urethane System is highly recommended as Top Coat/Finish

5. CARGO HOLD

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Anti-abrasion Epoxy	Top Coat	BANNOH Series or UMEGURAD Series or EVAMAX 2000F	2	200 - 250
Anti-abrasion Epoxy + Epoxy System	Primer	BANNOH Series or UMEGURAD Series or EVAMAX 2000F	2	150 - 200
	Top Coat	EPICON MARINE HB	1 - 2	100 - 200
Inorganic Zinc	Top Coat	GALBON S-HB	1	75

6. ACCOMMODATION / ENGINE ROOM / PUMP ROOM

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Oleoresinous	Primer	ROSWAN QD HB	1	70
	Finish	EVAMARINE	1	50
Epoxy + Alkyd	Primer	BANNOH Series	1	100
	Finish	EVAMARINE	1	50
Epoxy 1Coat System	Solvent-borne	EPICON MARINE CH	1	80 - 120
	Water-borne	ECOSWAN II	1	80 - 120

7. HIGH TEMPERATURE PIPE

7-1) Up to 200°C

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Oleoresinous	Primer	ROSWAN QD HB	1	70
	Heat Resistant Paint	SILVA SPAR	2	40
Epoxy + Silicone	Primer	BANNOH 500	1	150
	Heat Resistant Paint	SILICON HR	1	25

7-2) Up to 400°C

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Inorganic Zinc Silicone	Primer	GALBON S-HB	1	65
	Heat Resistant Paint	SILICON HR PRIMER	1	30
	Heat Resistant Paint	SILICON HR	1	25
Silicone	Primer	SILICON HR PRIMER	1	30
	Heat Resistant Paint	SILICON HR or SILICON HR SILVER	1	25

8. VOID SPACE

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Solvent-borne Epoxy	Universal Primer	BANNOH Series	1-2	125 - 300
Solvent-Free Epoxy	Universal Primer	BANNOH 5000	1-2	150 - 300

9. TANK COATING

9-1) Crude Oil Tank

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Pure epoxy	Tank coating	EPICON T-500	2	250 - 300
Epoxy	Universal primer	BANNOH 1500 or BANNOH 2000	2	250 - 300

9-2) Lubrication Oil Tank

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Pure epoxy	Tank coating	EPICON T-500	2	250 - 300

9-3) Water Ballast Tank

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Solvent-borne Epoxy	Universal Primer	BANNOH 1500 or BANNOH 2000	2	320
Solvent-Free Epoxy	Universal Primer	BANNOH 5000	1	320
			2	320

9-4) Product Carrier Tank

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Pure Epoxy(1)	Holding Primer*	EPICON T-500 PRIMER H	1	50
	Tank coating	EPICON T-500	2	250
Pure Epoxy (2)	Tank coating	EPICON T-500	3	300
Phenolic Epoxy	Tank coating	EPICON T-800	3	300
Inorganic Zinc	Holding Primer*	GALBON SP	-	(18)
	Top Coat	GALBON S-HB	1	75

* Holding primer is used when 1st coat can not be applied immediately after second surface preparation due to working schedule etc.

9-5) Fresh / Distilled Water Tank

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Epoxy	Holding Primer	CLEANKEEP 5000 HOLDING PRIMER	1	50
	Finish	CLEANKEEP 5000	1	300

10. GLASSFLAKE PAINT SYSTEM (Ship's Outer Shell)

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Epoxy Glass flake Paint	Primer	PERMAX NO.3300	2	300
	Binder coat	BANNOH 1500 R Z	1	75 - 100
	Antifouling	SEAFLO NEO Series or SEA GRANDPRIX Series	2 - 3	100 - 400

11. SOX SCRUBBER OUTLET(Anti-Acid Zone) COATING

Type of System	Kind of Paint	Product Name	Coats	Recommended D.F.T(μm)
Scrubber Outlet Coating	Primer(1)	EPICON T-500	1	175
	Primer(2)	BANNOH Series	1	200
	Binder coat	BANNOH 1500 R Z	1	75 - 100
	Antifouling	SEAFLO NEO Series or SEA GRANDPRIX Series	2 - 3	100 - 400
Caustic Soda Tank	Tank coating	EPICON T-500	2	300

CARGO RESISTANCES OF CARGO HOLD PAINTS

Kind of paints		Pure-epoxy system*	Modified epoxy system*	Inorganic zinc system
Cargoes				
Sea Water		A	A	LA10
Coal and Ore	Coal	LA1,4	LA1,4	LA7
	Iron ore	LA2,4	LA2,4	LA7
	Bauxite	LA2	LA2	LA7
	Phosphate rock	A	A	N
	Sulfur ore	LA4	A	N
Grain	Soya bean	A	N	LA8
	Wheat	A	N	LA8
	Corn	A	N	LA8
Others	Cement	LA3	LA3	A
	Rock salt	A	A	A
	Wooden chip	A	A	LA9
	Urea	LA2	LA2	LA7
	Tapioca	A	A	N
General cargo		A	A	A

Abbreviations **A** : Acceptable **N** : Not acceptable **LA** : Limited acceptable

* Cargo resistance of Pure-epoxy system & Modified -epoxy system described above is shown as typical type.

Please ask the resistance data of individual type to us.

<Note>

- 1) As the cargos may be affected by the water sprinkled and the heat, the temperature should be controlled below 60℃.
- 2) These cargos can be carried without chemical damage to the paint film under condition that the pH value is from 2 to 12.
- 3) Heat generated from the cargos may affect the paint film. Please refer to the heat resistance of cargo hold paint.
- 4) The mechanical damage by abrasive cargos like a coal and ore may occur at the first cargo especially. A sufficient DFT control and curing time are needed.
- 5) The cargo represented as this generic name may be varied significantly in quality and chemical composition. For judgment of the resistance, more detailed information about the chemical composition is needed.
- 6) Not acceptable for "Coal carrier".
To avoid the scratch damages, hard and heat generating cargos are not applicable for the "first and second cargos" after ship's delivery. To accelerate curing of the paint film, grain is recommended for first & second cargos.
- 7) These cargos can be carried out without chemical damage to the inorganic paint film under the condition that the pH value is from 5 to 10.
- 8) Hygienic problem may be caused by zinc content. FDA certification is sometimes needed.
- 9) White rust will be formed on the surface of the paint film due to the water in the wood and the paint film will be gradually consumed.
- 10) Inorganic paint film withstands intermittent exposure to salt and fresh water but continuous immersion may reduce the life-span of the paint film.

GENERAL INSTRUCTIONS (FOR SURFACE PREPARATION & PAINTING)

SURFACE PREPARATION

In protecting steels with paint, careful surface preparation is of utmost importance. If this surface preparation is neglected, the performance of the paint cannot be ensured.

(1) Surface Preparation of Bare Steel (Pre-Fabrication Treatment)

- (a) Oil and grease are to be removed by thinner-wiping after scraping away firmly adhering impurities.
- (b) Corrosive salts and sulfate on the steel surface are to be removed by fresh-water washing. The surface is then to be dried with dry waste cloth or dry compressed air.
- (c) All mill scale, rust and foreign matters are to be removed by shot, grit or sand-blasting. Finally, the surface should be cleaned by vacuum cleaner or blowing with compressed air.

Bare steel surfaces treated thus rust rapidly when exposed to the air, and therefore should be painted with a shop primer as soon as possible in order to prevent re-rusting during storage, fabrication and fitting out. The main function of shop primers is to provide steel with temporary protection against rusting during fabrication and fitting out and they must be suitable for application in the course of shipyard practice and must not interfere with other construction processes. Consequently, rapid drying so as to permit handling in a short time after application non-toxicity, and welding or gas-cutting properties are required for shop primer.

They must also be compatible with any subsequent paint.

The following shop primers have been manufactured and marketed by Chugoku Samhwa Paints, Ltd.

Shop Primer	Standard Grade of Pre-Fabrication Treatment	Applicable Subsequent Paint
EPICON ZINC RICH PRIMER B-2 (Epoxy Zinc Rich Shop Primer)	ISO Sa2 1/2 or equivalent	Most of our organic resin based paints except oleoresinous paints.
CERABOND 2000 (Inorganic Zinc Shop Primer)	ISO Sa2 1/2 or equivalent	Most of our organic resin based paints. However, when oleoresinous paints are applied please consult us.

(2) Surface Preparation of Shop Primed Surface
(Secondary Surface Preparation or Post-Fabrication Treatment)

Water and moisture, oil and grease, white rust, chalk marks, unsuitable marking paint and other contaminants should be removed by thinner-wiping, or other proper cleaning method. If the shop primed surface has been damaged during rolling, cutting or welding, or suffered mechanical abrasion in storage, handling and transport, the affected areas should be cleaned by wire brush or disc sander and touched-up. The entire surface must be cleaned by washing, if necessary, before subsequent paints are applied.

(3) Surface Preparation for Old Paint Film

The surface must be cleaned by scraping, and/or thinner wiping and/or fresh water washing to removed salt, dirt, oil and grease and other impurities. All rust, oil, loose paint film and other impurities should be removed by disc sander, wire brush or other suitable method after which a specified paint system should be applied.

PAINTING

(1) Weather Conditions

Full advantage should be taken of weather conditions to carry out painting when the weather is favorable.

Paint should never be applied on a wet surface. Not only should painting be avoided in rain, sleet or fog, but attention must be paid to the presence of condensation on the surface.

Generally, Painting should be done at over 0°C and below 85%R.H. condition. However, below 5°C some paints such as Epoxy slow down dramatically or stop curing, though other paints such as Chlorinated Rubber and Vinyl are quite suitable for use at temperatures even below 0°C if the surface is clean and free from ice or frost.

Painting should not be carried out when the surface temperature is less than 3°C above the dew point, no matter what the R.H. is at the time.

Particulars are mentioned in **INSTRUCTIONS FOR APPLICATION OF EPOXY HULL & TANK COATING and INORGANIC ZINC COATING.**

(2) Preparation & Storage

(a) Some paints components, although perfectly stable at normal temperature, will react together at higher temperature, causing thickening, etc. Some paints such as water based paint and emulsion are affected by frost. Because of this, paint should not be stored where temperatures can become excessively high or low.

(b) Shelf life

If stored in normal conditions,

Oleoresinous: 18 months, subject to reinspection thereafter

Epoxy, Tar-epoxy, Urethane: 12 months, subject to reinspection thereafter

Inorganic Zinc: 6 months, subject to reinspection thereafter

(c) When paints are left standing they very often tend to separate slightly.

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This is caused by the different specific gravities of the ingredients. All paint must, therefore, be carefully stirred and mixed until homogenized before using. Stirring should be done from time to time in order to prevent such separation, while painting.

(d) Once opened, some paints rapidly form a skin on the surface.

Generally the quick-drying types have this tendency, which is, of course, no fault of the paint but is due to the natural process of drying. The skin must be removed perfectly before painting. This precaution applied particularly when material is to be sprayed, for small articles of skin would soon clog the gun.

(e) Most paints do not normally require adjustment but under conditions of excessively high or low temperature a small amount of appropriate thinner, not exceeding the amount specified by the manufacturer, may be added in order to ease brushing or to bring paint to spraying consistency.

(3) Film Thickness

The dry film thickness of shop primer on a blasted steel surface should be measured as follows :

Place a smooth steel panel on blasted steel surface, apply shop primer and measure the dry film thickness on the steel panel by an adequate electromagnetic thickness meter.

(4) Application Method

(a) Brush

The paint should be applied on the surface by lengthwise and crosswise movements of the brush. Rough surfaces, rivet heads, edges and angles should be given special attention.

(b) Paint Roller

Cover the surface of the roller by spreading the paint. Paint at a slow and even space up and down and across. Do not spread the paint excessively. Particular care should be taken when painting rivet heads and welding seams.

(c) Airless Spray

Most CHUGOKU products can be applied by airless spray, which is a still more effective and economic method than conventional spray, especially on large areas. The method is quicker with less spill and the paint can be applied in thicker coats. The use of airless spray requires more of a routine than conventional spray, and great caution must be exercised in handling the gun which works with very high pressure.

(5) Cleaning of Tools

The tools should be cleaned immediately after use. This is particularly important when working with quick-drying or two component paints. Spray equipment should be cleaned after use by flushing with an adequate solvent. Special care should be taken in cleaning the nozzles.

INSTRUCTIONS FOR APPLICATION OF EPOXY HULL COATING

CLEANING PRIOR TO PAINTING (SECONDARY SURFACE PREPARATION)

In surface preparation and cleaning of the surface, special attention should be given to the welded parts and edges of steel construction. Dust, spatter, slag, etc., should be removed.

(1) Damaged parts

Rusty parts should be cleaned by disc sander or other suitable method to the grade ISO St 3. Welding spatter, slag and other foreign matter should be removed by scraper, scaling hammer or suitable tools.

Areas burned by welding or other heat treatment, including adjacent areas, should be cleaned by disc sander or suitable tools to ISO St 3.

Welding parts should be cleaned by power brush or other suitable method.

(2) Undamaged parts

Oil, moisture, dust or other foreign matter should be removed by thinner, power brush, disc sander, compressed air or vacuum cleaner, etc.

After cleaning, a subsequent coat should be applied as soon as possible.

MIXING OF MATERIALS

(1) Mixing

Base and hardener should be mixed in the specified proportions and ensure a homogeneous state. Since poor mixing may impair its drying property, mixing should be done by a pneumatic mixing machine or the like.

(2) Thinning

Thinner may be added in spray application, but should never exceed the specified amount.

(3) Induction Time

When indicated necessary, the mixed material should be kept induction time longer than the specified period before application. Insufficient induction time causes blooming.

(4) Pot Life

The mixture should be used within the specified pot life.

PAINTING

Airless spray is most recommendable to obtain a uniform and specified film thickness. In this respect cross-spraying is also recommended.

If film thickness is found insufficient, an additional coat should be applied on these parts.

Painting interval should be kept as specified. If the painting interval is over that specified, the surface to be coated should be roughened by sand paper, disc sander or other adequate tools before application of over coat.

CONTROL OF FILM THICKNESS

Film thickness should be controlled at the recommended mean value, unless otherwise specified. Film thickness should be measured with a wet and/or dry film thickness gage.

WEATHER CONDITION

Generally, painting should be done at over 5°C and below 85% R.H. condition. Painting should not be carried out when the surface temperature is less than 3°C above the dew point, no matter what the R.H. is at the time.

PROTECTION OF PAINT FILM

- (1) Painted surface should be kept free from contamination such as water or other foreign matters.
- (2) Painted surface should be protected against welding sparks or dirt during and just after painting.
- (3) Painted surface should be arranged to prevent possible damages by worker's walking on blocks, etc.

INSTRUCTIONS FOR APPLICATION OF EPOXY TANK COATING

CLEANING PRIOR TO PAINTING (SECONDARY SURFACE PREPARATION)

In surface preparation and cleaning of the surface, special attention should be given to the welded parts and edges of steel construction. Dust, spatter, slag, etc., should be removed.

(1) Damaged parts

Rusty parts should be cleaned by disc sander or other suitable method to the grade SIS St 3. Welding spatter, slag and other foreign matter should be removed by scraper, scaling hammer or suitable tools.

Areas burned by welding or other heat treatment, including adjacent areas, should be cleaned by disc sander or suitable tools to SIS St 3.

Welding parts should be cleaned by power brush or other suitable method.

(2) Undamaged parts

Oil, moisture, dust or other foreign matter should be removed by thinner, power brush, disc sander, compressed air or vacuum cleaner, etc.

After cleaning, a subsequent coat should be applied as soon as possible.

MIXING OF MATERIALS

(1) Mixing

Base and hardener should be mixed in the specified proportions and ensure a homogeneous state.

Since poor mixing may impair its drying property, mixing should be done by a pneumatic mixing machine or the like.

(2) Thinning

Thinner may be added in spray application, but should never exceed the specified amount.

(3) Induction time

When indicated necessary, the mixed material should be kept induction time longer than the specified period before application. Insufficient induction time causes blooming.

(4) Pot Life

The mixture should be used within the specified pot life.

PAINTING

Airless spray is most recommendable. With regard to spray application, cross spraying (double spraying) is recommended to obtain a uniform and specified film thickness.

If film thickness is found insufficient, an additional coat should be applied on these parts.

Edges, corners, welding seams, scallops, underside of longitudinal should be touched up prior to spraying.

In particular, underside of longitudinal must be painted carefully, for it is difficult to obtain sufficient film thickness.

Painting interval should be kept as specified.

If the painting interval is over that specified, the surface to be coated should be roughened by sand paper, disc sander or other adequate tools before application of over coat.

CONTROL OF FILM THICKNESS

Film thickness should be controlled at the recommended mean value, unless otherwise specified.

WEATHER CONDITION AND DRYING CONDITION

Generally, painting should be done at over 0°C and below 85% R.H. condition.

Painting should be not carried out when the surface temperature is less than 3°C above the dew point, no matter what the R.H. is at the time.

PROTECTION OF PAINT FILM

- (1) Painted surface should be kept free from water or other liquid before drying through.
- (2) Painted surface should be kept free from welding sparks or dirt during and before touch-free drying of the paint film.
- (3) Painted surface should be arranged to prevent possible damaged by foot-steps in tank's interior.

PRECAUTIONS FOR FIRE HAZARD AND HEALTH

- (1) Solvents are flammable, so attention must be given to prevent fire hazard.
When painting is carried out in confined spaces such as a tank's interior, sufficient ventilation should be provided during painting and during the drying process.
- (2) To prevent contamination of the skin by the paint, protective cream may be used for the painters. Should paint stain the skins, it should be wiped off with a suitable thinner and then the area to be washed with water.

INSTRUCTIONS FOR APPLICATION OF INORGANIC ZINC COATING

CLEANING PRIOR TO PAINTING (SECONDARY SURFACE PREPARATION)

The surface should be cleaned by sweep blasting or power tool cleaning after removing oil and grease.

Damaged and welded parts should be cleaned by blasting.

MIXING OF MATERIALS

(1) Mixing

Base and powder should be mixed in the specified proportion by gradually adding the powder into base.

Mixing should be done thoroughly to ensure proper mixing and a homogeneous condition.

As the mixture tends to separate, mixing should be constantly carried out during painting.

Prior to painting, it is recommended that the mixture be filtered through an 80~120 mesh screen.

(2) Induction Time

If indicated, specified induction time should be kept.

When aging is not sufficient, paint failures are likely to occur.

(3) Pot Life

The mixture should be used within the specified pot life.

The quality will be impaired, if left longer than the pot life.

PAINTING

(1) Painting Equipment

Special care is needed for application of inorganic zinc coating. It is recommended to be applied by the below mentioned equipment. Cross spraying (double spraying) is highly recommended to obtain a uniform and the specified film thickness. The painting equipment should be clean and kept in good condition.

For air spray application of GALBON S-HB :

(a) Air spray equipment with pressure paint pot and an agitator

(b) Air compressor capable of supplying sufficient volume of air continuously at 80psi (5-6 kg/cm²) to nozzle of each gun.

(c) Air hose for gun of 5/16 inches(8mm)

(d) Paint hose of 1/2 inches(13mm)

For airless spraying application, GALBON S-HB can be applied by conventional airless equipment.

CONTROL OF FILM THICKNESS

Film thickness should be controlled at the recommended mean value, unless otherwise specified. Dry film thickness of more than 150 microns of GALBON S-HB per coat should be avoided, since mud cracking could occur.

Film thickness should be measured by a wet and/or dry film thickness gage.

WEATHER CONDITION

Alcohol base type (GALBON S-HB)

Temperature (°C)	0 - 50 °C
Humidity (%)	50 - 85% R.H.

TOUCH UP

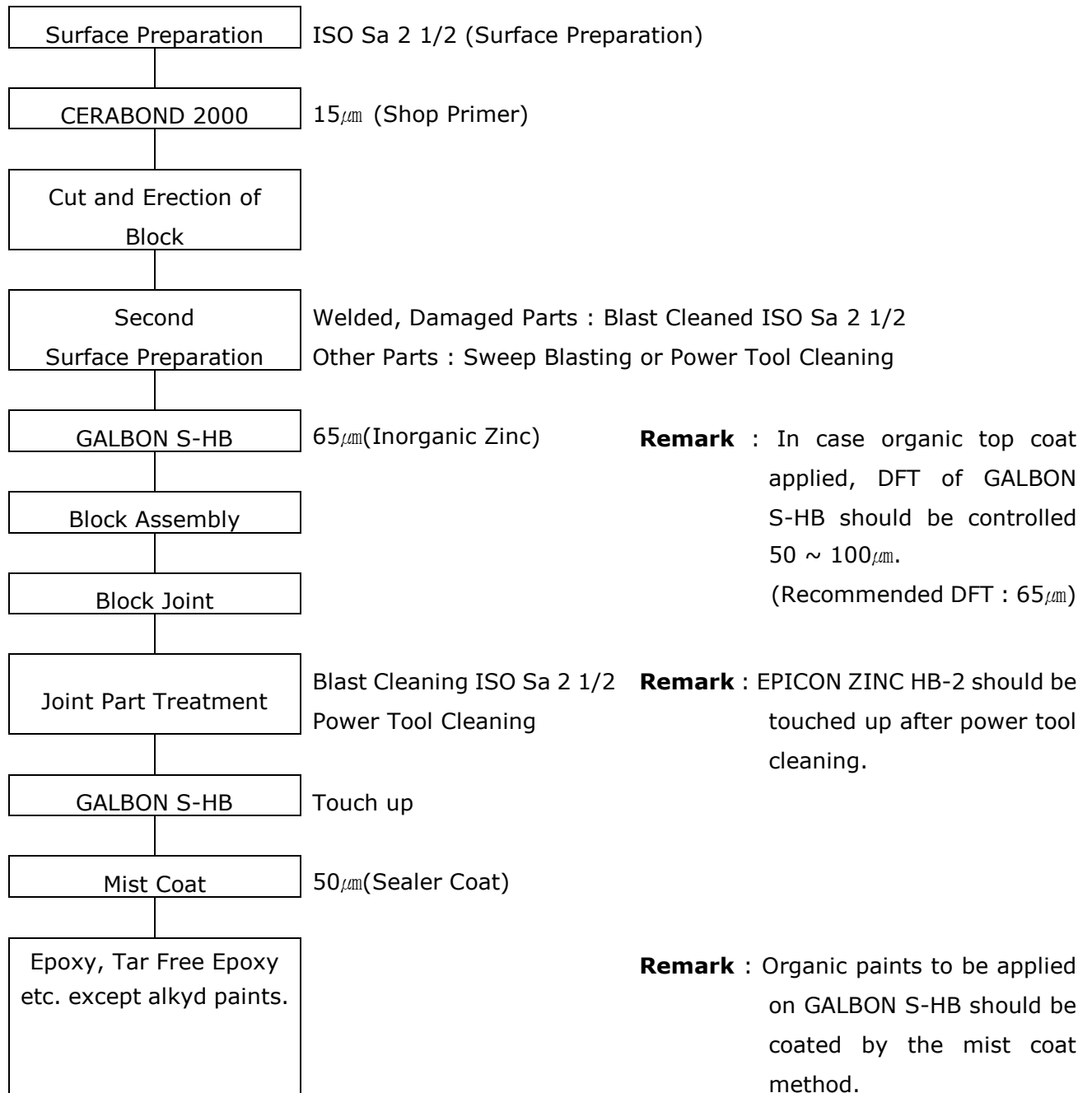
Small damaged parts, holiday and cracking should be treated with scraper, disc sander or power brush to ISO St 3, and be painted according to the recommended painting scheme, unless otherwise specified.

WARNING

GALBON S-HB is flammable. Keep away from sparks and flames during application.

Adequate ventilation should be provided during application and in the process of drying GALBON S-HB.

INORGANIC ZINC HULL COATING



Mist Coat Method

In order to avoid bubbling when an organic paint is coated on inorganic zinc paint, the diluted organic paint (with suitable thinner about 40%) is applied immediately after that the organic paint can be coated.

EPICON ZINC RICH PRIMER B-2

(EPZR B-2)

PRODUCT DESCRIPTION

EPICON ZINC RICH PRIMER B-2 is a two-pack primer, composed of metallic zinc, epoxy resin and hardener. The coating dries quickly at room temperature, provides excellent adhesion and anticorrosive properties, and is overcoatable with various types of topcoats (except for alkyd, vinyl, and inorganic based paints.) This primer is best suited for touch up applications as it has good application workability and good adhesion with topcoats

PRODUCT INFORMATION

Type	Epoxy zinc rich primer				
Recommended Use	As a primer for touch up applications after secondary surface preparation of steel plates, or as a primer for temporary corrosion protection of steels for shipbuilding and other steel products.				
Type of binder	Epoxy / Polyamide resin				
Mixing Ratio	Base : Hardener = 70 : 30 (by volume)				
Color	Grey				
Flash Point	Base : 10.0 °C, Hardener : 10.0 °C				
Solids by Volume	43% ± 2 (Test Method : ISO-3233)				
VOC	500 g/l (EPA Method24), 610 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	28.6 m ² /l [0.035 l/m ²] at D.F.T 15μm				
Wet Film Thickness	35 - 58μm				
Dry Film Thickness	15 - 25 μm				
Drying Time (at D.F.T. 18μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	8 min.	7 min.	4 min.	3 min.
	Hard Dry	4 hrs.	3 hrs.	2 hrs.	1.5 hrs.
Painting Interval (at D.F.T. 18μm)	Minimum	24 hrs.	20 hrs.	16 hrs.	10 hrs.
	Maximum	180 days	180 days	180 days	150 Days
Pot Life		72 hrs.	60 hrs.	48 hrs.	24 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 517 - 721			
	Paint output pressure	: 8.2 – 20.0 MPa			
	Viscosity	: 9 - 13 sec.(Ford Cup No.4)			
Preferable Preceding Coats	-				
Preferable Subsequent Coats	Various types of topcoats (except for alkyd, vinyl, and inorganic based paints)				
Packaging	Two pack product				

TECHNICAL DATA (at 18 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		15m	10m	8m	7m	5.5m	4m	3.5m	3m	2.5m	2m
Dry to recoat	Min.	40H	30H	24H	20H	18H	16H	13H	10H	8H	6H
	Max.	6M	6M	6M	6M	6M	6M	6M	5M	4M	4M
Dry to hard		8H	6H	4H	3H	2.5H	2H	1.8H	1.5H	1H	1H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		14H	10H	8H	7H	5H	4H	3.5H	3H	2.5H	2H
Pot life		90H	80H	72H	60H	54H	48H	36H	24H	16H	12H
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		Continuous: 60°C Non continuous: 150°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. Continue slow gentle stirring during application to avoid settling of zinc.
2. For the PSPC use, please refer to PSPC's TDS

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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The content of this Data Sheet, which is intended for facilitation of the User's understanding and convenience of use of the Products, is subject to change at any time without prior notice. We use our best efforts to reflect the latest and most accurate information in this Data Sheet, but we will not bear any liability whatsoever relating thereto. The User must confirm that the Data Sheet is the latest version prior to using the Products.

We do not guarantee the performance or safety of the Products when used for a purpose or use other than what is described herein. Nor will we be liable for any explanation or guarantee provided by any distributor or sales agent with respect to the Products, other than what is described in this Data Sheet.

Furthermore, each of the Products described herein is composed of various chemical substances, some of which may contain toxic and/or harmful ingredients and may cause harmful results as a result of misuse or overuse of the Products. For specific causes of risk, conditions of use, harmfulness, etc. of each of the Products, please carefully read, prior to use of the Products, the MSDS (Material Safety Data Sheet) inserted in each of the Products. We will not be liable for any accident that may be caused in violation thereof.

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CERABOND 2000

(CB 2000)

PRODUCT DESCRIPTION

CERABOND 2000, a two pack inorganic zinc shop primer, provides good cutting and welding properties with less weld defects at high speed welding, suitable for high speed gas cutting. It is highly resistant to white rust so that it shows long term anticorrosive properties after being heated up to 800°C, which reduces the cost and working process of secondary surface preparation.

PRODUCT INFORMATION

Type	Inorganic zinc silicate shop primer				
Recommended Use	As a shop primer for steel substrate of vessels, bridges, oil tanks, and other marine structures.				
Type of binder	Ethyl silicate				
Mixing Ratio	Paste : Base = 42 : 58 (by volume)				
Color	Green, Grey, Light Grey, Brown, Grey S				
Flash Point	Paste : 22.5 °C, Base : 13.5 °C				
Solids by Volume	30% ± 2 (Test Method : ISO-3233)				
VOC	584 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	20.00 m ² /l [0.050 l/m ²] at D.F.T 15 μ m				
Wet Film Thickness	33 - 100 μ m				
Dry Film Thickness	10 - 30 μ m				
Drying Time (at D.F.T. 15 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3 min.	3 min.	2 min.	2 min.
	Hard Dry	6 min.	5 min.	4 min.	3 min.
Painting Interval (at D.F.T. 15 μ m)	Min. Organic	14 days.	10 days.	7 days.	7 days.
	Inorganic	16 hrs.	8 hrs.	4 hrs.	4 hrs.
	Maximum	180 days	180 days	180 days	180 days
Pot Life		36 hrs.	30 hrs.	24 hrs.	15 hrs.
Thinner	INORGANIC SHOP PRIMER THINNER series				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: -5 ~ 40 °C			
	Humidity	: Maximum 90 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 617 - 923			
	Paint output pressure	: 3.8 – 8.9 MPa			
	Viscosity	: 9 - 11 sec.(Ford Cup No.4)			
Preferable Subsequent Coats	Various types of finish coats. Vinyl resin paints and alkyd resin paints (except for ROSWAN QD HB) are incompatible.				
Packaging	Two pack product				

TECHNICAL DATA (at 15 μ m)

Temp (°C)		-5	0	5	10	15	20	25	30	35	40
Item	Set to touch	5m	4m	3m	3m	3m	2m	2m	2m	1m	1m
Dry to recoat	Min.(Organic)	14D	14D	14D	10D	8D	7D	7D	7D	6D	6D
	Min.(Inorganic)	20H	18H	16H	8H	5H	4H	4H	4H	3H	3H
	Max.	6M	6M	6M	6M	6M	6M	6M	6M	6M	6M
Dry to hard		8m	7m	6m	5m	4.5m	4m	3.5m	3m	2.5m	2m
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		20H	18H	16H	8H	5H	4H	4H	4H	3H	3H
Pot life		48H	42H	36H	30H	26H	24H	18H	15H	12H	8H
Shelf life (M)		6M	6M	6M	6M	6M	6M	6M	6M	6M	6M
Max. heat resistance		Continuous: 400°C / Non-continuous: 800°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. Continue slow gentle stirring during application to avoid precipitation. Fast stirring will increase the viscosity of the mixture and may result in gelling.
2. Relative humidity during application should ideally be 50-90%. For the PSPC use, please refer to PSPC's TDS. Some of the figures and recommendations are different (e.g. Humidity: Max 85%RH).
3. Drying time indicated (below 10°C) is only a guide provided that pre-heating and after-heating is conducted (at 50-90%RH). When the relative humidity is low, curing/drying time will be longer.
4. Base component is self-curing/moisture curing. Avoid high humidity and/or rain as much as possible. Do not store the products on side. If it needs to be stored outdoors, make sure to protect the products from being exposed to rainfall etc. by covering with plastic sheet. In the case the paint cans are wet due to rainfall during transportation or the like, extra care must be taken when opening/mixing in the can so that the paint is not contaminated with water.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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ROSWAN QD HB

(RWN QD HB)

PRODUCT DESCRIPTION

ROSWAN QD HB, a alkyd resin based rust-preventing primer has highly effective rust-preventing property. It have excellent adhesion with alkyd finish coat and excellent workability.

PRODUCT INFORMATION

Type	Special alkyd resin primer, High build				
Recommended Use	As a rust-preventing primer for inside of superstructure, deck, hold, and other steel structures				
Type of binder	Special alkyd resin				
Color	White, L/Grey				
Flash Point	36.0 °C				
Solids by Volume	49% ± 2 (Test Method : ISO-3233)				
VOC	426 g/l (EPA Method24), 451 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	7.00 m ² /l [0.143 l/m ²] at D.F.T 70 μ m				
Wet Film Thickness	61 - 143 μ m				
Dry Film Thickness	30 - 70 μ m				
Drying Time (at D.F.T. 70 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	6 hrs.	3 hrs.	1.5 hrs.	45 min.
	Hard Dry	24 hrs.	14 hrs.	7 hrs.	4 hrs.
Painting Interval (at D.F.T. 70 μ m)	Minimum	48 hrs.	30 hrs.	20 hrs.	16 hrs.
	Maximum	-	-	-	-
Thinner	MARINE THINNER				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 719			
	Paint output pressure	: 14.7 - 17.7 MPa			
	Viscosity	: 1.0 - 2.0 Pa·s			
Preferable Preceding Coats	CERABOND 2000, etc.				
Preferable Subsequent Coats	EVAMARINE, Alkyd resin based paints				
Packaging	One pack product				

TECHNICAL DATA (at 70 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		16H	10H	6H	3H	2H	1.5H	1H	45m	40m	30m
Dry to recoat	Min.	110H	70H	48H	30H	24H	20H	18H	16H	14H	13H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		48H	36H	24H	14H	10H	7H	5H	4H	3H	3H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		110H	70H	48H	30H	24H	20H	18H	16H	14H	13H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		18M	18M	18M	18M	18M	18M	18M	18M	18M	18M
Max. heat resistance		100°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. Applying within the recommended film thickness range to avoid the lifting, wrinkling.
2. Ventilation shall be maintained from coating application until the completion of drying in order to remove residue of solvents and promote curing.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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EVAMARINE

(EM)

PRODUCT DESCRIPTION

EVAMARINE is a finish coat based on alkyd resin and excellent adhesion property, weathering resistance and excellent color retention.

PRODUCT INFORMATION

Type	Alkyd resin finish paint				
Recommended Use	As a finishing coat on exterior wood and steel surfaces				
Type of binder	Alkyd resin				
Color	White, As specified				
Flash Point	43.0 °C				
Solids by Volume	50% ± 2 (Test Method : ISO-3233)				
VOC	407 g/l (EPA Method24), 445 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	16.67 m ² /l [0.060 l/m ²] at D.F.T 30μm				
Wet Film Thickness	50 - 70 μm				
Dry Film Thickness	25 - 35 μm				
Drying Time (at D.F.T. 30μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	4 hrs.	3 hrs.	2 hrs.	1.5 hrs.
	Hard Dry	30 hrs.	16 hrs.	8 hrs.	6 hrs.
Painting Interval (at D.F.T. 30μm)	Minimum	48 hrs.	24 hrs.	16 hrs.	12 hrs.
	Maximum	-	-	-	-
Thinner	MARINE THINNER				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 615, 715			
	Paint output pressure	: 10.7 - 13.8 MPa			
	Viscosity	: 110 sec. (Ford Cup No.4)			
Preferable Preceding Coats	ROSWAN QD HB, Alkyd Resin based Primer, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 30 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		8H	5H	4H	3H	2.5H	2H	1.5H	1.5H	1.2H	1H
Dry to recoat	Min.	120H	72H	48H	24H	18H	16H	14H	12H	10H	8H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		70H	48H	30H	16H	12H	8H	7H	6H	5H	5H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		120H	72H	48H	24H	18H	16H	14H	12H	10H	8H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		18M	18M	18M	18M	18M	18M	18M	18M	18M	18M
Max. heat resistance		100°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. Applying within the recommended film thickness range to avoid the lifting, wrinkling.
2. Ventilation shall be maintained from coating application until the completion of drying in order to remove residue of solvents and promote curing.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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ECO SWAN II

(ECO SW II)

PRODUCT DESCRIPTION

ECO SWAN II, is a 2 pack waterborne epoxy coatings which has good rust preventing property, adhesion, & other property.

And It gives more safe & eco-friendly working condition such as low odor, & low VOC, etc.

ECO SWAN II is suitable for protection of superstructure, engine room, & etc.

PRODUCT INFORMATION

Type	Water base epoxy paint				
Recommend Use	As primer and finish coat for engine room, etc.				
Mixing Ratio	Base : Hardener = 90 : 10 (by Volume)				
Color	White, Green, Grey				
Flash Point	-				
Solids by Volume	50% ± 2 (Test Method : ISO-3233)				
VOC	50 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.0 m ² /l [0.2 l/m ²] at D.F.T 100μm				
Wet Film Thickness	150 - 300 μm				
Dry Film Thickness	75 - 150 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5℃	10℃	20℃	30℃
	Surface Dry	4 hrs.	3 hrs.	2 hrs.	1 hrs.
	Hard Dry	13 hrs.	11 hrs.	9 hrs.	7 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	13 hrs.	11 hrs.	9 hrs.	7 hrs.
	Maximum	-	-	-	-
Thinner	Fresh water				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 5℃			
	Humidity	: Maximum 80% R. H.			
	For Airless spray ;				
	Tip No.	: GRACO 515 - 523			
	Paint output pressure	: 12 – 15 MPa			
Viscosity	: 5.0 - 7.0 Pa·s				
Preferable Preceding Coats	CERABOND 2000				
Preferable Subsequent Coats	-				
Packaging	Two pack product				

Notes :

1. Drying & curing is favored good ventilation to assist evaporation of water.
2. Paint can should be closed after application to prevent skinning.
3. Do not storage the paint below 5℃ nor over 40℃.
4. Do not mix other water based paints or color base.
5. Agitate Base with power agitator until it is turned homogeneous, and then combine entire contents of Hardener with Base and mix thoroughly with power agitator. Then add appropriate water and mix thoroughly.
6. In common with all epoxy coatings, ECO SWAN II will show chalking and fading on exposure to UV light.

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	-	4H	3H	2.5H	2H	1.5H	1H	-	-
Dry to recoat	Min.	-	-	13H	11H	10H	9H	8H	7H	-	-
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		-	-	13H	11H	10H	9H	8H	7H	-	-
Dry to Touch-up		-	-	13H	11H	10H	9H	8H	7H	-	-
Pot life		-	-	5H	5H	5H	5H	4H	3H	-	-

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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CMP PEELABLE COAT

(CMP P C)

PRODUCT DESCRIPTION

CMP PEELABLE COAT, is a single component, spray applied, water based coating direct application over coated substrates and non-ferrous substrates.

And It gives more safe & Eco friendly working condition.

PRODUCT INFORMATION

Recommend Use	As temporary protection of coated substrates and non-ferrous substrates					
Color	Blue					
Solids by Volume	43% ± 2 (Test Method : ISO-3233)					
VOC	40 g/l (Korea Clean Air Conservation Act)					
Coverage(Theoretical)	4.3 m ² /l [0.23 l/m ²] at D.F.T 100μm					
Dry Film Thickness	75 - 100 μm (Touch-up by roller & brush)					
	100 - 125 μm (Spray by airless sprayer)					
Drying Time (at 100μm) & Over coating interval	Over coating interval with recommended top coat					
		Drying time of peelable coat			Over coating interval	
		Temp.	Touch Dry	Peel Time	Minimum	Maximum
		5℃	40min.	2.5 hrs.	3 day	-
		15℃	30min.	2 hrs.	2 day	-
		25℃	20min.	1.5 hrs.	2 day	-
	40℃	10min.	1 hrs.	1 day	-	
Method of Application	Airless spray, Brush, Roller					
Condition of Application	Mixing	: This material is a one component coating so it should be always mixed thoroughly with power agitator before application				
	Mix Ratio	: Not applicable				
	Temperature	: Minimum 5℃				
	Humidity	: Maximum 85% R. H.				
	For Airless spray ;					
	Tip No.	: GRACO 515, 617, 719				
	Paint output pressure	: 10.7 – 13.8 MPa				
SYSTEMS COMPATIBILITY	CMP PEELABLE COAT can be applied directly over coated steel and other non-ferrous substrate CMP PEELABLE COAT can be applied directly over the approved type. (Approved type: Urethane finish)					
THINNER	Fresh water					
Packaging	One pack product					

Notes :

1. Drying & curing is favored good ventilation to assist evaporation of water.
2. Paint can should be closed after application to prevent skinning.
3. Do not storage the paint below 5°C nor over 40°C.
4. Do not mix other water based paints or color base.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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SILVAX SQ-K

(SX SQ K)

PRODUCT DESCRIPTION

SILVAX SQ-K, modified vinyl paint, forms a practically impervious barrier against water and provides an excellent key for subsequent anti-fouling paints.

PRODUCT INFORMATION

Type	Modified vinyl paint				
Recommended Use	Binder-coat for anti-fouling paint				
Type of binder	Modified vinyl resin				
Color	S(Silver), SR(Pink Silver)				
Flash Point	18.8 °C				
Solids by Volume	30% ± 2 (Test Method : ISO-3233)				
VOC	615 g/l (EPA Method 24), 695 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	3.75 m ² /l [0.267 l/m ²] at D.F.T 80μm				
Wet Film Thickness	133 – 267 μm				
Dry Film Thickness	40 – 80 μm				
Drying Time (at D.F.T. 80μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	1.5 hr.	1 hr.	40 min.	30 min.
	Hard Dry	12 hrs.	10 hrs.	8 hrs.	6 hrs.
Painting Interval (at D.F.T. 80μm)	Minimum (AC)	12 hrs.	10 hrs.	8 hrs.	6 hrs.
	(AF)	15 hrs.	12 hrs.	9 hrs.	8 hrs.
	Maximum (AC)	-	-	-	-
	(AF)	7 days	7 days	7 days	7 days
Thinner	VINYL THINNER, RAVAX THINNER				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 0 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 719, 721			
	Paint output pressure	: 11.7 – 14.7 MPa			
Viscosity	: 80 sec.(Ford Cup No.4)				
Preferable Preceding Coats	BANNOH Series, etc.				
Preferable Subsequent Coats	SEA GRANDPRIX Series, SEAFLO NEO Series, etc.				
Packaging	One pack product				

TECHNICAL DATA (at 80 μ m)

Item		Temp (°C)	-5	0	5	10	15	20	25	30	35	40
			Set to touch		-	120m	90m	60m	50m	40m	35m	30m
Dry to recoat	Min.	AC	-	15H	12H	10H	9H	8H	7H	6H	5H	4H
		AF		20H	15H	12H	10H	9H	8H	8H	7H	7H
	Max.	AC	-	-	-	-	-	-	-	-	-	-
		AF		7D	7D	7D	7D	7D	7D	7D	7D	7D
Dry to hard		-	15H	12H	10H	9H	8H	7H	6H	5H	4H	
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-	
	Touch-up	-	-	-	-	-	-	-	-	-	-	
Dry to Touch-up		-	20H	15H	12H	10H	9H	8H	8H	7H	7H	
Pot life		-	-	-	-	-	-	-	-	-	-	
Shelf life (M)		-	24M	24M	24M	24M	24M	24M	24M	24M	24M	
Max. heat resistance		60°C										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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CMP AC-10

(CMP AC-10)

PRODUCT DESCRIPTION

CMP AC-10 is a special synthetic resin paint giving a high-build quick drying, effective protection against corrosion. It possesses good sea water resistance and shows good adhesion to subsequent coats.

PRODUCT INFORMATION

Type	Special synthetic resin anti-corrosive paint				
Recommended Use	Steel ship's hull and other steel structures / Binder-coat for antifouling paint				
Type of binder	Special synthetic resin				
Color	SR (Silver Red), S (Silver)				
Flash Point	26.5 °C				
Solids by Volume	41% ± 2 (Test Method : ISO-3233)				
VOC	537 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.46 m ² /l [0.183 l/m ²] at D.F.T 75 μ m				
Wet Film Thickness	122 – 244 μ m				
Dry Film Thickness	50 – 100 μ m				
Drying Time (at D.F.T. 75 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	1 hr.	45 mins.	30 mins.	20 mins.
	Hard Dry	8 hrs.	6 hrs.	4 hrs.	3 hrs.
Painting Interval (at D.F.T. 75 μ m)	Minimum (AC)	8 hrs.	6 hrs.	4 hrs.	3 hrs.
	(AF)	12 hrs.	8 hrs.	6 hrs.	5 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621, 623			
	Paint output pressure	: 11.7 – 14.7 MPa			
Viscosity	: 1.6 Pa · s				
Preferable Preceding Coats	EPICON ZINC RICH PRIMER B-2, CERABOND 2000, BANNOH series, etc.				
Preferable Subsequent Coats	ACRI FINISH series, SEA GRANDPRIX Series, SEAFLO NEO Series, etc.				
Packaging	One pack product				

TECHNICAL DATA (at 75 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		2.5H	1.5H	1H	45m	45m	30m	30m	25m	25m	20m
Dry to recoat	Min.(AC)	16H	10H	8H	6H	5H	4H	3.5H	3H	2.5H	2H
	Min.(AF)	24H	18H	12H	8H	7H	6H	5.5H	5H	4.5H	4H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		16H	10H	8H	6H	5H	4H	3.5H	3H	2.5H	2H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		16H	10H	8H	6H	5H	4H	3.5H	3H	2.5H	2H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		6M	6M	6M	6M	6M	6M	6M	6M	6M	6M
Max. heat resistance		60°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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ACRI 800 FINISH HS

(ACR 800 F HS)

PRODUCT DESCRIPTION

ACRI 800 FINISH HS is an acrylic paint designed for use as a finish coat of which paint film is formed by evaporation of solvents. The coating has excellent adhesion property and weathering resistance, with superior gloss and color retention.

PRODUCT INFORMATION

Type	Acrylic finish paint				
Recommended Use	Finishing coat on ship's topside, boot top, deck, superstructures				
Type of binder	Acrylic resin				
Color	White, As specified				
Flash Point	22.1 °C				
Solids by Volume	54% ± 2 (Test Method : ISO-3233)				
VOC	422 g/l (Method24), 441 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	15.00 m ² /l [0.065 l/m ²] at D.F.T 35 μ m				
Wet Film Thickness	56 - 74 μ m				
Dry Film Thickness	30 - 40 μ m				
Drying Time (at D.F.T. 35 μ m)	Temperature	5°C	10°C	20°C	30°C
	Set-to-touch	1 hr.	50 mins	30 mins	30 mins
	Hard Dry	6 hrs.	5 hrs.	4 hrs.	3.5 hrs.
Painting Interval (at D.F.T. 35 μ m)	Minimum	6 hrs.	5 hrs.	4 hrs.	3.5 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A, CR/ACRI THINNER C				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 0 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 515, 615, 715			
	Paint output pressure	: 11.7 – 14.7 MPa			
Viscosity	: 2dPa·s				
Preferable Preceding Coats	BANNOH series, BANNOH 1500 R Z, UMEGUARD SX Series, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

Notes :

1. Adequate ventilation must be maintained during application until it reaches hard dry in order to fully evaporate the solvents.
2. Do not add thinner exceeding maximum amount of VOC in each local regulation.
3. Control the wet film thickness within 200 μ m in a single coat to avoid unpredictable defects such as blistering, cracking and peeling.
4. Do not apply ACRI 700 FINISH ST on top of the ACRI 800 FINISH HS to avoid cracking.

TECHNICAL DATA (at 35 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		2H	1.5H	1H	50m	45m	30m	30m	30m	20m	20m
Dry to recoat	Min.	18H	8H	6H	5H	5H	4H	4H	3.5H	3H	2.5H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		18H	8H	6H	5H	5H	4H	4H	3.5H	3H	2.5H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		18H	8H	6H	5H	5H	4H	4H	3.5H	3H	2.5H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		18M	18M	18M	18M	18M	18M	18M	18M	18M	18M
Max. heat resistance		60°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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BANNOH 500

(B 500)

PRODUCT DESCRIPTION

BANNOH 500, is a multi-purpose primer, which gives excellent physical properties such as toughness, abrasion resistance and adhesion, etc., and has excellent flexibility, resistance to sea water and cathodic protection. It is suitable for most areas of ship.

PRODUCT INFORMATION

Type	Epoxy paint				
Recommended Use	Anti-corrosive paint for ship's hull, exposed decks, superstructures and crude oil tanks, etc.				
Type of binder	Pure Epoxy / Polyamide resin				
Mixing Ratio	Base : Hardener = 79 : 21 (by volume)				
Color	Grey, Light Grey, Red Brown, Brown and specified colors				
Flash Point	Base : 23.1 °C, Hardener : 24.9 °C				
Solids by Volume	60% ± 2 (Test Method : ISO-3233)				
VOC	394 g/l (EPA Method 24), 422 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	3.75 m ² /l [0.267 l/m ²] at D.F.T 160 μ m				
Wet Film Thickness	167 – 333 μ m				
Dry Film Thickness	100 – 200 μ m				
Drying Time (at D.F.T. 160 μ m)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	7 hrs.	5.5 hrs.	4 hrs.	2.5 hrs.
	Hard Dry	24 hrs.	18 hrs.	10 hrs.	8 hrs.
Painting Interval (at D.F.T. 160 μ m)	Minimum	24 hrs.	18 hrs.	10 hrs.	8 hrs.
	Maximum	-	-	-	-
Pot Life		18 hrs.	14 hrs.	7 hrs.	4 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
	Temperature	: Minimum 5 °C			
	Humidity	: Maximum 85 % R.H.			
Condition of Application	For Airless spray ;				
	Tip No.	: GRACO 619, 621, 623			
	Paint output pressure	: 14.7 - 17.7 MPa			
	Viscosity	: 1.6 - 2.0 Pa·s			
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.				
Preferable Subsequent Coats	BANNOH 1500R Z, EPICON MARINE HB, UNY MARINE Series, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 160 μ m)

Item		Temp (°C)	-5	0	5	10	15	20	25	30	35	40
Set to touch			-	-	7H	5.5H	4.5H	4H	3H	2.5H	2H	2H
Dry to recoat	Min.		-	-	24H	18H	14H	10H	9H	8H	7H	6H
	Max.*)		-	-	30D	30D	30D	30D	30D	30D	30D	30D
Dry to hard			-	-	24H	18H	14H	10H	9H	8H	7H	6H
Dry to immerse	Body coating		-	-	6D	5D	4D	3.5D	3D	2.5D	2D	2D
	Touch-up		-	-	3.5D	3.5D	2.5D	1.5D	1.5D	1.5D	1.5D	1.5D
	Minor touch-up		-	-	3D	2.5D	2D	1.5D	1D	1D	1D	1D
Dry to Touch-up			-	-	24H	18H	14H	10H	9H	8H	7H	6H
Pot life			-	-	18H	14H	10H	7H	5.5H	4H	3H	3H
Shelf life (M)			-	-	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance (Dry)		150°C (For steam pipe: 200 °C)										
Max. heat resistance (Wet)		Continuous: 60°C / Non-continuous: 75°C										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

*) For immersion

Notes :

In common with all epoxy coatings, BANNOH 500 will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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BANNOH 500 QD

(B 500 QD)

PRODUCT DESCRIPTION

BANNOH 500 QD, is a multi-purpose primer, which gives excellent physical properties such as toughness, abrasion resistance and adhesion, etc., and has excellent flexibility, resistance to sea water and cathodic protection. It is suitable for most areas of ship. It is suitable for the application at cold weather.

PRODUCT INFORMATION

Type	Epoxy paint				
Recommended Use	Anti-corrosive paint for ship's hull, exposed decks, superstructures and crude oil tanks, etc.				
Type of binder	Pure Epoxy / Polyamide resin				
Mixing Ratio	Base : Hardener = 79 : 21 (by volume)				
Color	Grey, Light Grey, Red Brown, Brown, Pearl Grey, Pearl Brown and specified colors				
Flash Point	Base : 23.1 °C, Hardener : 24.9 °C				
Solids by Volume	60% ± 2 (Test Method : ISO-3233)				
VOC	394 g/l (EPA Method 24), 422 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	3.75 m ² /l [0.267 l/m ²] at D.F.T 160 μ m				
Wet Film Thickness	167 – 333 μ m				
Dry Film Thickness	100 – 200 μ m				
Drying Time (at D.F.T. 160 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	5 hrs.	4.5 hrs.	3 hrs.	1.5 hrs.
	Hard Dry	17 hrs.	13 hrs.	8 hrs.	3.5 hrs.
Painting Interval (at D.F.T. 160 μ m)	Minimum	17 hrs.	13 hrs.	8 hrs.	3.5 hrs.
	Maximum	-	-	-	-
Pot Life		6 hrs.	5 hrs.	2 hrs.	1 hr.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 15 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619, 621, 623			
	Paint output pressure	: 14.7 - 17.7 MPa			
Viscosity	: 1.6 - 2.0 Pa·s				
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.				
Preferable Subsequent Coats	BANNOH 1500R Z, EPICON MARINE HB, UNY MARINE Series, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 160 μ m)

Item		Temp(°C)									
		-10	-5	0	5	10	15	20	25	30	35
Set to touch		15H	10H	7H	5H	4.5H	4H	3H	2.5H	1.5H	1.2H
Dry to recoat	Min.	120H	36H	24H	17H	13H	10H	8H	3.5H	3.5H	3H
	Max.*)	30D	30D	30D	30D	30D	30D	30D	30D	30D	30D
Dry to hard		120H	36H	24H	17H	13H	10H	8H	5H	3.5H	3.2H
Dry to immerse	Body	30D	8D	6D	5D	4D	3D	2D	2D	1.5D	1.5D
	Touch-up	20D	5D	4D	3D	2D	1.5D	1.5D	1.5D	1D	1D
	Minor touch-up	10D	3D	2D	1D	1D	1D	1D	1D	1D	1D
Dry to Touch-up		120H	36H	24H	17H	13H	10H	8H	5H	3.5H	3.2H
Pot life		18H	10H	8H	6H	5H	3.5H	2H	1.5H	1H	45m
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance (Dry)		150°C (For steam pipe: 200°C)									
Max. heat resistance (Wet)		Continuous: 60°C / Non-continuous: 75°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

*) For immersion

Notes :

In common with all epoxy coatings, BANNOH 500 QD will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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BANNOH 2000

(B 2000)

PRODUCT DESCRIPTION

BANNOH 2000, is a multi-purpose epoxy primer, which provides excellent physical properties including toughness, abrasion resistance and adhesion, etc., It has an excellent flexibility and resistance to sea water and cathodic protection. This product is IMO PSPC type approved for WBT and COT, applicable to most area of ship.

PRODUCT INFORMATION

Type	Polyamine adduct cured epoxy				
Recommended Use	Anti-corrosive paint for ship's hull, exposed decks, superstructures and ballast water tanks, etc.				
Type of binder	Pure Epoxy / Polyamine adduct resin				
Mixing Ratio	Base : Hardener = 82 : 18 (by volume)				
Color	Brown, Red Brown, Grey, Light grey, Yellow grey and specified colors				
Flash Point	Base : 32.5 °C, Hardener : 27.0 °C				
Solids by Volume	80% ± 2 (Test Method : ISO-3233)				
VOC	185 g/l (EPA Method24), 271 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.00 m ² /l [0.200 l/m ²] at D.F.T 160 μ m				
Wet Film Thickness	125 – 313 μ m				
Dry Film Thickness	100 – 250 μ m				
Drying Time (at D.F.T. 160 μ m)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	10 hrs.	7 hrs.	3 hrs.	1 hrs.
	Hard Dry	28 hrs.	18 hrs.	9 hrs.	5 hrs.
Painting Interval (at D.F.T. 160 μ m)	Minimum	28 hrs.	18 hrs.	9 hrs.	5 hrs.
	Maximum	-	-	-	-
Pot Life		8 hrs.	6 hrs.	3 hrs.	1.5 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619, 621, 623			
	Paint output pressure	: 14.7 - 17.7 MPa			
	Viscosity	: 1.5 - 2.0 Pa·s			
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.				
Preferable Subsequent Coats	BANNOH 1500R Z, EPICON MARINE HB, UNY MARINE Series, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 160 μ m)

Item		Temp(°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		33H	22H	10H	7H	6H	3H	2H	1H	1H	40m
Dry to recoat	Min.	86H	56H	28H	18H	16H	9H	8H	5H	4H	3H
	Max.*)	25D	25D	20D	20D	20D	20D	15D	15D	15D	15D
Dry to hard		86H	56H	28H	18H	16H	9H	8H	5H	4H	3H
Dry to immerse	Body	16D	9D	6D	5D	4D	3.5D	3D	2.5D	2D	2D
	Touch-up	12D	7D	3.5D	3D	2.5D	2D	1.5D	1.5D	1.5D	1.5D
	Minor touch up	10D	5D	3D	2.5D	2D	1.5D	1D	1D	1D	1D
Dry to Touch-up		86H	56H	28H	18H	16H	9H	8H	5H	4H	3H
Pot life		24H	15H	8H	6H	4H	3H	2H	1.5H	1H	0.5H
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance (Dry)		150°C									
Max. heat resistance (Wet)		Continuous: 60°C / Non-continuous: 75°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. *) For water ballast tank
2. Allowable Max DFT of Multiple coats : up to 2000 microns
3. In common with all epoxy coatings, BANNOH 2000 will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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BANNOH 2000 QD

(B 2000 QD)

PRODUCT DESCRIPTION

BANNOH 2000 QD, is a multi-purpose epoxy primer, which provides excellent physical properties including toughness, abrasion resistance and adhesion, etc., It has an excellent flexibility, resistance to sea water and cathodic protection.

This product is IMO PSPC type approved for WBT and COT, applicable to most area of ship and excellent low temperature curing property.

PRODUCT INFORMATION

Type	Polyamine adduct cured epoxy				
Recommended Use	Anti-corrosive paint for ship's hull, exposed decks, superstructures and ballast water tanks, crude oil tanks, etc.				
Type of binder	Pure Epoxy / Polyamine adduct resin				
Mixing Ratio	Base : Hardener = 75 : 25 (by volume)				
Color	Brown, Red Brown, Grey, Light grey, Yellow grey and specified colors				
Flash Point	Base : 32.5 °C, Hardener : 27.0 °C				
Solids by Volume	80% ± 2 (Test Method : ISO-3233)				
VOC	189 g/l (EPA Method24), 292 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.00 m ² /l [0.200 l/m ²] at D.F.T 160μm				
Wet Film Thickness	125 – 313 μm				
Dry Film Thickness	100 – 250 μm				
Drying Time (at D.F.T. 160μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	7 hrs.	4 hrs.	1 hrs.	40 min.
	Hard Dry	13 hrs.	8 hrs.	5 hrs.	3 hrs.
Painting Interval (at D.F.T. 160μm)	Minimum	13 hrs.	8 hrs.	5 hrs.	3 hrs.
	Maximum	-	-	-	-
Pot Life		6 hrs.	4 hrs.	2 hrs.	1 hrs
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum -15°C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619, 621, 623			
	Paint output pressure	: 14.7 - 17.7 MPa			
Viscosity	: 1.5 - 2.0 Pa·s				
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.				
Preferable Subsequent Coats	BANNOH 1500R Z, EPICON MARINE HB, UNY MARINE Series, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 160 μ m)

Item		Temp (°C)									
		-10	-5	0	5	10	15	20	25	30	35
Set to touch		15H	10H	8H	7H	4H	2H	1H	50m	40m	30m
Dry to recoat	Min.	120H	34H	20H	13H	8H	6H	5H	4H	3H	2H
	Max.*)	20D	15D	15D	15D	15D	10D	10D	7D	7D	7D
Dry to hard		120H	34H	20H	13H	8H	6H	5H	4H	3H	2H
Dry to immerse	Body	30D	8D	6D	5D	4D	3D	2D	1.5D	1.5D	1.5D
	Touch-up	20D	5D	4D	3D	2D	1.5D	1.5D	1.5D	1.5D	1.5D
	Minor touch up	10D	3D	2D	1D	1D	1D	1D	1D	1D	1D
Dry to Touch-up		120H	34H	20H	13H	8H	6H	5H	4H	3H	2H
Pot life		18H	10H	7H	6H	4H	3H	2H	1.5H	1H	40m
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance (Dry)		150°C									
Max. heat resistance (Wet)		Continuous: 60°C / Non-continuous: 75°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) For water ballast tank
- Allowable Max DFT of Multiple coats : up to 2000microns
- In common with all epoxy coatings, BANNOH 2000 QD will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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BANNOH 1500

(B 1500)

PRODUCT DESCRIPTION

BANNOH 1500, is a multi-purpose high solid epoxy primer, which provides excellent physical properties including toughness, abrasion resistance and adhesion, etc., It has an excellent flexibility and resistance to sea water and cathodic protection. This product is IMO PSPC type approved for WBT and COT, applicable to most area of ship.

PRODUCT INFORMATION

Type	Epoxy paint					
Recommended Use	Anti-corrosive paint for ship's hull, exposed decks, superstructures and ballast water tanks, crude oil tanks, etc.					
Type of binder	Pure Epoxy / Polyamine adduct					
Mixing Ratio	Base : Hardener = 79 : 21 (by volume)					
Color	Grey, Light Grey, Red Brown, Cream and specified colors					
Flash Point	Base : 28.0 °C, Hardener : 27.4 °C					
Solids by Volume	73% ± 2 (Test Method : ISO-3233)					
VOC	286 g/l (EPA Method 24), 314 g/l (Korea Clean Air Conservation Act)					
Coverage(Theoretical)	4.56 m ² /l [0.219 l/m ²] at D.F.T 160 μ m					
Wet Film Thickness	103 – 342 μ m					
Dry Film Thickness	75 – 250 μ m					
Drying Time (at D.F.T. 160 μ m)	Temperature	0 °C	5 °C	10 °C	20 °C	30 °C
	Surface Dry	19 hrs.	14 hrs.	8 hrs.	3 hrs.	2 hrs.
	Hard Dry	48 hrs.	27 hrs.	18 hrs.	9 hrs.	5 hrs.
Painting Interval (at D.F.T. 160 μ m)	Minimum	48 hrs.	27 hrs.	18 hrs.	9 hrs.	5 hrs.
	Maximum	-	-	-	-	-
Pot Life		7 hrs.	6 hrs.	5 hrs.	3 hrs.	1.5 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A					
Method of Application	Airless spray, Brush, Roller					
Condition of Application	Temperature	: Minimum 0 °C				
	Humidity	: Maximum 85 % R.H.				
	For Airless spray ;					
	Tip No.	: GRACO 519-723				
	Paint output pressure	: 15 - 25 MPa				
	Viscosity	: 1.5 - 2.0 Pa·s				
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.					
Preferable Subsequent Coats	BANNOH 1500R Z, EPICON MARINE HB, UNY MARINE Series, etc.					
Packaging	Two pack product					

TECHNICAL DATA (at 160 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		32H	19H	14H	8H	6H	3H	3H	2H	2H	1.5H
Dry to recoat	Min.	80H	48H	27H	18H	13H	9H	7H	5H	4H	3.5H
	Max.*)	30D	30D	30D	30D	30D	30D	30D	30D	30D	30D
Dry to hard		80H	48H	27H	18H	13H	9H	7H	5H	4H	3.5H
Dry to immerse*	Body	16D	9D	6D	5D	4D	3.5D	3D	2.5D	2D	2D
	Touch-up	12D	5D	3.5D	3.5D	2.5D	1.5D	1.5D	1.5D	1.5D	1.5D
	Minor touch-up	10D	4D	3D	2.5D	2D	1.5D	1D	1D	1D	1D
Dry to Touch-up		80H	48H	27H	18H	13H	9H	7H	5H	4H	3.5H
Pot life		10H	7H	6H	5H	4H	3H	2.5H	1.5H	1.5H	1H
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance (Dry)		150°C									
Max. heat resistance (Wet)		Continuous: 60°C / Non-continuous: 75°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. *) For water ballast tank, Allowable Max DFT of Multiple coats : up to 2000microns
2. In common with all epoxy coatings, BANNOH 1500 will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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BANNOH 3000

(B 3000)

PRODUCT DESCRIPTION

BANNOH 3000, is a multi-purpose epoxy primer containing aluminum pigments, which gives excellent physical properties such as toughness, abrasion resistance and adhesion, etc., and has excellent flexibility, resistance to sea water and cathodic protection.

PRODUCT INFORMATION

Type	Epoxy paint					
Recommended Use	As a rust inhibiting epoxy primer for various plants, steel structures, tank externals, ship's hull, etc.					
Type of binder	Pure Epoxy / Polyamine adduct					
Mixing Ratio	Base : Hardener = 79 : 21 (by volume)					
Color	ALG, ALB					
Flash Point	Base : 28.0 °C, Hardener : 27.4 °C					
Solids by Volume	72% ± 2 (Test Method : ISO-3233)					
VOC	286 g/l (EPA Method24), 314 g/l (Korea Clean Air Conservation Act)					
Coverage(Theoretical)	4.5 m ² /l [0.22 l/m ²] at D.F.T 160 μ m					
Wet Film Thickness	139 – 347 μ m					
Dry Film Thickness	100 – 250 μ m					
Drying Time (at D.F.T. 160 μ m)	Temperature	0°C	5°C	10°C	20°C	30°C
	Surface Dry	20 hrs.	14 hrs.	11 hrs.	4 hrs.	2.5 hrs.
	Hard Dry	48 hrs.	27 hrs.	19 hrs.	9 hrs.	5 hrs.
Painting Interval (at D.F.T. 160 μ m)	Minimum	48 hrs.	27 hrs.	19 hrs.	9 hrs.	5 hrs.
	Maximum	-	-	-	-	-
Pot Life		7 hrs.	6 hrs.	5 hrs.	3 hrs.	1.5 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A					
Method of Application	Airless spray, Brush, Roller					
Condition of Application	Temperature	: Minimum - 5 °C				
	Humidity	: Maximum 85 % R.H.				
	For Airless spray ;					
	Tip No.	: GRACO 621, 623				
	Paint output pressure	: 14.7 - 17.7 MPa				
Viscosity	: 1.5 - 2.0 Pa·s					
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.					
Preferable Subsequent Coats	BANNOH 1500R Z, EPICON MARINE HB, UNY MARINE Series, etc.					
Packaging	Two pack product					

TECHNICAL DATA (at 160 μ m)

Item		Temp (°C)	-5	0	5	10	15	20	25	30	35	40
Set to touch			-	20H	14H	11H	6H	4H	3H	2.5H	2H	2H
Dry to recoat	Min.		-	48H	27H	19H	13H	9H	7H	5H	4.5H	4.5H
	Max.*)		-	30D	30D	30D	30D	30D	30D	30D	30D	30D
Dry to hard			-	48H	27H	19H	13H	9H	7H	5H	4.5H	4.5H
Dry to immerse	Body		-	9D	6D	5D	4D	3.5D	3D	2.5D	2D	2D
	Touch-up		-	5D	3.5D	3.5D	2.5D	1.5D	1.5D	1.5D	1.5D	1.5D
	Minor touch-up			4D	3D	2.5D	2D	1.5D	1D	1D	1D	1D
Dry to Touch-up			-	48H	27H	19H	13H	9H	7H	5H	4.5H	4.5H
Pot life			-	7H	6H	5H	4H	3H	2.5H	1.5H	1.5H	1H
Shelf life (M)			-	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance (Dry)			150°C									
Max. heat resistance (Wet)			Continuous: 60°C / Non-continuous: 75°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. *) for water ballast tank
2. In common with all epoxy coatings, BANNOH 3000 will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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BANNOH 3000 QD

(B 3000 QD)

PRODUCT DESCRIPTION

BANNOH 3000 QD, is a multi-purpose epoxy primer containing aluminum pigments, which gives excellent physical properties such as toughness, abrasion resistance and adhesion, etc., and has excellent flexibility, resistance to sea water and cathodic protection.

PRODUCT INFORMATION

Type	Epoxy paint						
Recommended Use	As a rust Inhibiting epoxy primer for various plants, steel structures, tank externals, ship's hull, etc						
Type of binder	Pure Epoxy / Polyamine adduct						
Mixing Ratio	Base : Hardener = 79 : 21 (by volume)						
Color	ALG, ALB						
Flash Point	Base : 28.0 °C, Hardener : 28.0 °C						
Solids by Volume	72% ± 2 (Test Method : ISO-3233)						
VOC	286 g/l (EPA Method24), 314 g/l (Korea Clean Air Conservation Act)						
Coverage(Theoretical)	4.5 m ² /l [0.22 l/m ²] at D.F.T 160 μ m						
Wet Film Thickness	139 – 347 μ m						
Dry Film Thickness	100 – 250 μ m						
Drying Time (at D.F.T. 160 μ m)	Temperature	-5°C	0°C	5°C	10°C	20°C	30°C
	Surface Dry	15 hrs.	10 hrs.	9hrs.	7 hrs.	3 hrs.	1.5 hrs.
	Hard Dry	36 hrs.	24 hrs.	20hrs.	14 hrs.	8 hrs.	3.5 hrs.
Painting Interval (at D.F.T. 160 μ m)	Minimum	36 hrs.	24 hrs.	20hrs.	14 hrs.	8 hrs.	3.5 hrs.
	Maximum	-	-	-	-	-	-
Pot Life		7 hrs.	5 hrs.	5 hrs.	3.5 hrs.	2 hrs.	1 hr.
Thinner	EPICON THINNER, EPOXY THINNER A						
Method of Application	Airless spray, Brush, Roller						
Condition of Application	Temperature	: Minimum - 15°C					
	Humidity	: Maximum 85 % R.H.					
	For Airless spray ;						
	Tip No.	: GRACO 621, 623					
	Paint output pressure	: 14.7 - 17.7 MPa					
	Viscosity	: 1.5 - 2.0 Pa·s					
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.						
Preferable Subsequent Coats	BANNOH 1500R Z, EPICON MARINE HB, UNY MARINE Series, etc.						
Packaging	Two pack product						

TECHNICAL DATA (at 160 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		15H	10H	9H	7H	5H	3H	2.5H	1.5H	-	-
Dry to recoat	Min.	36H	24H	20H	14H	10H	8H	5H	3.5H	-	-
	Max.*)	30D	30D	30D	30D	30D	30D	30D	30D	-	-
Dry to hard		36H	24H	20H	14H	10H	8H	5H	3.5H	-	-
Dry to immerse	Body	8D	6D	5D	4D	3D	2D	1.5D	1.5D	-	-
	Touch-up	5D	4D	3D	2D	1.5D	1.5D	1D	1D	-	-
	Minor touch-up	3D	2D	1D	1D	1D	1D	1D	1D	-	-
Dry to Touch-up		36H	24H	20H	14H	10H	8H	5H	3.5H	-	-
Pot life		7H	5H	5H	3.5H	2.5H	2H	1.5H	1H	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	-	-
Max. heat resistance (Dry)		150°C									
Max. heat resistance (Wet)		Continuous: 60°C / Non-continuous: 75°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) for water ballast tank
- In common with all epoxy coatings, BANNOH 3000 QD will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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BANNOH 1500 R Z

(B1500R Z)

PRODUCT DESCRIPTION

BANNOH 1500R Z, is Tar free, epoxy anti-corrosive primer, based on epoxy resin and pigmentation.

- 1) Excellent water and sea water resistance. Suitable for anticorrosive for ship.
- 2) Excellent over-coatability with antifouling paint.
- 3) Smooth surface
- 4) Low VOC

PRODUCT INFORMATION

Type	Epoxy paint, High build				
Recommended Use	Anti-corrosive paint for outside shell, tie coat, exposed decks, superstructures				
Type of binder	Modified Epoxy / Polyamide resin				
Mixing Ratio	Base : Hardener = 81 : 19 (by volume)				
Color	Grey, Plum, Buff				
Flash Point	Base : 27.8 °C, Hardener : 24.8 °C				
Solids by Volume	64% ± 2 (Test Method : ISO-3233)				
VOC	319 g/l (EPA Method 24), 387 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	6.40 m ² /l [0.156 l/m ²] at D.F.T 100μm				
Wet Film Thickness	117 - 391 μm				
Dry Film Thickness	75 - 250 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	5 hrs.	4 hrs.	3 hrs.	2 hrs.
	Hard Dry	14 hrs.	10 hrs.	7 hrs.	6 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	12 hrs.	9 hrs.	6 hrs.	5 hrs.
	Maximum*	-	-	-	-
Pot Life		9 hrs.	6 hrs.	4 hrs.	3 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619, 621, 623			
	Paint output pressure	: 15 - 25 MPa			
Viscosity	: 1.8 - 2.2 Pa·s				
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, BANNOH Series, etc.				
Preferable Subsequent Coats	SEA GRANDPRIX Series, SEAFLO NEO Series, EPICON MARINE HB, UNYMARINE Series, etc.				
Packaging	Two pack product				

Note:

*Kindly consult CSP sales office.

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		9H	6H	5H	4H	3.5H	3H	2.5H	2H	1H	1H
Dry to recoat	Min.	30H	18H	12H	9H	7H	6H	5.5H	5H	3H	2H
	Max.*)	5D	5D	5D	5D	5D	5D	5D	5D	5D	5D
Dry to hard		32H	20H	14H	10H	8H	7H	6.5H	6H	5H	4H
Dry to immerse	Body coating	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		32H	20H	14H	10H	8H	7H	6.5H	6H	5H	4H
Pot life		16H	12H	9H	6H	5H	4H	3.5H	3H	2.5H	2H
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		100°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. *) : Please refer to the painting specifications.
2. In common with all epoxy coatings, BANNOH 1500 R Z will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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BANNOH 1500 QD

(B 1500 QD)

PRODUCT DESCRIPTION

BANNOH 1500 QD, is a multi-purpose epoxy primer, which provides excellent physical properties including toughness, abrasion resistance and adhesion, etc., It has an excellent flexibility, resistance to sea water and cathodic protection. This product is IMO PSPC type approved for WBT and COT, applicable to most area of ship and excellent low temperature curing property.

PRODUCT INFORMATION

Type	Epoxy paint						
Recommended Use	Anti-corrosive paint for ship's hull, exposed decks, superstructures and ballast water tanks, crude oil tanks, etc.						
Type of binder	Pure Epoxy / Polyamine adduct						
Mixing Ratio	Base : Hardener = 79 : 21 (by volume)						
Color	Grey, Light Grey, Red Brown, Cream and specified colors						
Flash Point	Base : 28.0 °C, Hardener : 27.4 °C						
Solids by Volume	73% ± 2 (Test Method : ISO-3233)						
VOC	286 g/l (EPA Method 24), 314 g/l (Korea Clean Air Conservation Act)						
Coverage(Theoretical)	4.56 m ² /ℓ [0.219 ℓ/m ²] at D.F.T 160 μ m						
Wet Film Thickness	103 – 342 μ m						
Dry Film Thickness	75 – 250 μ m						
Drying Time (at D.F.T. 160 μ m)	Temperature	-5 °C	0 °C	5 °C	10 °C	20 °C	30 °C
	Surface Dry	11 hrs.	8 hrs.	7 hrs.	5 hrs.	2 hrs.	1 hrs.
	Hard Dry	35 hrs.	23 hrs.	17 hrs.	11 hrs.	6 hrs.	3 hrs.
Painting Interval (at D.F.T. 160 μ m)	Minimum	35 hrs.	23 hrs.	17 hrs.	11 hrs.	6 hrs.	3 hrs.
	Maximum	-	-	-	-	-	-
Pot Life		7 hrs.	5 hrs.	4.5 hrs.	3.5 hrs.	2 hrs.	1 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A						
Method of Application	Airless spray, Brush, Roller						
Condition of Application	Temperature	: Minimum - 15 °C					
	Humidity	: Maximum 85 % R.H.					
	For Airless spray ;						
	Tip No.	: GRACO 621, 623					
	Paint output pressure	: 14.7 - 17.7 MPa					
	Viscosity	: 1.6 - 2.0 Pa·s					
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.						
Preferable Subsequent Coats	BANNOH 1500R Z, EPICON MARINE HB, UNY MARINE Series, etc.						
Packaging	Two pack product						

TECHNICAL DATA (at 160 μ m)

Item		Temp (°C)									
		-10	-5	0	5	10	15	20	25	30	35
Set to touch		16H	11H	8H	7H	5H	3H	2H	1.5H	1H	50min
Dry to recoat	Min.	120H	35H	23H	17H	11H	8H	6H	4H	3H	2.5H
	Max.*)	30D	30D	30D	30D	30D	30D	30D	30D	30D	30D
Dry to hard		120H	35H	23H	17H	11H	8H	6H	4H	3H	2.5H
Dry to immerse*	Body	30D	8D	6D	5D	4D	3D	2D	1.5D	1.5D	1.5D
	Touch-up	20D	5D	4D	3D	2D	1.5D	1.5D	1D	1D	1D
	Minor touch-up	10D	3D	2D	1D	1D	1D	1D	1D	1D	1D
Dry to Touch-up		120H	35H	23H	17H	11H	8H	6H	4H	3H	2.5H
Pot life		10H	7H	5H	4.5H	3.5H	2.5H	2H	1.5H	1H	40min
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance (Dry)		150°C									
Max. heat resistance (Wet)		Continuous: 60°C / Non-continuous: 75°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) For water ballast tank,
- Allowable Max DFT of Multiple coats : up to 2000microns
- In common with all epoxy coatings, BANNOH 1500 QD will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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EPICON ZINC HB-2

(EPZ HB-2)

PRODUCT DESCRIPTION

EPICON ZINC HB-2, a high-build anti-corrosive paint, based on a combination of metallic zinc, epoxy resin and hardener, is quick drying and gives excellent protection of steel against salt water and water.

This paint is compatible with almost any type of subsequent coat and is highly resistant to heat, oil, water and solvent.

PRODUCT INFORMATION

Type	Epoxy zinc paint, high-build				
Recommended Use	As a rust preventive paint for interior and exterior of steel structure.				
Type of binder	Epoxy / Polyamide resin, Metallic zinc				
Mixing Ratio	Base : Hardener = 76 : 24 (by volume)				
Color	Grey				
Flash Point	Base : 19.5 °C, Hardener : 22.5 °C				
Solids by Volume	55% ± 2 (Test Method : ISO-3233)				
VOC	405 g/l (EPA Method 24), 439 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	8.46 m ² /l [0.118 l/m ²] at D.F.T 65μm				
Wet Film Thickness	73 – 136 μm				
Dry Film Thickness	40 – 75 μm				
Drying Time (at D.F.T. 65μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	30 min.	25 min.	20 min.	15 min.
	Hard Dry	6 hrs.	5 hrs.	4 hrs.	3 hrs.
Painting Interval (at D.F.T. 65μm)	Minimum	24 hrs.	20 hrs.	16 hrs.	8 hrs.
	Maximum	180 days	180 days	180 days	180 days
Pot Life		36 hrs.	24 hrs.	12 hrs.	8 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 823			
	Paint output pressure	: 8.8 – 11.8 MPa			
	Viscosity	: 28 - 32 sec.(Ford Cup No.4)			
Preferable Preceding Coats	-				
Preferable Subsequent Coats	BANNOH series, BISCON HB-NT L, etc (except for alkyd and inorganic type paint)				
Packaging	Two pack product				

TECHNICAL DATA (at 65 μ m)

Item	Temp (°C)	-5	0	5	10	15	20	25	30	35	40
		Set to touch	-	-	30m	25m	20m	20m	15m	15m	10m
Dry to recoat	Min.	-	-	24H	20H	18H	16H	12H	8H	7H	6H
	Max.	-	-	180D	180D	180D	180D	180D	180D	180D	180D
Dry to hard	-	-	6H	5H	4.5H	4H	3.5H	3H	2.5H	2H	
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up	-	-	24H	20H	18H	16H	12H	8H	7H	6H	
Pot life	-	-	36H	24H	16H	12H	9H	8H	6H	5H	
Shelf life (M)	-	-	12M	12M	12M	12M	12M	12M	12M	12M	
Max. heat resistance (Dry)	150°C										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

In common with all epoxy coatings, EPICON ZINC HB-2 will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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UNIVAN HS PRIMER J

(UV HS Pr J)

PRODUCT DESCRIPTION

UNIVAN HS PRIMER J, based on a combination of modified epoxy resin and rust-preventive pigment, has excellent adhesion property, toughness and effective rust-preventive property.

It is suitable for protection of superstructures and exposed deck of steel ships.

PRODUCT INFORMATION

Type	Epoxy rust-preventive paint, high-build				
Recommended Use	Primer on inside and outside of superstructures, exposed deck of steel ships and other steel structures				
Type of binder	Modified epoxy / amide resin				
Mixing Ratio	Base : Hardener = 76 : 24 (by volume)				
Color	Grey, Red Brown				
Flash Point	Base : 23.7 °C, Hardener : 27.0 °C				
Solids by Volume	57% ± 2 (Test Method : ISO-3233)				
VOC	411 g/l (Method24), 429 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	2.85 m ² /l [0.351 l/m ²] at D.F.T 200 μ m				
Wet Film Thickness	88 – 351 μ m				
Dry Film Thickness	50 – 200 μ m				
Drying Time (at D.F.T. 200 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3.5 Hrs.	2.5 hrs.	1.5 hrs.	1 hr.
	Hard Dry	30 hrs.	22 hrs.	12 hrs.	10 hrs.
Painting Interval (at D.F.T. 200 μ m)	Minimum	24 hrs.	18 hrs.	10 hrs.	8 hrs.
	Maximum	-	-	-	-
Pot Life		18 hrs.	14 hrs.	7 hrs.	4 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 719, 721			
	Paint output pressure	: 14.7 – 17.7 MPa			
	Viscosity	: 1.0 - 1.5 Pa·s			
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2 etc.				
Preferable Subsequent Coats	EVAMARINE, ACRI 800 FINISH HS, UNY MARINE Series, EPICON MARINE HB, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 200 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	-	3.5H	2.5H	2H	1.5H	1.5H	1H	0.8H	0.6H
Dry to recoat	Min.	-	-	24H	18H	14H	10H	9H	8H	6H	5H
	Max.*)	-	-	-	-	-	-	-	-	-	-
Dry to hard		-	-	30H	22H	17H	12H	11H	10H	8H	6H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	-	24H	18H	14H	10H	9H	8H	7H	6H
Pot life		-	-	18H	14H	10H	7H	5H	4H	3H	2H
Shelf life (M)		-	-	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		100°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) Please consult with CSP sales office.
- In common with all epoxy coatings, UNIVAN HS PRIMER J will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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UNIVAN HS PRIMER

(UV HS P)

PRODUCT DESCRIPTION

UNIVAN HS PRIMER, is a high build type epoxy rust preventing paint based on a combination of epoxy resin and special curing agent. It has the following advantages;

1. Excellent rust-preventive property
2. Excellent compatibility with other kind of subsequent paint.
3. Excellent adhesion on low grade surface preparation.
4. Excellent application workability.
5. Excellent physical properties such as toughness, impact and abrasion resistance.

PRODUCTION INFORMATION

Type	Epoxy primer, high build				
Recommended Use	As a primer for plants, bridges, exterior of oil storage tank, towers, and other steel structures.				
Type of binder	Modified epoxy / amide resin				
Mixing Ratio	Base : Hardener = 78 : 22(by volume)				
Color	Grey, Light grey				
Flash Point	Base : 19.8 °C, Hardener : 17.0 °C				
Solids by Volume	54% ± 2 (Test Method : ISO-3233)				
VOC	388 g/l (EPA Method24), 449 g/l (Korea Air Conservation Act)				
Coverage(Theoretical)	5.4 m ² /l [0.185 l/m ²] at D.F.T 100 μ m				
Wet Film Thickness	111 ~ 231 μ m				
Dry Film Thickness	60 ~ 125 μ m				
Drying Time (at D.F.T. 100 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	4 hrs.	3 hrs.	2 hrs.	1 hr.
	Hard Dry	48 hrs.	24 hrs.	16 hrs.	10 hrs.
Painting Interval (at D.F.T. 100 μ m)	Minimum	48 hrs.	24 hrs.	16 hrs.	10 hrs.
	Maximum	90 days	90 days	90 days	90 days
Pot Life		12 hrs.	6 hrs.	4 hrs.	2 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621, 719, 721			
	Paint output pressure	: 14.7 – 23.6 MPa			
Viscosity	: 1.2 – 1.8 Pa.s				
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.				
Preferable Subsequent Coats	UNY MARINE Series, EPICON MARINE HB, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	-	4H	3H	2.5H	2H	1.5H	1H	50m	40m
Dry to recoat	Min.	-	-	48H	24H	18H	16H	12H	10H	8H	6H
	Max.*)	-	-	90D	90D	90D	90D	90D	90D	90D	90D
Dry to hard		-	-	48H	24H	18H	16H	12H	10H	8H	6H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	-	48H	24H	18H	16H	12H	10H	8H	6H
Pot life		-	-	12H	6H	5H	4H	3H	2H	1.5H	1H
Shelf life (M)		-	-	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		120°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) Please consult with CSP sales office.
- In common with all epoxy coatings, UNIVAN HS PRIMER will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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EPICON MARINE UNDERCOAT M

(EPM UC M)

PRODUCT DESCRIPTION

EPICON MARINE UNDERCOAT M, based on a combination of modified epoxy resin and polyamide curing agent, has excellent durability and adhesion properties.

It is protective undercoat for steel ships, bridges and steel structures.

PRODUCT INFORMATION

Type	Modified Epoxy/Polyamide undercoat				
Recommended Use	Undercoat of steel ships, bridges and other steel structures				
Type of binder	Modified epoxy / amide resin				
Mixing Ratio	Base : Hardener = 80 : 20 (by volume)				
Color	Red Brown, White, Grey, Black				
Flash Point	Base : 24.5 °C, Hardener : 27.5 °C				
Solids by Volume	45% ± 2 (Test Method : ISO-3233)				
VOC	503 g/l (EPA Method24), 525 g/l (Korea Air Conservation Act)				
Coverage(Theoretical)	9.00 m ² /l [0.111 l/m ²] at D.F.T 50 μ m				
Wet Film Thickness	88 - 131 μ m				
Dry Film Thickness	40 - 60 μ m				
Drying Time (at D.F.T. 50 μ m)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	3.5 hrs.	2.5 hrs.	1.5 hrs.	1 hr.
	Hard Dry	34 hrs.	24 hrs.	14 hrs.	10 hrs.
Painting Interval (at D.F.T. 50 μ m)	Minimum	24 hrs.	18 hrs.	16 hrs.	8 hrs.
	Maximum*	-	-	-	-
Pot Life		24 hrs.	20 hrs.	18 hrs.	12 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619, 719			
	Paint output pressure	: 14.7 – 17.7 MPa			
	Viscosity	: 80 sec.(Ford Cup No.4)			
Preferable Preceding Coats	BANNOH Series				
Preferable Subsequent Coats	UNY MARINE Series, EPICON MARINE HB, etc.				
Packaging	Two pack product				

Note :

* Please refer to the painting specifications.

TECHNICAL DATA (at 50 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	-	3.5H	2.5H	2H	1.5H	1.5H	1H	1H	45m
Dry to recoat	Min.	-	-	24H	18H	17H	16H	12H	8H	7H	6H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		-	-	34H	24H	18H	14H	12H	10H	9H	8H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	-	24H	18H	17H	16H	12H	8H	7H	6H
Pot life		-	-	24H	20H	19H	18H	15H	12H	10H	7H
Shelf life (M)		-	-	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		100°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes : In common with all epoxy coatings, EPICON MARINE UNDERCOAT M will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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EPICON MARINE HB

(EPM HB)

PRODUCT DESCRIPTION

EPICON MARINE HB, based on a combination of epoxy resin and polyamide curing agent, has high-build excellent durability and adhesion properties.

It is suitable as a finish coat for protection of steel ships, bridges and steel structures.

PRODUCT INFORMATION

Type	Epoxy / Polyamide finish coat, high-build				
Recommended Use	Finish coat of epoxy system of steel ships, bridges and other steel structures				
Type of binder	Epoxy / Polyamide resin				
Mixing Ratio	Base : Hardener = 73 : 27 (by volume)				
Color	White, As specified				
Flash Point	Base : 23.0 °C, Hardener : 27.5 °C				
Solids by Volume	58% ± 2 (Test Method : ISO-3233)				
VOC	377 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.80 m ² /l [0.172 l/m ²] at D.F.T 100 μ m				
Wet Film Thickness	86 – 172 μ m				
Dry Film Thickness	50 – 100 μ m				
Drying Time (at D.F.T. 100 μ m)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	3.5 hrs.	2.5 hrs.	1.5 hrs.	1 hr.
	Hard Dry	38 hrs.	28 hrs.	16 hrs.	12 hrs.
Painting Interval (at D.F.T. 100 μ m)	Minimum	24 hrs.	18 hrs.	10 hrs.	8 hrs.
	Maximum	-	-	-	-
Pot Life		4 hrs.	3 hrs.	2.5 hrs.	1.5 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray				
Condition of Application	Temperature	: Minimum			- 15 °C
	Humidity	: Maximum			85 % R.H.
	For Airless spray ;				
	Tip No.	: GRACO 719, 721			
	Paint output pressure	: 14.7 -17.7 MPa			
	Viscosity	: 1.5 Pa·s			
Preferable Preceding Coats	BANNOH Series, UMEGUARD Series, etc.				
Preferable Subsequent Coats	-				
Packaging	Two pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)										
		-10	-5	0	5	10	15	20	25	30	35	40
Set to touch		8H	5.5H	4.5H	3.5H	2.5H	2H	1.5H	1.5H	1H	0.8H	0.6H
Dry to recoat	Min.	48H	38H	30H	24H	18H	14H	10H	9H	8H	6H	5H
	Max.*)	-	-	-	-	-	-	-	-	-	-	-
Dry to hard		72H	55H	44H	38H	28H	22H	16H	14H	12H	10H	8H
Dry to immerse	Body coating	-	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		48H	38H	30H	24H	18H	14H	10H	9H	8H	6H	5H
Pot life		6H	5H	4H	4H	3H	3H	2.5H	2H	1.5H	1.5H	1H
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		150°C										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *)Please consult with CSP sales office
- In common with all epoxy coatings, EPICON MARINE HB will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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EPICON MARINE CH

(EPM CH)

PRODUCT DESCRIPTION

EPICON MARINE CH, based on a combination of epoxy resin and polyamide curing agent, has high-build excellent durability and adhesion properties.

It is suitable for car hold, and inside of steel superstructures.

PRODUCT INFORMATION

Type	Epoxy paint				
Recommended Use	Car hold(ceiling, wall), inside of steel superstructure, anticorrosive finish coat				
Type of binder	Epoxy / Polyamide resin				
Mixing Ratio	Base : Hardener = 78 : 22 (by volume)				
Color	White, As specified				
Flash Point	Base : 24 °C, Hardener : 21 °C				
Solids by Volume	58% ± 2 (Test Method : ISO-3233)				
VOC	444 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.80 m ² /l [0.172 l/m ²] at D.F.T 100μm				
Wet Film Thickness	86 – 172 μm				
Dry Film Thickness	50 – 100 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	4.5 hrs.	3.5 hrs.	2 hrs.	1 hr.
	Hard Dry	45 hrs.	30 hrs.	16 hrs.	12 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	28 hrs.	19 hrs.	10 hrs.	8 hrs.
	Maximum	-	-	-	-
Pot Life		24 hrs.	12 hrs.	10 hrs.	8 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush				
Condition of Application	Temperature	: Minimum 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 719, 721			
	Paint output pressure	: 14.7 -17.7 MPa			
	Viscosity	: 1.5 Pa·s			
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, BANNOH Series, etc.				
Preferable Subsequent Coats	-				
Packaging	Two pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	-	4.5H	3.5H	3H	2H	1.5H	1H	40m	30m
Dry to recoat	Min.	-	-	28H	19H	15H	10H	9H	8H	7H	6H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		-	-	45H	30H	24H	16H	14H	12H	10H	8H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	-	28H	19H	15H	10H	9H	8H	7H	6H
Pot life		-	-	24H	12H	11H	10H	9H	8H	7H	6H
Shelf life (M)		-	-	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		Continuous : 100°C / Non-continuous : 120°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

In common with all epoxy coatings, EPICON MARINE CH will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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UNY MARINE

(UM)

PRODUCT DESCRIPTION

UNY MARINE ,based on polyurethane resin, has excellent gloss retention, durability and chemical resistance, etc. It is suitable for protection of outside of superstructure of steel ships.

PRODUCT INFORMATION

Type	Polyurethane finish paint				
Recommended Use	Glossy finish coat on outside of superstructure, deck and fittings.				
Type of binder	Acryl polyol / Isocyanate resin				
Mixing Ratio	Base : Hardener = 80 : 20 (by volume)				
Color	White, As specified				
Flash Point	Base : 23.0 °C, Hardener : 29.5 °C				
Solids by Volume	51% ± 2 (Test Method : ISO-3233)				
VOC	446 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	10.20 m ² /l [0.098 l/m ²] at D.F.T 50 μ m				
Wet Film Thickness	59 - 98 μ m				
Dry Film Thickness	30 - 50 μ m				
Drying Time (at D.F.T. 50 μ m)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	50 min	30 min	20 min.	10 min.
	Hard Dry	12 hrs.	8 hrs.	6 hrs.	4 hrs.
Painting Interval (at D.F.T. 50 μ m)	Minimum	8 hrs.	6 hrs.	4 hrs.	2 hrs.
	Maximum	-	-	-	-
Pot Life		24 hrs.	20 hrs.	16 hrs.	8 hrs.
Thinner	UNY MARINE THINNER, URETHANE THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 15 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 515, 615, 715, 813			
	Paint output pressure	: 11.7 – 14.7 MPa			
	Viscosity	: 25 - 35 sec.(Ford Cup No.4)			
Preferable Preceding Coats	BANNOH Series, UNIVAN HS PRIMER, EPICON MARINE UNDERCOAT M, etc.				
Preferable Subsequent Coats	-				
Packaging	Two pack product				

TECHNICAL DATA (at 50 μ m)

Item		Temp (°C)									
		-10	-5	0	5	10	15	20	25	30	35
Set to touch		240m	120m	80m	50m	30m	25m	20m	15m	10m	8m
Dry to recoat	Min.	18H	14H	12H	8H	6H	5H	4H	3H	2H	1.5H
	Max.*)	-	-	-	-	-	-	-	-	-	-
Dry to hard		45H	30H	20H	12H	8H	7H	6H	5H	4H	3H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		18H	14H	12H	8H	6H	5H	4H	3H	2H	1.5H
Pot life		40H	40H	30H	24H	20H	18H	16H	12H	8H	6H
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		Non-continuous: 120°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. *) Please refer to the painting specifications.
2. The performance of hardener decrease reacting with moisture, please handle with care.
3. Using all amount of Hardener once is recommended. If hardener is stored after opening package, please cover completely and store at shadow area(distance from hot or sunlight exposure area).

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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UNY MARINE HS FINISH SILVER

(UM HS S)

PRODUCT DESCRIPTION

UNY MARINE HS FINISH SILVER, based on a combination of acrylic polyol and non-yellowing type poly isocyanates resin pigmented with aluminum pigments, is a polyurethane finish coat.

It has the following advantages;

1. Excellent durability while maintaining tough paint film for a long term.
2. Excellent weather resistance(gloss retention)
3. Excellent adhesion to preceding coats.
4. Excellent physical properties such as toughness, impact and abrasion resistance.
5. Excellent resistance to oil and chemicals.
6. Re-coatable

TECHNICAL DATA

Type	Polyurethane silver finish paint				
Recommended Use	As a finish coat of epoxy/polyurethane system, such as plants, bridges, exterior of oil storage tanks and steel structures				
Type of binder	Acryl polyol / Isocyanate resin				
Mixing Ratio	Base : Paste : Hardener = 81 : 18 : 21 (by volume)				
Color	Silver				
Flash Point	Base : 18.0 °C, Paste : 43.3 °C, Hardener : 29.5 °C				
Solids by Volume	44% ± 2 (Test Method : ISO-3233)				
VOC	483 g/l (EPA Method24), 530 g/l (Korea Air Conservation Act)				
Coverage(Theoretical)	17.5 m ² /l [0.057 l/m ²]				
Wet Film Thickness	57 μm				
Dry Film Thickness	25 μm				
Drying Time (at D.F.T. 25μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	50 min	30 min	20 min.	10 min.
	Hard Dry	12 hrs.	8 hrs.	6 hrs.	4 hrs.
Painting Interval (at D.F.T. 25μm)	Minimum	12 hrs.	8 hrs.	6 hrs.	4 hrs.
	Maximum	-	-	-	-
Pot Life		24 hrs.	20 hrs.	16 hrs.	8 hrs.
Thinner	UNY MARINE THINNER, URETHANE THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 0 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 515, 615, 715			
	Paint output pressure	: 14.7 – 17.7 MPa			
	Viscosity	: 30 - 50 sec.(Ford Cup No.4)			
Preferable Preceding Coats	BANNOH Series, UNIVAN HS PRIMER, EPICON MARINE UNDERCOAT M, etc.				
Preferable Subsequent Coats	-				
Packaging	Three pack product				

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TECHNICAL DATA (at 25 μ m)

Item		Temp (°C)									
		-	0	5	10	15	20	25	30	35	40
Set to touch		-	80m	50m	30m	25m	20m	15m	10m	8m	6m
Dry to recoat	Min.	-	24H	12H	8H	7H	6H	5H	4H	3H	2H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		-	24H	12H	8H	7H	6H	5H	4H	3H	2H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	-	-	-	-	-	-	-	-	-
Pot life		-	30H	24H	20H	18H	16H	12H	8H	7H	5H
Shelf life (M)		-	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		Non-continuous: 120°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. The performance of hardener decrease reacting with moisture, please handle with care.
2. Initially, paste and small amount of base should be pre-mixed, after pre-mixed all base and hardener should be mixed into initial pre-mixed material. Always mix a complete unit in the proportions supplied. Then add appropriate thinner and mix thoroughly.
3. If dry surface is rubbed, slight aluminum pigment attachment can be expected.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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UNY MARINE HS

(UM HS)

PRODUCT DESCRIPTION

UNY MARINE HS, based on an acrylic polyol and non-yellowing poly isocyanates, is a high-solid type topcoats.

It has the following advantages;

1. Excellent durability while maintaining tough paint film for a long term.
2. Excellent weather resistance(gloss retention)
3. Excellent adhesion to preceding coats.
4. Excellent physical properties such as toughness, impact and abrasion resistance.
5. Excellent resistance to oil and chemicals.
6. Re-coatable

TECHNICAL DATA

Type	Polyurethane finish paint, high build				
Recommended Use	As a finish coat of epoxy/polyurethane system plants, bridges, outside of oil storage tanks and steel structures, etc.				
Type of binder	Acryl polyol / Isocyanate resin				
Mixing Ratio	Base : Hardener = 77 : 23 (by volume)				
Color	White, As specified				
Flash Point	Base : 22.0 °C, Hardener : 29.5 °C				
Solids by Volume	57% ± 2 (Test Method : ISO-3233)				
VOC	375 g/l (EPA Method24), 437 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	8.14 m ² /l [0.122 l/m ²] at D.F.T 70 μ m				
Wet Film Thickness	89 - 140 μ m				
Dry Film Thickness	50 - 80 μ m				
Drying Time (at D.F.T. 70 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	1 Hrs.	40 min.	30 min.	20 min.
	Hard Dry	24 hrs.	12 hrs.	8 hrs.	6 hrs.
Painting Interval (at D.F.T. 70 μ m)	Minimum	24 hrs.	12 hrs.	8 hrs.	6 hrs.
	Maximum	-	-	-	-
Pot Life		24 hrs.	20 hrs.	16 hrs.	8 hrs.
Thinner	UNY MARINE THINNER, URETHANE THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 515, 615, 715			
	Paint output pressure	: 14.7 – 23.5 MPa			
	Viscosity	: 30 - 50 sec.(Ford Cup No.4)			
Preferable Preceding Coats	BANNOH Series, UNIVAN HS PRIMER, EPICON MARINE UNDERCOAT M, etc.				
Preferable Subsequent Coats	-				
Packaging	Two pack product				

The information given in this sheet is effective at the date shown above and subject to revision from time to time without notice.

TECHNICAL DATA (at 70 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		120m	80m	60m	40m	35m	30m	25m	20m	15m	10m
Dry to recoat	Min.	48H	32H	24H	12H	10H	8H	7H	6H	5H	4H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		48H	32H	24H	12H	10H	8H	7H	6H	5H	4H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		14H	10H	8H	6H	5H	4H	3H	2H	2H	1.5H
Pot life		36H	30H	24H	20H	18H	16H	12H	8H	7H	5H
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		Non-continuous: 120°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. The performance of hardener decrease reacting with moisture, please handle with care.
2. Using all amount of Hardener once is recommended. If hardener is stored after opening package, please cover completely and store at shadow area(distance from hot or sunlight exposure area).

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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Furthermore, each of the Products described herein is composed of various chemical substances, some of which may contain toxic and/or harmful ingredients and may cause harmful results as a result of misuse or overuse of the Products. For specific causes of risk, conditions of use, harmfulness, etc. of each of the Products, please carefully read, prior to use of the Products, the MSDS (Material Safety Data Sheet) inserted in each of the Products. We will not be liable for any accident that may be caused in violation thereof.

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UNY MARINE HS M

(UM HS M)

PRODUCT DESCRIPTION

UNY MARINE HS M, based on an acrylic polyol and non-yellowing poly isocyanates, is a high-solid type topcoats.

It has the following advantages;

1. Excellent durability while maintaining tough paint film for a long term.
2. Excellent weather resistance(gloss retention)
3. Excellent adhesion to preceding coats.
4. Excellent physical properties such as toughness, impact and abrasion resistance.
5. Excellent resistance to oil and chemicals.
6. Re-coatable

TECHNICAL DATA

Type	Polyurethane finish paint, high build				
Recommended Use	Glossy finish coat on outside of superstructure, deck and fittings.				
Type of binder	Acryl polyol / Isocyanate resin				
Mixing Ratio	Base : Hardener = 88 : 12 (by volume)				
Color	White, As specified				
Flash Point	Base : 15.9 °C, Hardener : 45.9 °C				
Solids by Volume	66% ± 2 (Test Method : ISO-3233)				
VOC	314 g/l (EPA Method24), 381 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	9.43 m ² /l [0.106 l/m ²] at D.F.T 70μm				
Wet Film Thickness	76 - 114 μm				
Dry Film Thickness	50 - 75 μm				
Drying Time (at D.F.T. 70μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	1 Hrs.	40 min	30 min.	20 min.
	Hard Dry	24 hrs.	12 hrs.	8 hrs.	6 hrs.
Painting Interval (at D.F.T. 70μm)	Minimum	24 hrs.	12 hrs.	8 hrs.	6 hrs.
	Maximum	-	-	-	-
Pot Life		24 hrs.	20 hrs.	16 hrs.	8 hrs.
Thinner	UNY MARINE THINNER, URETHANE THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 515, 615, 715			
	Paint output pressure	: 14.7 – 23.5 MPa			
	Viscosity	: 30 - 50 sec.(Ford Cup No.4)			
Preferable Preceding Coats	BANNOH series, UNIVAN HS PRIMER, EPICON MARINE UNDERCOAT M, etc.				
Preferable Subsequent Coats	-				
Packaging	Two pack product				

TECHNICAL DATA (at 70 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		210m	120m	60m	40m	35m	30m	25m	20m	15m	10m
Dry to recoat	Min.	60H	40H	24H	12H	10H	8H	7H	6H	5H	4H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		60H	40H	24H	12H	10H	8H	7H	6H	5H	4H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		20H	13H	8H	6H	5H	4H	3H	2H	2H	1.5H
Pot life		24H	24H	24H	20H	18H	16H	12H	8H	7H	5H
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		Non-continuous: 120°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. The performance of hardener decrease reacting with moisture, please handle with care.
2. Using all amount of Hardener once is recommended. If hardener is stored after opening package, please cover completely and store at shadow area(distance from hot or sunlight exposure area).

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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EPICON A-100 PRIMER

(EP A 100)

PRODUCT DESCRIPTION

EPICON A-100 PRIMER, based on a combination of epoxy resin, curing agent and selected pigments has excellent adhesion property on aluminum and aluminum alloy, and has excellent water resistance.

PRODUCT INFORMATION

Type	Epoxy primer				
Recommended Use	Primer for aluminum and aluminum alloy				
Type of binder	Epoxy resin				
Mixing Ratio	Base : Hardener = 71 : 29 (by volume)				
Color	Pale white				
Flash Point	Base : 23.0 °C, Hardener : 27.5 °C				
Solids by Volume	47% ± 2 (Test Method : ISO-3233)				
VOC	496 g/l (EPA Method24), 516 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	15.67 m ² /l [0.063 l/m ²] at D.F.T 30μm				
Wet Film Thickness	53 – 74 μm				
Dry Film Thickness	25 – 35 μm				
Drying Time (at D.F.T. 30μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	1 hr.	45 min.	30 min.	20 min.
	Hard Dry	12 hrs.	8 hrs.	6 hrs.	4 hrs.
Painting Interval (at D.F.T. 30μm)	Minimum	16 hrs.	12 hrs.	8 hrs.	6 hrs.
	Maximum	7 days	7 days	7 days	7 days
Pot Life		24 hrs.	20 hrs.	18 hrs.	12 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 5 °C			
	Humidity	: Maximum 85 % R. H.			
	For Airless spray ;				
	Tip No.	: GRACO 413, 517			
	Paint output pressure	: 6.9 – 10.3 MPa			
	Viscosity	: 20 - 50 sec.(Ford Cup No.4)			
Preferable Preceding Coats	-				
Preferable Subsequent Coats	Various paint (except inorganic type paint and polyurethane type paint)				
Packaging	Two pack product				

TECHNICAL DATA (at 30 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	-	60m	45m	40m	30m	25m	20m	15m	10m
Dry to recoat	Min.	-	-	16H	12H	10H	8H	7H	6H	5H	5H
	Max.	-	-	7D	7D	7D	7D	7D	7D	7D	7D
Dry to hard		-	-	12H	8H	8H	6H	5H	4H	3H	2H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	-	16H	12H	10H	8H	7H	6H	5H	5H
Pot life		-	-	24H	20H	18H	18H	16H	12H	10H	8H
Shelf life (M)		-	-	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		150°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- BANNOH series is considered as undercoat for polyurethane coating.
Please consult with CSP sales office.
- In common with all epoxy coatings, EPICON A-100 PRIMER will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry.
Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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EPICON S-100 PRIMER

(EP S 100)

PRODUCT DESCRIPTION

EPICON S-100 PRIMER is a two pack epoxy primer for stainless steel, based on a combination of epoxy resin, curing agent and selected pigments.

It has excellent adhesion on stainless steel and excellent water resistance.

PRODUCT INFORMATION

Type	Epoxy primer				
Recommended Use	Primer for stainless steel, and aluminum				
Type of binder	Epoxy resin				
Mixing Ratio	Base : Hardener = 87 : 13 (by volume)				
Color	Red brown				
Flash Point	Base : 16.5 °C, Hardener : 19.5 °C				
Solids by Volume	29% ± 2 (Test Method : ISO-3233)				
VOC	597 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	9.67 m ² /l [0.103 l/m ²] at D.F.T 30 μ m				
Wet Film Thickness	86 – 121 μ m				
Dry Film Thickness	25 – 35 μ m				
Drying Time (at D.F.T. 30 μ m)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	10 min.	8 min.	5 min.	4 min.
	Hard Dry	12 hrs.	9 hrs.	6 hrs.	4 hrs.
Painting Interval (at D.F.T. 30 μ m)	Minimum	16 hrs.	12 hrs.	8 hrs.	6 hrs.
	Maximum	7 days	7 days	7 days	7 days
Pot Life		36 hrs.	30 hrs.	24 hrs.	16 hrs.
Thinner	EPICON THINNER, EPOXY THINNER G				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 5 °C			
	Humidity	: Maximum 85 % R. H.			
	For Airless spray ;				
	Tip No.	: GRACO 413, 517			
	Paint output pressure	: 6.8 – 10.3 MPa			
Viscosity	: 20 - 24 sec.(Ford Cup No.4)				
Preferable Preceding Coats	-				
Preferable Subsequent Coats	Various paint (except inorganic type paint and polyurethane type paint)				
Packaging	Two pack product				

TECHNICAL DATA (at 30 μ m)

Item		Temp (°C)	-5	0	5	10	15	20	25	30	35	40
Set to touch			-	-	10m	8m	6m	5m	4.5m	4m	3m	2m
Dry to recoat	Min.		-	-	16H	12H	10H	8H	7H	6H	5H	4H
	Max.		-	-	7D	7D	7D	7D	7D	7D	6D	6D
Dry to hard			-	-	12H	9H	7H	6H	5H	4H	3H	2H
Dry to immerse	Body		-	-	-	-	-	-	-	-	-	-
	Touch-up		-	-	-	-	-	-	-	-	-	-
Dry to Touch-up			-	-	16H	12H	10H	8H	7H	6H	5H	4H
Pot life			-	-	36H	30H	27H	24H	20H	16H	12H	8H
Shelf life (M)			-	-	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance			150°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- BANNOH series is considered as undercoat for polyurethane coating.
Please consult with CSP sales office.
- In common with all epoxy coatings, EPICON S-100 PRIMER will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry.
Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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EPICON B-100 PRIMER

(EP B 100)

PRODUCT DESCRIPTION

EPICON B-100 PRIMER is a two pack epoxy primer for brass surface, based on a combination of epoxy resin, curing agent and selected pigments.

It has excellent adhesion on brass surface and excellent water resistance.

PRODUCT INFORMATION

Type	Epoxy primer for brass				
Recommended Use	For propeller of ocean-going vessels				
Type of binder	Epoxy resin				
Mixing Ratio	Base : Hardener = 79 : 21 (by volume)				
Color	Yellow				
Flash Point	Base : 19.5℃, Hardener : 19.3℃				
Solids by Volume	46% ± 2 (Test Method : ISO-3233)				
VOC	406 g/l (EPA Method 24), 465 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	6.58 m ² /l [0.152 l/m ²] at D.F.T 70μm				
Wet Film Thickness	152 μm				
Dry Film Thickness	70 μm				
Drying Time (at D.F.T. 70μm)	Temperature	5℃	10℃	20℃	30℃
	Surface Dry	1.5 Hrs.	60 min.	30 min.	20 min.
	Hard Dry	8 hrs.	6 hrs.	3 hrs.	2 hrs.
Painting Interval (at D.F.T. 70μm)	Minimum	8 hrs.	6 hrs.	3 hrs.	2 hrs.
	Maximum	7 days	7 days	5 days	3 days
Pot Life		70 min.	60 min.	45 min.	30 min.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 0℃			
	Humidity	: Maximum 85% R. H.			
	For Airless spray ;				
	Tip No.	: GRACO 519 - 621			
	Paint output pressure	: 6.9 – 10.3 MPa			
	Viscosity	: 60 - 120 sec.(Ford Cup No.4)			
Preferable Preceding Coats	-				
Preferable Subsequent Coats	CMP BIOCLEAR SG-R				
Packaging	Two pack product				

TECHNICAL DATA (at 70 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	2H	1.5H	60m	45m	30m	25m	20m	-	-
Dry to recoat	Min.	-	12H	8H	6H	4.5H	3H	2.5H	2H	-	-
	Max.	-	7D	7D	7D	7D	5D	5D	3D	-	-
Dry to hard		-	12H	8H	6H	4.5H	3H	2.5H	2H	-	-
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	12H	8H	6H	4.5H	3H	2.5H	2H	-	-
Pot life		-	70m	70m	60m	50m	45m	35m	30m	-	-
Shelf life (M)		-	12M	12M	12M	12M	12M	12M	12M	-	-
Max. heat resistance		-									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. Since it has short pot life, please mix just required and use it immediately.
2. In common with all epoxy coatings, EPICON B-100 PRIMER will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SEAFLO NEO SL Z

(SFL N SL Z)

PRODUCT DESCRIPTION

SEAFLO NEO SL Z is a high-performance hydrolysis antifouling based on a special silyl methacrylate polymer providing long-term antifouling protection, ultra low friction and reduced fuel consumption. SEAFLO NEO SL Z has a higher solids percentage than standard hydrolysis paints.

PRODUCT INFORMATION

Type	Ultra low friction, special silyl methacrylate polymer type hydrolysis antifouling paint				
Recommended Use	Antifouling paint for underwater hulls of steel ships with extended dry-docking intervals.				
Type of binder	Special silyl methacrylate polymer				
Color	Brown H, Light Brown H				
Flash Point	23.2 °C				
Solids by Volume	56% ± 2 (Test Method : ISO-3233)				
VOC	402 g/l (EPA Method24), 438 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.60 m ² /l [0.179 l/m ²] at D.F.T 100μm				
Wet Film Thickness	134 – 295 μm				
Dry Film Thickness	75 – 165 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100μm)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619 ~ 723			
	Paint output pressure	: 11.7 – 14.7 MPa			
	Viscosity	: 1.5 - 2.5 Pa·s			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		8H	5H	3H	2H	1.5H	1H	1H	30m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4H	4H	3H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SEAFLO NEO SL

(SFL N SL)

PRODUCT DESCRIPTION

SEAFLO NEO SL is a high-performance hydrolysis antifouling based on a special and advanced silyl polymer providing long-term antifouling protection, low friction and reduced fuel consumption.

SEAFLO NEO SL has a higher solids percentage than standard hydrolysis paints.

PRODUCT INFORMATION

Type	Ultra low friction, special and advanced silyl polymer type hydrolysis antifouling paint.				
Recommended Use	Antifouling paint for underwater hulls of steel ships with extended dry-docking interval.				
Type of binder	Advanced Silyl Polymer				
Color	Brown H, Light Brown H				
Flash Point	23.2 °C				
Solids by Volume	56% ± 2 (Test Method : ISO-3233)				
VOC	408 g/l (Theoretical), 427 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.60 m ² /l [0.179 l/m ²] at D.F.T 100μm				
Wet Film Thickness	89 – 295 μm				
Dry Film Thickness	50 – 165 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100μm)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 723			
	Paint output pressure	: 11.7 – 14.7 MPa			
	Viscosity	: 1.5 – 2.5 Pa·s			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item	Temp (°C)	-5	0	5	10	15	20	25	30	35	40
	Set to touch		8H	5H	3H	2H	1.5H	1H	1H	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4H	4H	3H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance	60°C (Non-continuous)										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SEA GRANDPRIX 1000 L

(SGP 1000 L)

PRODUCT DESCRIPTION

SEA GRANDPRIX 1000 L is a tin free self polishing antifouling paint based on the silyl polymer technology with highly hydrolysis activity.

Excellent antifouling effect is derived from the highly active polymer which ensures maximum effectiveness and leaching of the biocides.

Activation at the surface is maintained by control of hydrolysis thus providing long term antifouling protection commensurate with applied film thickness.

PRODUCT INFORMATION

Type	Tin free self polishing antifouling paint				
Recommended Use	Antifouling paint on steel ship's bottom for world wide service with extended dry-docking interval.				
Type of binder	Special synthetic resin				
Color	Brown H, Light Brown H				
Flash Point	23.2 °C				
Solids by Volume	56% ± 2 (Test Method : ISO-3233)				
VOC	408 g/l (EPA Method24), 438 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.60 m ² /l [0.179 l/m ²] at D.F.T 100μm				
Wet Film Thickness	89 – 295 μm				
Dry Film Thickness	50 – 165 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100μm)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum -5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 723			
	Paint output pressure	: 11.7 – 14.7 MPa			
	Viscosity	: 1.5 - 2.5 Pa·s			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item	Temp (°C)	-5	0	5	10	15	20	25	30	35	40
		Set to touch		8H	5H	3H	2H	1.5H	1H	45m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4H	4H	3.5H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4H	4H	3.5H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4H	4H	3.5H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SEAFLO NEO CF Z

(SFL N CF Z)

PRODUCT DESCRIPTION

SEAFLO NEO CF Z a high performance antifouling incorporating a new biocide technology with a synthetic agent combined with zinc acrylate polymer. This antifouling has been designed as a premium solution for vessels trading at a wide range of speed and activity, where the main focuses are long term hull performance, reducing hull resistance and fuel saving by maintaining an optimum leached layer.

PRODUCT INFORMATION

Type	Ultra low friction, low FIR, TBT free, cuprous oxide free hydrolysis antifouling				
Recommended Use	Antifouling paint for the underwater hulls of high-activity vessels such as container ships and VLCCs operating in tropical trades.				
Type of binder	Zinc acrylate polymer				
Color	Red, Light Red				
Flash Point	24.5 °C				
Solids by Volume	50% ± 2 (Test Method : ISO-3233)				
VOC	403 g/l(EPA Method24), 446 g/l(Korean Clean Air Conservation Act)				
Coverage(Theoretical)	5.00 m ² /l [0.200 l/m ²] at D.F.T 100μm				
Wet Film Thickness	150 – 330 μm				
Dry Film Thickness	75 – 165 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100μm)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619 ~ 723			
	Paint output pressure	: 11.7 – 14.7 MPa			
	Viscosity	: 1.5 - 2.5 Pa·s			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item	Temp (°C)	-5	0	5	10	15	20	25	30	35	40
		Set to touch		6H	4H	3H	2H	1.5H	1H	1H	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4H	4H	3H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Self life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance	60°C (Non-continuous)										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation such as whitening can be expected after immersion and climatic exposure, although this phenomenon does not affect the anti-fouling performance.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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MARINE STAR A

(MS A)

PRODUCT DESCRIPTION

MARINE STAR A is a tin free erodible antifouling paint with self-polishing action in service and good protection against marine organisms.

The specific vehicle composition provides a unique hydration mechanism during operation, resulting excellent antifouling performance.

PRODUCT INFORMATION

Type	Anti-fouling paint				
Recommended Use	Anti-fouling paint on aluminum ship's bottom				
Type of binder	Special synthetic resin				
Color	White, As specified				
Flash Point	22 °C				
Solids by Volume	55% ± 2 (Test Method : ISO-3233)				
VOC	450 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.49 m ² /l [0.182 l/m ²] at D.F.T 100μm				
Wet Film Thickness	182 μm				
Dry Film Thickness	100 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3 hrs.	2 hrs.	1 hrs.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to launch (at D.F.T. 100μm)	Minimum	24 hrs.	18 hrs.	12 hrs.	10 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619, 625			
	Paint output pressure	: 11.7 – 14.7 MPa			
Viscosity	: 90 sec.(Ford Cup No.4)				
Preferable Preceding Coats	SILVAX SQ-K, SEA GRANDPRIX Series, SEAFLO NEO Series, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		8H	6H	3H	2hr	1.5H	1H	45m	30m	30m	30m
Dry to recoat	Min.	24H	18H	12H	8H	6.5H	5H	4.5H	4H	3.5H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		24H	18H	12H	8H	6.5H	5H	4.5H	4H	3.5H	3H
Dry to immerse	Body	48H	36H	24H	18H	15H	12H	11H	10H	9H	8H
	Touch-up	48H	36H	24H	18H	15H	12H	11H	10H	9H	8H
Dry to Touch-up		24H	18H	12H	8H	6.5H	5H	4.5H	4H	3.5H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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SEA GRANDPRIX 880 HS

(SGP 880 HS)

PRODUCT DESCRIPTION

SEA GRANDPRIX 880 HS is hydrolysing self-polishing tin free antifouling paint designed to protect hulls for up to 90months and to provide protection during extended static periods.

PRODUCT INFORMATION

Type	Hydrolysing self-polishing tin free antifouling paint				
Recommended Use	For antifouling protection up to 90months between dry-docking for underwater hulls of ocean going vessels.				
Type of binder	Special synthetic resin				
Color	Brown, Light Brown				
Flash Point	23.0 °C				
Solids by Volume	65% ± 2 (Test Method : ISO-3233)				
VOC	348 g/l (Method24), 386 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	6.50 m ² /l [0.154 l/m ²] at D.F.T 100μm				
Wet Film Thickness	115 – 254 μm				
Dry Film Thickness	75 – 165 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100μm)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum -5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 735			
	Paint output pressure	: 11.7 - 14.7 MPa			
	Viscosity	: 90 sec. (Ford Cup #4)			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		8H	5H	3H	2H	1.5H	1H	45m	30m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SEA GRANDPRIX 880 HS PLUS

(SGP 880 HS PL)

PRODUCT DESCRIPTION

SEA GRANDPRIX 880 HS PLUS is hydrolysing self-polishing tin free antifouling paint incorporating a new biocide technology with a special synthetic agent developed in a pharmacological mode of action. This antifouling has been designed to provide protection during extended static periods.

PRODUCT INFORMATION

Type	Hydrolysing self-polishing tin free antifouling paint				
Recommended Use	For antifouling protection up to 90months between dry-docking for underwater hulls of ocean going vessels.				
Type of binder	Special synthetic resin				
Color	Brown, Light Brown				
Flash Point	23.1 °C				
Solids by Volume	65% ± 2 (Test Method : ISO-3233)				
VOC	338 g/l (EPA Method24), 376 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	6.50 m ² /l [0.154 l/m ²] at D.F.T 100μm				
Wet Film Thickness	115 – 254 μm				
Dry Film Thickness	75 – 165 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100μm)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum -5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 735			
	Paint output pressure	: 11.7 - 14.7 MPa			
	Viscosity	: 90 sec. (Ford Cup #4)			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item	Temp (°C)	-5	0	5	10	15	20	25	30	35	40
		Set to touch		8H	5H	3H	2H	1.5H	1H	45m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
2. For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
3. Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SEA GRANDPRIX 660 HS

(SGP 660 HS)

PRODUCT DESCRIPTION

SEA GRANDPRIX 660 HS is a tin free antifouling paint based on advanced fusion technology with hydrolysis compound and unique release controller. The specific vehicle composition provides long protection against marine organisms.

PRODUCT INFORMATION

Type	Advanced fusion type self polishing antifouling paint				
Recommended Use	Antifouling paint for underwater hull of steel ships in worldwide service and with extended dry-docking interval				
Type of binder	Special synthetic resin				
Color	Brown R, Light Brown R, As specified*)				
Flash Point	23.0 °C				
Solids by Volume	65% ± 2 (Test Method : ISO-3233)				
VOC	348 g/l (EPA Method24), 421 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	6.50 m ² /l [0.154 l/m ²] at D.F.T 100μm				
Wet Film Thickness	115 – 254 μm				
Dry Film Thickness	75 – 165 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100μm)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum -5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 735			
	Paint output pressure	: 11.7 - 14.7 MPa			
	Viscosity	: 90 sec. (Ford Cup #4)			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

*) if you want other color, kindly consult CSP sales office.

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		8H	5H	3H	2H	1.5H	1H	45m	30m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SEA GRANDPRIX 770 HS

(SGP 770 HS)

PRODUCT DESCRIPTION

SEA GRANDPRIX 770 HS is a tin free antifouling paint based on advanced fusion technology with hydrolysis compound and a unique release controller. The specific vehicle composition provides long protection against marine organisms.

PRODUCT INFORMATION

Type	Advanced fusion type self-polishing antifouling paint				
Recommended Use	For Antifouling paint for underwater hull of ocean going vessels. Primarily designed for maintenance and repair.				
Type of binder	Special synthetic resin				
Color	Brown, Light Brown				
Flash Point	23.0 °C				
Solids by Volume	67% ± 2 (Test Method : ISO-3233)				
VOC	324 g/l (EPA Method24), 364 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	6.70 m ² /l [0.149 l/m ²] at D.F.T 100μm				
Wet Film Thickness	112 – 224 μm				
Dry Film Thickness	75 – 150 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100μm)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum -5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 735			
	Paint output pressure	: 11.7 - 14.7 MPa			
	Viscosity	: 90 sec. (Ford Cup #4)			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		8H	5H	3H	2H	1.5H	1H	45m	30m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SEAFLO NEO M1 PLUS

(SFL N M1 PL)

PRODUCT DESCRIPTION

SEAFLO NEO M1 PLUS is a high-performance hydrolysis antifouling utilizing incorporated new biocide technology with a special synthetic agent developed in a pharmacological mode of action.

It has been designed to provide long-term antifouling protection, ultra low friction, low VOC and reduced fuel consumption.

PRODUCT INFORMATION

Type	Ultra low friction, low VOC special hydrolysis type antifouling				
Recommended Use	Antifouling for underwater hulls of steel ships for world wide service with extended dry-docking intervals				
Type of binder	Special synthetic resin				
Color	Brown, Light Brown				
Flash Point	23.9 °C				
Solids by Volume	65% ± 2 (Test Method : ISO-3233)				
VOC	321 g/l(Method24), 370 g/l(Korean Clean Air Conservation Act)				
Coverage(Theoretical)	6.5 m ² /l [0.154 l/m ²] at D.F.T 100μm				
Wet Film Thickness	115 – 246 μm				
Dry Film Thickness	75 – 160 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100μm)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum -5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 735			
	Paint output pressure	: 11.7 - 14.7 MPa			
Viscosity	: 90 sec. (Ford Cup #4)				
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		8H	5H	3H	2H	1.5H	1H	45m	30m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
2. Fouling may occur depending on the trading condition, anchorage period or anchorage place. Please contact your local CMP office for further information.
3. Fading and discoloration are expected after immersion and/or exposure under the sunlight, however this does not affect the performance.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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We do not guarantee the performance or safety of the Products when used for a purpose or use other than what is described herein. Nor will we be liable for any explanation or guarantee provided by any distributor or sales agent with respect to the Products, other than what is described in this Data Sheet.

Furthermore, each of the Products described herein is composed of various chemical substances, some of which may contain toxic and/or harmful ingredients and may cause harmful results as a result of misuse or overuse of the Products. For specific causes of risk, conditions of use, harmfulness, etc. of each of the Products, please carefully read, prior to use of the Products, the MSDS (Material Safety Data Sheet) inserted in each of the Products. We will not be liable for any accident that may be caused in violation thereof.

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SEA GRANDPRIX 330 HS

(SGP 330 HS)

PRODUCT DESCRIPTION

SEA GRANDPRIX 330 HS is a tin free antifouling paint based on hydrolysis compound. Advanced fusion technology with a unique release controller which are utilized for SEA GRANDPRIX 330 HS provides long-lasting protection against marine organism.

PRODUCT INFORMATION

Type	Advanced fusion type self-polishing antifouling paint				
Recommended Use	For Antifouling paint for underwater hull of ocean going vessels. Primarily designed for maintenance and repair.				
Type of binder	Special synthetic resin				
Color	Brown, Light Brown				
Flash Point	23.0 °C				
Solids by Volume	67% ± 2 (Test Method : ISO-3233)				
VOC	324 g/l (EPA Method24), 364 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	6.70 m ² /l [0.149 l/m ²] at D.F.T 100μm				
Wet Film Thickness	112 – 246 μm				
Dry Film Thickness	75 – 165 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100μm)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum -5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 735			
	Paint output pressure	: 11.7 - 14.7 MPa			
	Viscosity	: 90 sec. (Ford Cup #4)			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		8H	5H	3H	2H	1.5H	1H	45m	30m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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NURI AF[®]

(NURI AF)

PRODUCT DESCRIPTION

NURI AF[®] is a tin free antifouling paint with self polishing action in service and long protection against marine organisms. The specific vehicle composition provides an advanced fusion technology during operation, resulting in long lasting antifouling performance.

PRODUCT INFORMATION

Type	Fusion self polishing antifouling paint				
Recommended Use	Antifouling paint for fishing boat				
Type of binder	Special synthetic resin				
Color	Brown, as specified*)				
Flash Point	23.9 °C				
Solids by Volume	55% ± 2 (Test Method : ISO-3233)				
VOC	416 g/l (EPA Method24), 437 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.5 m ² /l [0.182 l/m ²] at D.F.T 100 μ m				
Wet Film Thickness	136 – 273 μ m				
Dry Film Thickness	75 – 150 μ m				
Drying Time (at D.F.T. 100 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100 μ m)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100 μ m)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum -5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 735			
	Paint output pressure	: 11.7 - 14.7 Mpa			
Viscosity	: 90 sec. (Ford Cup #4)				
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

*) if you want other color, kindly consult CSP sales office.

TECHNICAL DATA (at 100 μ m)

Item	Temp (°C)	-5	0	5	10	15	20	25	30	35	40
	Set to touch		8H	5H	3H	2H	1.5H	1H	45m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance	60°C (Non-continuous)										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SEA GRANDPRIX 900 L

(SGP 900 L)

PRODUCT DESCRIPTION

SEA GRANDPRIX 900 L is a silyl type hydrolysis self-polishing antifouling.

Activation at the surface is maintained by controlled hydrolysis reaction which provides long-term antifouling protection.

PRODUCT INFORMATION

Type	Silyl polymer type hydrolysis antifouling paint				
Recommended Use	For antifouling protection for underwater hulls of ocean going vessel				
Type of binder	Silyl polymer				
Color	Brown, Light Brown				
Flash Point	23.0 °C				
Solids by Volume	65% ± 2 (Test Method : ISO-3233)				
VOC	331 g/l (EPA Method24), 390 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	6.50 m ² /l [0.154 l/m ²] at D.F.T 100 μ m				
Wet Film Thickness	115 – 254 μ m				
Dry Film Thickness	75 – 165 μ m				
Drying Time (at D.F.T. 100 μ m)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100 μ m)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100 μ m)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum	-5 °C		
	Humidity	: Maximum	85 % R.H.		
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 735			
	Paint output pressure	: 11.7 - 14.7 MPa			
	Viscosity	: 90 sec. (Ford Cup #4)			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		8H	5H	3H	2H	1.5H	1H	45m	30m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SEA GRANDPRIX 950 L

(SGP 950 L)

PRODUCT DESCRIPTION

SEA GRANDPRIX 950 L is a hydrolysis self-polishing antifouling based on an advanced silyl polymer with straight line polishing.

Excellent antifouling performance is obtained by the controlled active zone which reacts with sea water.

It provides long-term antifouling protection up to 90 months for worldwide trading ships.

PRODUCT INFORMATION

Type	Advanced silyl polymer type hydrolysis antifouling				
Recommended Use	Antifouling for underwater hulls of steel, especially designed by ocean-going vessels				
Type of binder	Advanced silyl polymer				
Color	Brown, Light Brown				
Flash Point	23.8 °C				
Solids by Volume	61% ± 2 (Test Method : ISO-3233)				
VOC	378 g/l (Method24), 422 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	6.10 m ² /l [0.164 l/m ²] at D.F.T 100 μ m				
Wet Film Thickness	123 – 270 μ m				
Dry Film Thickness	75 – 165 μ m				
Drying Time (at D.F.T. 100 μ m)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100 μ m)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100 μ m)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum -5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 723			
	Paint output pressure	: 11.7 - 14.7 MPa			
	Viscosity	: 90 sec. (Ford Cup #4)			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		8H	5H	3H	2H	1.5H	1H	45m	30m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Dry to immerse*)	Body coating	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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Furthermore, each of the Products described herein is composed of various chemical substances, some of which may contain toxic and/or harmful ingredients and may cause harmful results as a result of misuse or overuse of the Products. For specific causes of risk, conditions of use, harmfulness, etc. of each of the Products, please carefully read, prior to use of the Products, the MSDS (Material Safety Data Sheet) inserted in each of the Products. We will not be liable for any accident that may be caused in violation thereof.

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SEAFLO NEO SL M

(SFL N SL M)

PRODUCT DESCRIPTION

SEAFLO NEO SL M is a high performance, high solid, ultra low friction hydrolysis type antifouling, based on silyl methacrylate polymer, combined with unique self-leveling technology.

Providing excellent physical properties, outstanding long-term fouling protection up to 90 months and sustainable low frictional resistance, impressive fuel savings are delivered throughout the service period.

PRODUCT INFORMATION

Type	Ultra low friction, silyl methacrylate hydrolysis antifouling				
Recommended Use	Antifouling for underwater hulls of steel ship, especially designed by ocean-going vessels				
Type of binder	Silyl methacrylate polymer				
Color	Brown, Light Brown				
Flash Point	23.8 °C				
Solids by Volume	60% ± 2 (Test Method : ISO-3233)				
VOC	374 g/l (Method24), 418 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	6.0 m ² /l [0.167 l/m ²] at D.F.T 100 μ m				
Wet Film Thickness	125 – 275 μ m				
Dry Film Thickness	75 – 165 μ m				
Drying Time (at D.F.T. 100 μ m)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100 μ m)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100 μ m)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum -5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 723			
	Paint output pressure	: 11.7 - 14.7 MPa			
	Viscosity	: 90 sec. (Ford Cup #4)			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		8H	5H	3H	2H	1.5H	1H	45m	30m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Dry to immerse*)	Body coating	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SEA GRANDPRIX 2000 A

(SGP 2000 A)

PRODUCT DESCRIPTION

SEA GRANDPRIX 2000 A is a high-performance hydrolysis antifouling based on a silyl polymer providing long-term antifouling protection and excellent static anti-fouling performance.

Excellent antifouling performance is derived from the high active polymer which ensures maximum effectiveness by stable biocide leaching.

Activation at the surface is maintained by controlled hydrolysis reaction providing long-term antifouling protection commensurate with applied film thickness.

PRODUCT INFORMATION

Type	Silyl polymer type hydrolysis antifouling paint				
Recommended Use	Antifouling paint for the underwater hulls of steel ships in coasted service				
Type of binder	Silyl polymer				
Color	Red R, Light Brown R, As specified				
Flash Point	23.2 °C				
Solids by Volume	55% ± 2 (Test Method : ISO-3233)				
VOC	423 g/l (Method24), 441 g/l (Korea Air Conservation Act)				
Coverage(Theoretical)	5.49 m ² /l [0.182 l/m ²] at D.F.T 100 μ m				
Wet Film Thickness	73 – 273 μ m				
Dry Film Thickness	40 – 150 μ m				
Drying Time (at D.F.T. 100 μ m)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100 μ m)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100 μ m)	Minimum	24 hrs.	18 hrs.	12 hrs.	10 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum -5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 723			
	Paint output pressure	: 11.7 - 14.7 MPa			
	Viscosity	: 90 sec. (Ford Cup #4)			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		6H	4H	3H	2H	1.5H	1H	45m	30m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3.5H	3H
Dry to immerse*)	Body	48H	36H	24H	18H	15H	12H	11H	10H	9H	8H
	Touch-up	39H	29H	20H	15H	12H	10H	9H	8H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4H	4H	3H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SEAFLO NEO-S PREMIUM

(SFL N-S PRM)

PRODUCT DESCRIPTION

SEAFLO NEO-S PREMIUM is a outstanding high-performance hydrolysis antifouling based on a high polishing silyl polymer and new biocide technology which provides supreme anti-barnacle property.

PRODUCT INFORMATION

Type	Ultra low friction. Silyl polymer type hydrolysis antifouling paint				
Recommended Use	Antifouling for very high risk area of barnacle fouling, or additional antifouling for fitting period at new building.				
Type of binder	Advanced Silyl Polymer				
Color	Brown D				
Flash Point	26.1 °C				
Solids by Volume	51% ± 2 (Test Method : ISO-3233)				
VOC	426 g/l (EPA Method24), 441 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.10 m ² /l [0.196 l/m ²] at D.F.T 100μm				
Wet Film Thickness	78 – 196 μm				
Dry Film Thickness	40 – 100 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100μm)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 617 ~ 723			
	Paint output pressure	: 11.7 – 14.7 MPa			
	Viscosity	: 1.5 - 2.5 Pa·s			
Preferable Preceding Coats	SEAFLO NEO Series, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		6H	4H	3H	2H	1.5H	1H	1H	30m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4H	4H	3H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

Shelf Life(M) : 3 months

Shelf life may be shorter than the standard depending on the storage condition(temperature, humidity, etc.)

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SEAFLO NEO CF PREMIUM

(SFL N CF P)

PRODUCT DESCRIPTION

SEAFLO NEO CF PREMIUM is a hydrolysis self- polishing antifouling incorporating a new biocide technology with a special synthetic agent developed in a pharmacological of action combined with a zinc acrylate polymer. This antifouling has been designed as a premium solution for vessels trading at a wide range of speed and activity, where the main focuses are long term hull performance, reducing hull resistance & fuel saving by maintaining an optimum leached layer.

PRODUCT INFORMATION

Type	Low fiction, low FIR, TBT free, cuprous oxide free hydrolysis antifouling				
Recommended Use	Antifouling paint for the underwater hulls of steel ships for world-wide service and with extended dry-docking interval.				
Type of binder	Zinc acrylate polymer				
Color	Red, Light red, As specified				
Flash Point	24.5 °C				
Solids by Volume	50% ± 2 (Test Method : ISO-3233)				
VOC	428 g/l (EPA Method24), 441 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.00 m ² /l [0.200 l/m ²] at D.F.T 100 μ m				
Wet Film Thickness	150 – 330 μ m				
Dry Film Thickness	75 – 165 μ m				
Drying Time (at D.F.T. 100 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100 μ m)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100 μ m)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 735			
	Paint output pressure	: 11.7 – 14.7 MPa			
Viscosity	: 1.5 - 2.5 Pa·s				
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		6H	4H	3H	2H	1.5H	1H	1H	30m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3H	3H
Dry to immerse*)	Body coating	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4H	4H	3H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Self life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
2. For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
3. Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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BIOCLEAN ECO

(BCL ECO)

PRODUCT DESCRIPTION

BIOCLEAN ECO is an innocuous long life foul-release coating designed to prevent the attachment of marine organisms by providing low critical surface tension.

It has the following advantages;

1. Environmental friendly, safe and hygienic
2. High volume solid, low VOC. (51g/Ltr = 0.43lb/gal)
3. No heavy metals and toxic ingredients
4. Long service life with excellent foul-release properties
5. Easy application & High build type

PRODUCT INFORMATION

Type	Special synthetic resin foul-release coating with an outstanding long term durability				
Recommended Use	Offshore, underwater structures, sea water facilities in electric power station (water intake, screens, valves, etc.)				
Type of binder	Special synthetic Silicon elastomer				
Color	Clear				
Flash Point	26.5 °C				
Solids by Volume	94% ± 2 (Test Method : ISO-3233)				
VOC	51 g/L (Korea Air Conservation Act)				
Coverage(Theoretical)	6.27 m ² /ℓ [0.159 ℓ/m ²] at D.F.T 150 μm				
Wet Film Thickness	160 μm				
Dry Film Thickness	150 μm				
Drying Time (at D.F.T. 150 μm)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	50 mins.	40 mins.	30 mins.	20 mins.
	Hard Dry	8 hrs.	6 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 150 μm)	Minimum	8 hrs.	6 hrs.	5 hrs.	4 hrs.
	Maximum	5 days	5 days	5 days	5 days
Pot Life	-	-	-	-	-
Dry to launch	Minimum	1 day	1 day	1 day	1 day
Thinner	SILICON THINNER				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 0 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619 - 719			
	Paint output pressure	: 17.7 - 20.6 MPa			
	Viscosity	: 10 – 15 Pa.s			
Preferable Preceding Coats	ECOMAX Bi, BIOCLEAN SEALER ECO				
Packaging	One pack product				

TECHNICAL DATA (at 150 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	60m	50m	40m	35m	30m	25m	20m	15m	15m
Dry to recoat	Min.	-	12H	8H	6H	6H	5H	4.5H	4H	3H	3H
	Max.	-	5D	5D	5D	5D	5D	5D	5D	5D	5D
Dry to hard		-	12H	8H	6H	6H	5H	4.5H	4H	3H	3H
Dry to immerse	Body	-	1D	1D	1D	1D	1D	1D	1D	1D	1D
	Touch-up	-	1D	1D	1D	1D	1D	1D	1D	1D	1D
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		-	6M	6M	6M	6M	6M	6M	6M	6M	6M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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BIOCLEAN ECO COLOUR

(BCL ECO C)

PRODUCT DESCRIPTION

BIOCLEAN ECO COLOUR is an innocuous long life foul-release coating designed to prevent the attachment of marine organisms by providing low critical surface tension.

It has the following advantages;

1. Environmental friendly, safe and hygienic
2. High volume solid
3. No heavy metals and toxic ingredients
4. Long service life with excellent foul-release properties
5. Easy application

PRODUCT INFORMATION

Type	Special synthetic resin foul-release coating with an outstanding long term durability				
Recommended Use	Offshore, underwater structures, sea water facilities in electric power station (water intake, screens, valves, etc.)				
Type of binder	Special synthetic Silicon elastomer				
Color	Light Grey				
Flash Point	35.8 °C				
Solids by Volume	80% ± 2 (Test Method : ISO-3233)				
VOC	177 g/L (Korea Air Conservation Act)				
Coverage(Theoretical)	5.3 m ² /ℓ [0.187 ℓ/m ²] at D.F.T 150 μm				
Wet Film Thickness	94 – 160 μm				
Dry Film Thickness	75 – 150 μm				
Drying Time (at D.F.T. 150 μm)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	50 mins.	40 mins.	30 mins.	20 mins.
	Hard Dry	8 hrs.	6 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 150 μm)	Minimum	8 hrs.	6 hrs.	5 hrs.	4 hrs.
	Maximum	5 days	5 days	5 days	5 days
Pot Life	-	-	-	-	-
Dry to launch	Minimum	1 day	1 day	1 day	1 day
Thinner	SILICON THINNER				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 0 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619 - 719			
	Paint output pressure	: 17.7 - 20.6 MPa			
Viscosity	: 10 – 15 Pa.s				
Preferable Preceding Coats	ECOMAX Bi, BIOCLEAN SEALER ECO				
Packaging	One pack product				

TECHNICAL DATA (at 150 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	60m	50m	40m	35m	30m	25m	20m	15m	15m
Dry to recoat	Min.	-	12H	8H	6H	6H	5H	4.5H	4H	3H	3H
	Max.	-	5D	5D	5D	5D	5D	5D	5D	5D	5D
Dry to hard		-	12H	8H	6H	6H	5H	4.5H	4H	3H	3H
Dry to immerse	Body	-	1D	1D	1D	1D	1D	1D	1D	1D	1D
	Touch-up	-	1D	1D	1D	1D	1D	1D	1D	1D	1D
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		-	6M	6M	6M	6M	6M	6M	6M	6M	6M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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CMP BIOCLEAN PLUS

(CMP BCL PLUS)

PRODUCT DESCRIPTION

CMP BIOCLEAN PLUS is a three-pack silicone elastomer foul release coating.

PRODUCT INFORMATION

Type	Silicone elastomer foul release paint				
Recommended Use	As a finish coat in the CMP BIOCLEAN PLUS foul release system. Especially designed for ocean going liners and fast coastal vessels.				
Type of binder	Silicone elastomer				
Mixing Ratio	Base : Hardener : Additive = 74.5 : 16.1 : 9.4 (by volume)				
Color	Red Brown S				
Flash Point	Base : 26.8 °C, Hardener : 26.8 °C, Additive : 25.1 °C				
Solids by Volume	70% ± 2 (Test Method : ISO-3233)				
VOC	276 g/l (EPA Method24), 295 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	3.50 m ² /l [0.286 l/m ²] at D.F.T 200 μm				
Wet Film Thickness	214 - 286 μm				
Dry Film Thickness	150 - 200 μm				
Drying Time (at D.F.T. 200 μm)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	6 hrs.	4 hrs.	3 hrs.	2 hr.
	Hard Dry	13 hrs.	8 hrs.	5 hrs.	3 hrs.
Painting Interval (at D.F.T. 200 μm)	Minimum	-	-	-	-
	Maximum	-	-	-	-
Pot Life		45 mins.	30 mins.	30 mins.	30 mins.
Dry to launch	Minimum	36 hrs.	30 hrs.	24 hrs.	18 hrs.
Thinner	RAVAX THINNER, SILICON THINNER A Thinning: 5% (0-5deg C), 3% (6-10deg C) 0% (over 10deg C) (for cleaning only EPICON THINNER, EPOXY THINNER A)				
Method of Application	Airless spray, Brush				
Condition of Application	Temperature	: Minimum 0 °C			
	Humidity	: Maximum 30 ~ 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 519 - 721			
	Paint output pressure	: Min. 20.0 MPa			
Preferable Preceding Coats	CMP BIOCLEAN HB, CMP BIOCLEAN R, CMP BIOCLEAN R PLUS CMP BIOCLEAN UNDERCOAT PLUS				
Packaging	Three pack product				

TECHNICAL DATA (at 200 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	8H	6H	4H	3.5H	3H	2.5H	2H	1H	1H
Dry to recoat	Min.	-	-	-	-	-	-	-	-	-	-
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		-	19H	13H	8H	6.5H	5H	4H	3H	2H	2H
Dry to immerse	Body	-	46H	36H	30H	27H	24H	21H	18H	16H	14H
	Touch-up	-	46H	36H	30H	27H	24H	21H	18H	16H	14H
Pot life		-	45m	45m	30m	30m	30m	30m	30m	20m	20m
Shelf life (M)		-	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

Agitate Base with a power agitator until it is turned homogeneous, and then combine entire contents of Hardener with Base and mix thoroughly with power agitator. Then add Additive and mix thoroughly.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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CMP BIOCLEAN HB

(CMP BCL HB)

PRODUCT DESCRIPTION

CMP BIOCLEAN HB is a three-pack silicone elastomer foul release coating.

PRODUCT INFORMATION

Type	Silicone elastomer foul release coating				
Recommended Use	As a finish coat in the CMP BIOCLEAN foul release system. Especially designed for ocean going liners and fast coastal vessels.				
Type of binder	Silicone elastomer				
Mixing Ratio	Base : Hardener : Accelerator = 75 : 19 : 6 (by volume)				
Color	Light Grey S, Red Brown S				
Flash Point	Base : 34.5 °C, Hardener : 26.8 °C, Additive : 25.1 °C				
Solids by Volume	79% ± 2 (Test Method : ISO-3233)				
VOC	191 g/l (Method24), 223 g/l (Korea Air Conservation Act)				
Coverage(Theoretical)	3.95 m ² /l [0.253 l/m ²] at D.F.T 200 μm				
Wet Film Thickness	253 μm				
Dry Film Thickness	200 μm				
Drying Time (at D.F.T. 200 μm)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	6 hrs.	4 hrs.	3 hrs.	2 hrs.
	Hard Dry	13 hrs.	8 hrs.	5 hrs.	3 hrs.
Painting Interval * (at D.F.T. 200 μm)	Minimum	-	-	-	-
	Maximum	-	-	-	-
Pot Life		45 mins.	30 mins.	30 mins.	30 mins.
Dry to launch	Minimum	36 hrs.	30 hrs.	24 hrs.	18 hrs.
Thinner	RAVAX THINNER, SILICON THINNER A Thinning: 5% (0-5deg C), 3% (6-10deg C) 0% (over 10deg C) (for cleaning only EPICON THINNER, EPOXY THINNER A)				
Method of Application	Airless spray, Brush				
Condition of Application	Temperature	: Minimum 0 °C			
	Humidity	: Maximum 30 ~ 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 519 - 721			
	Paint output pressure	: Min. 20.0 MPa			
Preferable Preceding Coats	CMP BIOCLEAN R				
Packaging	Three pack product				

TECHNICAL DATA (at 200 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	8H	6H	4H	3.5H	3H	2.5H	2H	1.5H	1.5H
Dry to recoat*)	Min.	-	-	-	-	-	-	-	-	-	-
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		-	19H	13H	8H	6.5H	5H	4H	3H	2H	2H
Dry to immerse	Body	-	46H	36H	30H	27H	24H	21H	18H	16H	14H
	Touch-up	-	46H	36H	30H	27H	24H	21H	18H	16H	14H
Pot life		-	45m	45m	30m	30m	30m	30m	30m	20m	20m
Shelf life (M)		-	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) Kindly consult CSP sales office.
- Agitate Base with a power agitator until it is turned homogeneous, and then combine entire contents of Hardener with Base and mix thoroughly with power agitator. Then add Additive and mix thoroughly.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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CMP BIOCLEAN R

(CMP BCL R)

PRODUCT DESCRIPTION

CMP BIOCLEAN R is one pack silicone elastomer foul release coating.

PRODUCT INFORMATION

Type	Silicone elastomer foul release coating				
Recommended Use	As a finish coat in the CMP BIOCLEAN foul release system. Especially designed for rudder and propeller of ocean-going vessels and fast coastal vessels.				
Type of binder	Silicone elastomer				
Mixing Ratio	-				
Color	Light Gray, Red Brown				
Flash Point	26.5 °C				
Solids by Volume	65% ± 2 (Test Method : ISO-3233)				
VOC	325 g/l (Korea Air Conservation Act)				
Coverage(Theoretical)	3.25 m ² /l [0.308 l/m ²] at D.F.T 200μm				
Wet Film Thickness	308 μm				
Dry Film Thickness	200 μm				
Drying Time (at D.F.T. 200μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	6 hrs.	3 hrs.	2 hrs.	1 hr.
	Hard Dry	14 hrs.	10 hrs.	7 hrs.	5 hrs.
Painting Interval (at D.F.T. 200μm)	Minimum	14 hrs.	10 hrs.	7 hrs.	5 hrs.
	Maximum*	-	-	-	-
Pot Life		-	-	-	-
Dry to launch	Minimum	24 hrs.	20 hrs.	14 hrs.	8 hrs.
Thinner	RAVAX THINNER, SILICON THINNER A EPOXY THINNER A(for cleaning only)				
Method of Application	Airless spray, Brush				
Condition of Application	Temperature	: Minimum 0 - 35 °C			
	Humidity	: Maximum 40 ~ 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 519 - 721			
	Paint output pressure	: Min. 20.0 MPa			
Preferable Preceding Coats	CMP BIOCLEAN SG-R				
Preferable Subsequent coats	CMP BIOCLEAN HB, CMP BIOCLEAN PLUS				
Packaging	One pack product				

* Kindly consult CSP sales office.

TECHNICAL DATA (at 200 μ m)

Item		Temp (°C)										
		-5	0	5	10	15	20	25	30	35	40	
Set to touch		-	10H	6H	3H	2.5H	2H	1.5H	1H	45m		
Dry to recoat	Min.	-	20H	14H	10H	8.5H	7H	6H	5H	4H		
	Max.*)	-	-	-	-	-	-	-	-	-		
Dry to hard		-	20H	14H	10H	8H	7H	6H	5H	4H		
Dry to immerse	Body	-	38H	24H	20H	17H	14H	11H	8H	7H		
	Touch-up	-	38H	24H	20H	17H	14H	11H	8H	7H		
Pot life		-	-	-	-	-	-	-	-	-		
Shelf life (M)		-	18M	18M	18M	18M	18M	18M	18M	18M		
Max. heat resistance		60°C (Non-continuous)										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

*) : In case of dry to recoat date, this is data of subsequent coating of silicone on CMP BIOCLEAR R.

Please contact our sales team when applying below 5°C.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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CMP BIOCLEAN R PLUS

(CMP BCL R P)

PRODUCT DESCRIPTION

CMP BIOCLEAN R PLUS is one pack, silicone elastomer foul release coating.

PRODUCT INFORMATION

Type	Silicone elastomer foul release coating				
Recommended Use	As a finish coat in the CMP BIOCLEAN foul release system. Especially designed for ocean-going vessels.				
Type of binder	Silicone elastomer				
Mixing Ratio	-				
Color	Red Brown, Plum				
Flash Point	29.1 °C				
Solids by Volume	65% ± 2 (Test Method : ISO-3233)				
VOC	311 g/l (Korea Air Conservation Act)				
Coverage(Theoretical)	3.25 m ² /l [0.308 l/m ²] at D.F.T 200 μm				
Wet Film Thickness	154 – 308 μm				
Dry Film Thickness	100 – 200 μm				
Drying Time (at D.F.T. 200 μm)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	6 hrs.	3 hrs.	2 hrs.	1 hr.
	Hard Dry	14 hrs.	10 hrs.	7 hrs.	5 hrs.
Painting Interval (at D.F.T. 200 μm)	Minimum	14 hrs.	10 hrs.	7 hrs.	5 hrs.
	Maximum	-	-	-	-
Pot Life	-	-	-	-	-
Dry to launch	Minimum	36 hrs.	30 hrs.	24 hrs.	18 hrs.
Thinner	RAVAX THINNER, SILICON THINNER A EPOXY THINNER A(for cleaning only)				
Method of Application	Airless spray, Brush				
Condition of Application	Temperature	: Minimum 0 - 35 °C			
	Humidity	: Maximum 40 ~ 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 519 - 721			
	Paint output pressure	: Min. 20.0 MPa			
Preferable Preceding Coats	CMP BIOCLEAN SG-R				
Preferable Subsequent coats	CMP BIOCLEAN PLUS				
Packaging	One pack product				

TECHNICAL DATA (at 200 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	10H	6H	3H	2.5H	2H	1.5H	1H	45m	
Dry to recoat	Min.	-	20H	14H	10H	8.5H	7H	6H	5H	4H	
	Max.*)	-	-	-	-	-	-	-	-	-	
Dry to hard		-	20H	14H	10H	8H	7H	6H	5H	4H	
Dry to immerse	Body	-	42H	36H	30H	27H	24H	21H	18H	15H	
	Touch-up	-	42H	36H	30H	27H	24H	21H	18H	15H	
Pot life		-	-	-	-	-	-	-	-	-	
Shelf life (M)		-	18M	18M	18M	18M	18M	18M	18M	18M	
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) Kindly consult CSP sales office.
- In case of dry to recoat date, this is data of subsequent coating of silicone on CMP BIOCLEAR R PLUS.
Please contact our sales team when applying below 5°C.
- As a tie coat for CMP BIOCLEAR PLUS system, CMP BIOCLEAR R PLUS Plum 100 μ m x1 coat is recommended.
- As a top coat for Rudder & Propeller, CMP BIOCLEAR R PLUS Red brown 200 μ m x1coat is recommended.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry.
Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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CMP BIOCLEAN SG-R

(CMP BCL SG-R)

PRODUCT DESCRIPTION

CMP BIOCLEAN SG-R, is two pack epoxy anti-corrosive paint for CMP BIOCLEAN system.

PRODUCT INFORMATION

Type	Modified epoxy paint				
Recommended Use	As a basecoat in the CMP BIOCLEAN foul release system for rudder and propeller				
Type of binder	Modified Epoxy / Polyamide resin				
Mixing Ratio	Base : Hardener = 77 : 23 (by volume)				
Color	Grey				
Flash Point	Base : 24 °C, Hardener : 25.5 °C				
Solids by Volume	60% ± 2 (Test Method : ISO-3233)				
VOC	385 g/l (Method24), 447 g/l (Korea Air Conservation Act)				
Coverage(Theoretical)	6.00 m ² /l [0.167 l/m ²] at D.F.T 100μm				
Wet Film Thickness	167 μm				
Dry Film Thickness	100 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	7 hrs.	5.5 hrs.	4 hrs.	2.5 hrs.
	Hard Dry	24 hrs.	18 hrs.	10 hrs.	8 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	7 hrs.	6 hrs.	4 hrs.	3 hrs.
	Maximum*	-	-	-	-
Pot Life		18 hrs.	14 hrs.	7 hrs.	4 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush				
Condition of Application	Temperature	: Minimum 0 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621, 623			
	Paint output pressure	: 14.7 - 17.7 MPa			
	Viscosity	: 1.6 - 2.0 Pa·s			
Preferable Preceding Coats	BANNOH Series, EPICON B-100 PRIMER etc.,				
Preferable Subsequent Coats	CMP BIOCLEAN R, CMP BIOCLEAN R PLUS				
Packaging	Two pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	8H	7H	5.5H	4.5H	4H	3H	2.5H	2H	2H
Dry to recoat	Min.	-	9H	7H	6H	5H	4H	3.5H	3H	2H	2H
	Max*)	-	-	-	-	-	-	-	-	-	-
Dry to hard		-	36H	24H	18H	14H	10H	9H	8H	7H	7H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Pot life		-	21H	18H	14H	10H	7H	5.5H	4H	3H	2H
Shelf life (M)		-	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) Kindly consult CSP sales office.
- In common with all epoxy coatings, CMP BIOCLEAR SG-R will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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EPICON T-500 PRIMER H

(EP T-500 H)

PRODUCT DESCRIPTION

EPICON T-500 PRIMER H, based on a combination of epoxy resin and hardener, has excellent physical properties such as adhesion, toughness, abrasion resistance, etc. and chemical resistance to salt-water, petroleum products, crude oil, alkalis and weak acids, and it is particularly compatible with EPICON T-500.

PRODUCT INFORMATION

Type	Epoxy coating				
Recommended Use	As primer for product carrier tank etc, interiors and useful as holding primer				
Type of binder	Pure Epoxy				
Mixing Ratio	Base : Hardener = 73 : 27 (by volume)				
Color	Pink				
Flash Point	Base : 13.0 °C, Hardener : 15.5 °C				
Solids by Volume	35% ± 2 (Test Method : ISO-3233)				
VOC	578 g/l (Method24), 597 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	7.00 m ² /l [0.143 l/m ²] at D.F.T 50μm				
Wet Film Thickness	143 μm				
Dry Film Thickness	50 μm				
Drying Time (at D.F.T.50μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	120 min.	90 min.	40 min.	20 min.
	Hard Dry	24 hrs.	16 hrs.	8 hrs.	4 hrs.
Painting Interval (at D.F.T.50μm)	Minimum	24 hrs.	16 hrs.	12 hrs.	8 hrs.
	Maximum *	28 days	28 days	21 days	15 days
	Maximum **	10 days	10 days	7 days	5 days
Pot Life		24 hrs.	24 hrs.	16 hrs.	12 hrs.
Thinner	EPICON T-500 THINNER, EPOXY THINNER B, EPOXY THINNER D				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 719			
	Paint output pressure	: 8.8 - 11.8 MPa			
Viscosity	: 0.9 - 1.0 Pa·s				
Preferable Preceding Coats	CERABOND 2000				
Preferable Subsequent Coats	EPICON T-500				
Packaging	Two pack product				

TECHNICAL DATA (at 50 μ m)

Item		Temp (°C)										
		-5	0	5	10	15	20	25	30	35	40	
Set to touch		-	-	120m	90m	60m	40m	30m	20m	15m	10m	
Dry to recoat	Min.	-	-	24H	16H	14H	12H	10H	8H	6H	5H	
	Max.*	-	-	28D	28D	25D	21D	18D	15D	15D	15D	
	Max.**	-	-	10D	10D	8D	7D	6D	5D	4D	3D	
Dry to hard		-	-	24H	16H	12H	8H	6H	4H	3H	2H	
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-	
	Touch-up	-	-	-	-	-	-	-	-	-	-	
Pot life		-	-	24H	24H	20H	16H	14H	12H	10H	8H	
Shelf life (M)		-	-	12M	12M	12M	12M	12M	12M	12M	12M	
Max. heat resistance		Continuous: 60°C / Non-continuous: 75°C										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

* : In case that the surface is never exposed to sunshine

** : In case of outdoor exposure

Notes :

In common with all epoxy coatings, EPICON T-500 PRIMER H will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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EPICON T-500

(EP T-500)

PRODUCT DESCRIPTION

EPICON T-500, is a anti-corrosive paint based on epoxy resin. Product provides excellent physical properties such as adhesion, toughness, abrasion resistance, etc. as well as chemical resistance to fresh water, petroleum products, crude oil, alkalis and weak acids. It is suitable for protection of tank interiors. It is suitable for COT PSPC. Airless spray can be a dry film thickness of 70-160 microns per coat.

PRODUCT INFORMATION

Type	Epoxy paint				
Recommended Use	Product carrier tank, Cargo oil tank, Fresh water tank, Drinking water tank, Portable water tank, Hold, Solvent tank, Chemical tank, etc				
Type of binder	Pure epoxy				
Mixing Ratio	Base : Hardener = 78 : 22 (by volume)				
Color	Red brown, Grey, Light grey, White				
Flash Point	Base : 22.0 °C, Hardener : 21.0 °C				
Solids by Volume	58% ± 2 (Test Method : ISO-3233)				
VOC	403 g/l (EPA Method24), 436 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	4.64 m ² /l [0.215 l/m ²] at D.F.T 125 μ m				
Wet Film Thickness	121 – 276 μ m				
Dry Film Thickness	70 – 160 μ m				
Drying Time (at D.F.T. 125 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3.5 hrs.	2.5 hrs.	1.5 hrs.	30 min.
	Hard Dry	36 hrs.	24 hrs.	12 hrs.	6 hrs.
Painting Interval (at D.F.T. 125 μ m)	Minimum	36 hrs.	24 hrs.	12 hrs.	6 hrs.
	Maximum*	28 days.	28 days.	21 days.	14 days.
	Maximum **	10 days	10 days	7 days	5 days
Pot Life		10 hrs.	7 hrs.	5 hrs.	3 hrs.
Thinner	EPICON T-500 THINNER, EPOXY THINNER B, EPOXY THINNER D				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 5°C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619, 621, 623			
	Paint output pressure	: 14.7 - 17.7 MPa			
	Viscosity	: 1.0 - 1.8 Pa·s			
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, EPICON T-500 PRIMER H, etc.				
Preferable Subsequent Coats	EPICON T-500				
Packaging	Two pack product				

TECHNICAL DATA (at 125 μ m)

Item	Temp(°C)	0	5	10	15	20	25	30	35	40
		Set to touch	-	3.5H	2.5H	2H	1.5H	1H	30m	20m
Dry to hard	-	36H	24H	18H	12H	8H	6H	5H	4H	
Dry to recoat	Min.	-	36H	24H	18H	12H	8H	6H	5H	4H
	Max.*	-	28D	28D	28D	28D	28D	28D	28D	28D
	Max.**	-	28D	28D	24D	21D	18D	14D	12D	10D
	Max.***	-	10D	10D	9D	7D	6D	5D	4D	3D
Dry to immerse	Body coating	-	20D	15D	10D	7D	7D	5D	5D	5D
	Touch-up	-	15D	12D	9D	6D	5D	4D	4D	3D
Temporary Immersion****	-	10D	8D	6D	5D	4D	3D	2D	2D	
Pot life	-	10H	7H	6H	5H	4H	3H	2H	1.5H	
Shelf life (M)	-	12M	12M	12M	12M	12M	12M	12M	12M	
Max. heat resistance	Continuous: 60°C / Non-continuous: 75°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

* : Between EPICON T-500 PRIMER H and EPICON T-500

** : Between EPICON T-500 and EPICON T-500. (In case that the surface is never exposed to sunshine.)

*** : Between EPICON T-500 and EPICON T-500 (In case of outdoor exposure.)

**** : It means temporary immersion time for tank test or sea trial (max. period of immersion :7days)

Notes :

In common with all epoxy coatings, EPICON T-500 will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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EPICON T-800

(EP T-800)

PRODUCT DESCRIPTION

EPICON T-800, is a anticorrosive paint based on epoxy phenolic resin. Product provides excellent physical properties such as adhesion, toughness, abrasion resistance, etc. as well as chemical resistance to salt-water, fresh water, petroleum products, crude oil, alkalis and weak acids. It is suitable for protection of tank interiors. It is suitable for COT PSPC. Airless spray can be a dry film thickness of 75-160 microns per coat.

PRODUCT INFORMATION

Type	Epoxy phenolic paint				
Recommended Use	Product carrier tank, Crude oil tank, Chemical tank, etc.				
Type of binder	Phenol Epoxy				
Mixing Ratio	Base : Hardener = 84 : 16 (by volume)				
Color	Grey, Light Grey, Red brown				
Flash Point	Base : 26.2 °C, Hardener : 12.0 °C				
Solids by Volume	65% ± 2 (Test Method : ISO-3233)				
VOC	359 g/l (Method24), 385 g/l (Korea Air Conservation Act)				
Coverage(Theoretical)	5.20 m ² /l [0.192 l/m ²] at D.F.T 125μm				
Wet Film Thickness	115 – 246 μm				
Dry Film Thickness	75 – 160 μm				
Drying Time (at D.F.T. 125μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	-	2.5 hrs.	1.5 hrs.	0.5 hrs.
	Hard Dry	-	24 hrs.	12 hrs.	6 hrs.
Painting Interval (at D.F.T. 125μm)	Minimum	-	24 hrs.	16 hrs.	14 hrs.
	Maximum *	-	28 days	21 days	14 days
	Maximum **	-	10 days	7 days	5 days
Pot Life			7 hrs.	5 hrs.	3 hrs.
Thinner	EPICON T-800 THINNER, EPOXY THINNER B, EPOXY THINNER D				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 10 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619, 621, 623			
	Paint output pressure	: 14.7 - 17.7 MPa			
Viscosity	: 1.0 - 1.8 Pa·s				
Preferable Preceding Coats	CERABOND-2000, EPICON T-800 etc.				
Preferable Subsequent Coats	EPICON T-800				
Packaging	Two pack product				

TECHNICAL DATA (at 125 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	-	-	2.5H	2H	1.5H	1H	30m	20m	15m
Dry to hard		-	-	-	24H	18H	12H	8H	6H	5H	4H
Dry to recoat	Min.	-	-	-	24H	18H	16H	15H	14H	12H	8H
	Max.*	-	-	-	28D	24D	21D	18D	14D	12D	10D
	Max.**	-	-	-	10D	8D	7D	6D	5D	4D	3D
Dry to immerse	Body coating	-	-	-	20D	15D	10D	7D	6D	5D	4D
	Touch-up	-	-	-	12D	10D	7D	6D	5D	4D	3D
Temporary Immersion***		-	-	-	8D	6D	5D	4D	3D	2D	2D
Pot life		-	-	-	7H	6H	5H	4H	3H	2H	1.5H
Shelf life (M)		-	-	-	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		Continuous: 60°C / Non-continuous: 75°C (within 10days)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

* : In case that the surface is never exposed to sunshine

** : In case of outdoor exposure

*** It means temporary immersion time for tank test or sea trial.(max. period of immersion : 7days)

Notes :

In common with all epoxy coatings, EPICON T-800 will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry.

Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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EPICON T-800 QD

(EP T-800 QD)

PRODUCT DESCRIPTION

EPICON T-800 QD is a anticorrosive paint based on epoxy phenolic resin. Product provides excellent physical properties such as adhesion,, toughness, abrasion resistance, etc. as well as chemical resistance to salt-water, fresh water, petroleum products, crude oil, alkalis and weak acids. Airless spray can build a dry film thickness of 75-160 microns per coat. It is suitable for the application at cold weather.

PRODUCT INFORMATION

Type	Epoxy phenolic paint			
Recommended Use	Product carrier tank, Chemical tank, etc.			
Type of binder	Phenol Epoxy			
Mixing Ratio	Base : Hardener = 84 : 16 (by volume)			
Color	Grey, Light Grey, Red brown			
Flash Point	Base : 26.2 °C, Hardener : 15.0 °C			
Solids by Volume	65% ± 2 (Test Method : ISO-3233)			
VOC	359 g/l (Method24), 404 g/l (Korea Air Conservation Act)			
Coverage(Theoretical)	5.20 m ² /l [0.192 l/m ²] at D.F.T 125 μ m			
Wet Film Thickness	115 – 246 μ m			
Dry Film Thickness	75 – 160 μ m			
Drying Time (at D.F.T. 125 μ m)	Temperature	5 °C	10 °C	20 °C
	Surface Dry	3.5 hrs.	2 hrs.	1 hr.
	Hard Dry	24 hrs.	20 hrs.	8 hrs.
Painting Interval (at D.F.T. 125 μ m)	Minimum	24 hrs.	20 hrs.	16 hrs.
	Maximum *	28 days	21 days	14 days
	Maximum **	10 days	10 days	7 days
Pot Life		8 hrs.	6 hrs.	3 hrs.
Thinner	EPICON T-800 THINNER, EPOXY THINNER B, EPOXY THINNER D			
Method of Application	Airless spray, Brush, Roller			
Condition of Application	Temperature	: Minimum 5 °C		
	Humidity	: Maximum 85 % R.H.		
	For Airless spray ;			
	Tip No.	: GRACO 619, 621,623		
	Paint output pressure	: 14.7 - 17.7 MPa		
Viscosity	: 1.0 - 1.8 Pa·s			
Preferable Preceding Coats	CERABOND-2000, EPICON T-800 QD etc.			
Preferable Subsequent Coats	EPICON T-800 QD			
Packaging	Two pack product			

TECHNICAL DATA (at 125 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	-	3.5H	2H	1.5H	1H	40m	-	-	-
Dry to hard		-	-	24H	20H	12H	8H	7H	-	-	-
Dry to recoat	Min.	-	-	24H	20H	17H	16H	15H	-	-	-
	Max.*	-	-	28D	21D	17D	14D	12D	-	-	-
	Max.**	-	-	10D	10D	8D	7D	6D	-	-	-
Dry to immerse	Body coating	-	-	20D	15D	10D	7D	6D	-	-	-
	Touch-up	-	-	15D	12D	8D	6D	5D	-	-	-
Temporary Immersion***		-	-	8D	6D	5D	4D	4D	-	-	-
Pot life		-	-	8H	6H	4H	3H	2H	-	-	-
Shelf life (M)		-	-	12M	12M	12M	12M	12M	-	-	-
Max. heat resistance		Continuous: 60°C / Non-continuous: 75°C (within 10days)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

* : In case that the surface is never exposed to sunshine

** : In case of outdoor exposure

*** It means temporary immersion time for tank test or sea trial (max. period of immersion : 7days)

**** Induction time: It is recommended approximately 10minutes

Notes :

In common with all epoxy coatings, EPICON T-800 QD will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry.
Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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PERMAX No.3300

(PM 3300)

PRODUCT DESCRIPTION

PERMAX No.3300, based on a combination of epoxy resin with glass-flake. It provides excellent physical properties such as adhesion, toughness and abrasion resistance, etc., and chemical resistance to salt water, fresh water, crude oil, alkalis and weak acids.

It is suitable for protective coating of splash zones, underwater areas and tank interiors.

PRODUCT INFORMATION

Type	Epoxy mastic paint with glass flake				
Recommended Use	Splash zone and underwater area of ship's outer shell and offshore structures				
Mixing Ratio	Base : Hardener = 77:23(by volume)				
Color	Light Grey, Red Brown				
Flash Point	Base : 32.0 °C, Hardener : 28.0 °C				
Solids by Volume	80% ± 2 (Test Method : ISO-3233)				
VOC	241 g/l (EPA Method24), 302 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	3.20 m ² /l [0.312 l/m ²] at D.F.T 250 μ m				
Wet Film Thickness	250 – 625 μ m				
Dry Film Thickness	200 – 500 μ m				
Drying Time (at D.F.T. 250 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	7 hrs.	4 hrs.	2.5 hrs.	1.5 hrs.
	Hard Dry	24 hrs.	13 hrs.	7 hrs.	5 hrs.
Painting Interval (at D.F.T. 250 μ m)	Minimum	24 hrs.	13 hrs.	7 hrs.	5 hrs.
	Maximum*	7 days	7 days	7 days	7 days
Pot Life		8 hrs.	5 hrs.	3 hrs.	2 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum -5°C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Airless Gun	: GRACO ZINC GUN (208 - 663) etc			
	Tip No.	: GRACO Ball Tip No. 205 – 723 or 621, 623			
	Paint output pressure	: 14.7 – 19.7 MPa			
Viscosity	: 1.5 – 2.0 Pa.s				
Preferable Preceding Coats	-				
Preferable Subsequent Coats	BANNOH Series, BANNOH 1500 R Z, EPICON MARINE HB, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 250 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		15H	10H	7H	4H	3H	2.5H	2H	1.5H	1H	1H
Dry to recoat	Min.	60H	36H	24H	13H	10H	7H	6H	5H	4H	3H
	Max.*)	7D	7D	7D	7D	7D	7D	7D	7D	7D	7D
Dry to hard		60H	36H	24H	13H	10H	7H	6H	5H	4H	3H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		60H	36H	24H	13H	10H	7H	6H	5H	4H	3H
Pot life		15H	11H	8H	5H	4H	3H	2.5H	2H	1H	1H
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		150°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) Please refer to the painting specifications.
- In common with all epoxy coatings, PERMAX No.3300 will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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CLEANKEEP 5000

(CK 5000)

PRODUCT DESCRIPTION

CLEANKEEP 5000, solvent-free epoxy paint, is designed as a protective coating of drinking water tank. This product contains no solvent, no heavy metal with excellent transfer efficiency. CLEANKEEP 5000 can be coated by conventional airless spray.

PRODUCT INFORMATION

Type	Solvent-free epoxy coating				
Recommended Use	Fresh water tank, Drinking water tank, Portable water tank				
Type of binder	Solvent free epoxy				
Mixing Ratio	Base : Hardener = 81 : 19 (by volume)				
Color	Cream, Light grey, Light blue				
Flash Point	Base : 135.0 °C, Hardener : 126.0 °C				
Solids by Volume (Theoretical)	100% (Test Method : ISO-3233)				
VOC	60 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	3.33 m ² /l [0.300 l/m ²] at D.F.T 300μm				
Wet Film Thickness	300 μm				
Dry Film Thickness	300 μm				
Drying Time (at D.F.T. 300μm)	Temperature	10 °C	20 °C	30 °C	40 °C
	Surface Dry	45 hrs.	18 hrs.	11 hrs.	8 hrs.
	Hard Dry	96 hrs.	32 hrs.	24 hrs.	18 hrs.
Painting Interval (at D.F.T. 300μm)	Minimum	96 hrs.	32 hrs.	24 hrs.	18 hrs.
	Maximum	14 days	14 days	14 days	12 days
Pot Life		1.5 hrs.	1 hr.	45 min.	20 min.
Thinner	EPICON THINNER, EPOXY THINNER A (for cleaning only)				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 10 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619 - 721			
	Paint output pressure	: 23.5 - 33.4 MPa			
	Viscosity	: 3.0 – 4.0 Pa·s			
Preferable Preceding Coats	CLEAN KEEP 5000 HOLDING PRIMER, etc.				
Preferable Subsequent Coats	-				
Packaging	Two pack product				

Notes : 1. Certificated by the test of quality for Drinking Water as follows

- SS375 : 1994 – SINGAPORE, - NSF61: 2015 – USA, - Ministry of Health Circular No.102 / 78 : 2001 – ITALY,
- Hiroshima City Research Laboratory of Public Health – Japan

2. Rinse (tank wash) should be carried out after full cure and before the tank goes into service. And, the instruction of rinse is described in relevant certificate (e.g. NSF61).

TECHNICAL DATA (at 300 μ m)

Item	Temp (°C)	-5	0	5	10	15	20	25	30	35	40
		Set to touch		-	-	-	45H	26H	18H	14H	11H
Dry to recoat	Min.	-	-	-	96H	55H	32H	26H	24H	20H	18H
	Max.	-	-	-	14D	14D	14D	14D	14D	12D	12D
Dry to hard		-	-	-	96H	55H	32H	26H	24H	20H	18H
Dry to immerse	Body	-	-	-	15D	10D	7D	6D	5D	4D	3D
	Touch-up	-	-	-	15D	10D	7D	6D	5D	4D	3D
Dry to Touch-up		-	-	-	96H	55H	32H	26H	24H	20H	18H
Pot life		-	-	-	90m	70m	60m	50m	45m	30m	20m
Shelf life (M)		-	-	-	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance	Continuous: 60°C / Non-continuous: 75°C										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. Pot life is short. Please mix only required amount.
2. In winter season, heater for paint and air in the tank is recommended.
3. In common with all epoxy coatings, CLEAN KEEP 5000 will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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CLEANKEEP 5000 QD

(CK 5000 QD)

PRODUCT DESCRIPTION

CLEANKEEP 5000 QD, solvent-free epoxy paint, is designed as a protective coating of drinking water tank.

CLEANKEEP 5000 QD is friendly to the environment as it provides no solvent, no heavy metal and less wasted material while coating. CLEANKEEP 5000 QD could be coated by airless spray.

PRODUCT INFORMATION

Type	Solvent-free epoxy coating				
Recommended Use	Fresh water tank, Drinking water tank, Potable water tank				
Type of binder	Solvent free epoxy				
Mixing Ratio	Base : Hardener = 79 : 21 (by volume)				
Color	Cream, Light grey				
Flash Point	Base : 160.0 °C, Hardener : 125.0 °C				
Solids by Volume (Theoretical)	100%				
VOC (Theoretical)	52 g/l (Korea Clean Air Conservation Act)				
Coverage (Theoretical)	3.33 m ² /l [0.300 l/m ²] at D.F.T 300 μ m				
Wet Film Thickness	300 μ m				
Dry Film Thickness	300 μ m				
Drying Time (at D.F.T. 300 μ m)	Temperature	5°C	10°C	15°C	20°C
	Surface Dry	40 hrs.	20 hrs.	14 hrs.	9 hrs.
	Hard Dry	72 hrs.	36 hrs.	28 hrs.	22 hrs.
Painting Interval (at D.F.T. 300 μ m)	Minimum	72 hrs.	36 hrs.	22 hrs.	22 hrs.
	Maximum	10 days	10 days	10 days	10 days
Pot Life		1.5 hrs.	45 min	40 min.	30 min
Thinner	EPICON THINNER, EPOXY THINNER A (for cleaning only)				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum		5 °C	
	Humidity	: Maximum		85 % R.H.	
	For Airless spray :				
	Tip No.	: GRACO 419 - 721			
	Paint output pressure	: 23.5 - 33.4 MPa			
	Viscosity	: 3.0 – 4.0 Pa·s			
Preferable Preceding Coats	CLEANKEEP 5000 HOLDING PRIMER, etc				
Preferable Subsequent Coats	-				
Packaging	Two pack product				

Notes :

- Certificated by the test of quality for Drinking Water as follows
 - Hiroshima City Research Laboratory of Public Health – Japan,
 - NSF 61 / ANSI / CAN 61 Drinking Water System Components – Health Effects. *Detail information is described in the following URL.
<https://www.nsf.org/certified-products-systems>

2. Rinse (tank wash) should be carried out after full cure and before the tank goes into service

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TECHNICAL DATA (at 300 μ m)

Item	Temp (°C)	-5	0	5	10	15	20	25	30	35	40
	Set to touch		-	-	40H	20H	14H	9H	-	-	-
Dry to recoat	Min.	-	-	72H	36H	28H	22H	-	-	-	-
	Max.	-	-	10D	10D	10D	10D	-	-	-	-
Dry to hard		-	-	72H	36H	28H	22H	-	-	-	-
Dry to immerse	Body	-	-	15D	10D	7D	6D	-	-	-	-
	Touch-up	-	-	15D	10D	7D	6D	-	-	-	-
Dry to Touch-up		-	-	72H	36H	28H	22H	-	-	-	-
Pot life		-	-	90m	45m	40m	30m	-	-	-	-
Shelf life (M)		-	-	12M	12M	12M	12M	-	-	-	-
Max. heat resistance	Continuous: 60°C / Non-continuous: 75°C										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. Pot life is short. Please mix only required amount.
2. In winter season, heater for paint and air in the tank is recommended.
3. In common with all epoxy coatings, CLEAN KEEP 5000 will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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CLEANKEEP 5000 HOLDING PRIMER

(CK 5000 H)

PRODUCT DESCRIPTION

CLEANKEEP 5000 HOLDING PRIMER, based on a combination of epoxy resin and hardener, has excellent physical properties such as adhesion, toughness, abrasion resistance and water resistance.

It is particularly compatible with CLEANKEEP 5000 and useful as a holding primer for drinking water tank interiors.

PRODUCT INFORMATION

Type	Epoxy holding primer				
Recommended Use	As holding primer for drinking water tank interiors				
Type of binder	Epoxy				
Mixing Ratio	Base : Hardener = 73 : 27 (by volume)				
Color	Pink, P/Brown				
Flash Point	Base : 23.0 °C, Hardener : 21.0 °C				
Solids by Volume	33% ± 2 (Test Method : ISO-3233)				
VOC	551 g/l (EPA Method24), 568 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	6.60 m ² /l [0.151 l/m ²] at D.F.T 50 μ m				
Wet Film Thickness	152 μ m				
Dry Film Thickness	50 μ m				
Drying Time (at D.F.T.50 μ m)	Temperature	5°C	10°C	20°C	40°C
	Surface Dry	3 hrs.	90 min.	40 min.	10 min.
	Hard Dry	18 hrs.	8 hrs.	4 hrs.	1 hr.
Painting Interval (at D.F.T.50 μ m)	Minimum	18 hrs.	8 hrs.	4 hrs.	1 hr.
	Maximum	15 days	15 days	15 days	15 days
Pot Life		24 hrs.	12 hrs.	8 hrs.	3 hrs.
Thinner	CLEAN KEEP 5000 HOLDING PRIMER THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 719			
	Paint output pressure	: 8.8 - 11.8 MPa			
Viscosity	: 0.9 - 1.0 Pa·s				
Preferable Preceding Coats	EPICON ZINC RICH PRIMER B-2, CERABOND 2000, etc.				
Preferable Subsequent Coats	CLEANKEEP 5000				
Packaging	Two pack product				

* Preceding coats are not recommended in relevant certificate (e.g. NSF 61).

TECHNICAL DATA (at 50 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	-	180m	90m	60m	40m	30m	20m	15m	10m
Dry to recoat	Min.	-	-	18H	8H	5H	4H	3H	2H	1.5H	1H
	Max.*	-	-	28D	28D	28D	28D	28D	28D	28D	28D
	Max.**	-	-	15D	15D	15D	15D	15D	15D	15D	15D
Dry to hard		-	-	18H	8H	5H	4H	3H	2H	1.5H	1H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Pot life		-	-	24H	12H	9H	8H	7H	6H	4H	3H
Shelf life (M)		-	-	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		Continuous: 60°C / Non-continuous: 75°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

* : In case that the surface is never exposed to sunshine

** : In case of outdoor exposure

Notes :

In common with all epoxy coatings, CLEAN KEEP 5000 HOLDING PRIMER will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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BISCON HB-NT L

(BC HB NT L)

PRODUCT DESCRIPTION

BISCON HB-NT L is a epoxy type paint.

It gives excellent physical properties such as adhesion, toughness and abrasion resistance and chemical resistance to water, salt water and crude oil.

PRODUCT INFORMATION

Type	Epoxy type paint				
Recommended Use	Cargo hold, Inside and outside of accommodation space, Void space, Cofferdam, Engine room, Pipe line, Other steel structures, etc.				
Type of binder	Epoxy				
Mixing Ratio	Base : Hardener = 85 : 15 (by volume)				
Color	Grey, Black, White, Red brown, Green, As specified colors				
Flash Point	Base : 23.5 °C, Hardener : 23.0 °C				
Solids by Volume	57% ± 2 (Test Method : ISO-3233)				
VOC	432 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	3.80 m ² /l [0.263 l/m ²] at D.F.T 150μm				
Wet Film Thickness	175 – 439 μm				
Dry Film Thickness	100 – 250 μm				
Drying Time (at D.F.T. 150μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	4.5 hrs.	3.5 hrs.	2.5 hrs.	1.5 hrs.
	Hard Dry	44 hrs.	27 hrs.	17 hrs.	12 hrs.
Painting Interval (at D.F.T. 150μm)	Minimum	44 hrs.	27 hrs.	17 hrs.	12 hrs.
	Maximum	-	-	-	-
Pot Life		24 hrs.	14 hrs.	8 hrs.	5 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 419-623			
	Paint output pressure	: 14.7 - 17.7 MPa			
Viscosity	: 1.5 - 2.0 Pa·s				
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.				
Preferable Subsequent Coats	EPICON MARINE HB, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 150 μ m)

Item		Temp (°C)	-5	0	5	10	15	20	25	30	35	40
Set to touch			-	-	4.5H	3.5H	3H	2.5H	2H	1.5H	1.2H	1H
Dry to recoat	Min.		-	-	44H	27H	21H	17H	14H	12H	10H	8H
	Max.		-	-	-	-	-	-	-	-	-	-
Dry to hard			-	-	44H	27H	21H	17H	14H	12H	10H	8H
Dry to immerse	Body		-	-	-	-	-	-	-	-	-	-
	Touch-up		-	-	-	-	-	-	-	-	-	-
Dry to Touch-up			-	-	44H	27H	21H	17H	14H	12H	10H	8H
Pot life			-	-	24H	14H	12H	8H	6H	5H	4H	3H
Shelf life (M)			-	-	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		Non-continuous: 100°C										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

In common with all epoxy coatings, BISCON HB-NT L will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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BISCON HB-NT L QD

(BC HB NT L QD)

PRODUCT DESCRIPTION

BISCON HB-NT L QD is a epoxy type paint.

It gives excellent physical properties such as adhesion, toughness and abrasion resistance and chemical resistance to water, salt water and crude oil.

In addition, it has excellent drying properties at low temperatures.

PRODUCT INFORMATION

Type	Epoxy type paint				
Recommended Use	Cargo hold, Inside and outside of accommodation space, Void space, Cofferdam, Engine room, Pipe line, Other steel structures, etc.				
Type of binder	Epoxy				
Mixing Ratio	Base : Hardener = 85 : 15 (by volume)				
Color	Grey, Black, White, Red brown, Green, As specified colors				
Flash Point	Base : 23.5 °C, Hardener : 23.0 °C				
Solids by Volume	57% ± 2 (Test Method : ISO-3233)				
VOC	428 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	3.80 m ² /l [0.263 l/m ²] at D.F.T 150 μ m				
Wet Film Thickness	175 – 439 μ m				
Dry Film Thickness	100 – 250 μ m				
Drying Time (at D.F.T. 150 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	2.5 hrs.	2 hrs.	1.5 hrs.	-
	Hard Dry	20 hrs.	16 hrs.	14 hrs.	-
Painting Interval (at D.F.T. 150 μ m)	Minimum	20 hrs.	16 hrs.	14 hrs.	-
	Maximum	-	-	-	-
Pot Life		20 hrs.	12 hrs.	6 hrs.	-
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: - 5 °C ~ 20 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 419 - 623			
	Paint output pressure	: 14.7 – 17.7 MPa			
Viscosity	: 1.5 - 2.0 Pa·s				
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.				
Preferable Subsequent Coats	EPICON MARINE HB, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 150 μ m)

Item	Temp (°C)	-5	0	5	10	15	20	25	30	35	40
		Set to touch		8H	5H	2.5H	2H	1.7H	1.5H	-	-
Dry to recoat	Min.	40H	33H	20H	16H	15H	14H	-	-	-	-
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		40H	33H	20H	16H	15H	14H	-	-	-	-
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		40H	33H	20H	16H	15H	14H	-	-	-	-
Pot life		36H	24H	20H	12H	10H	6H	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	-	-	-	-
Max. heat resistance	Non-continuous: 100°C										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

In common with all epoxy coatings, BISCON HB-NT L QD will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing of the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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ECOMAX Bi

(ECX Bi)

PRODUCT DESCRIPTION

ECOMAX Bi is a high build type epoxy modified coating.

It is suitable primer for special foul-release system "BIOCLEAR". It has the following advantages;

1. Excellent anti-corrosive property and salt/fresh water resistance
2. Excellent physical properties such as adhesion, abrasion resistance
3. High build type, therefore it is possible to reduce number of coatings
4. BIOCLEAR is able to apply on ECOMAX Bi directly

PRODUCT INFORMATION

Type	Epoxy Modified Paint, High Build					
Recommended Use	Plant or underwater environment steel structures, undercoat for concrete (underwater environment)					
Type of binder	Epoxy, Modified					
Mixing Ratio	Base : Hardener = 82 : 18 (by volume)					
Color	Light Grey, Grey					
Flash Point	Base : 22.0 °C, Hardener : 22.5 °C					
Solids by Volume	62% ± 2 (Test Method : ISO-3233)					
VOC	362 g/l (EPA Method24), 402 g/l (Korea Clean Air Conservation Act)					
Coverage(Theoretical)	2.07 m ² /l [0.484 l/m ²] at D.F.T 300 _{μm}					
Wet Film Thickness	484 μm					
Dry Film Thickness	300 μm					
Drying Time (at D.F.T. 300 _{μm})	Temperature	-	10 °C	20 °C	30 °C	
	Surface Dry	-	4 hrs.	3 hrs.	2 hrs.	
	Hard Dry	-	22 hrs.	16 hrs.	10 hrs.	
Painting Interval (at D.F.T. 300 _{μm})	Minimum	-	22 hrs.	16 hrs.	10 hrs.	
	Maximum	-	7 days	7 days	7 days	
Pot Life		-	8 hrs.	6 hrs.	4 hrs.	
Thinner	EPICON THINNER, EPOXY THINNER A					
Method of Application	Airless spray, Brush, Roller					
Condition of Application	Temperature	:	Minimum	10 °C		
	Humidity	:	Maximum	85 % R.H.		
	For Airless spray ;					
	Tip No.	:	GRACO 623, 723			
	Paint output pressure	:	14.7 – 17.7 MPa			
	Viscosity	:	2.0 - 2.5 Pa·s			
Preferable Preceding Coats	ECOMAX ZINC PRIMER, CERABOND 2000, etc.					
Preferable Subsequent Coats	BIOCLEAR Series, UNY MARINE Series, FLUOREX UNDERCOAT EP, FLUOREX FINISH, etc.					
Packaging	Two pack product					

TECHNICAL DATA (at 300 μ m)

Item		Temp (°C)	-5	0	5	10	15	20	25	30	35	40
Set to touch			-	-	-	4H	3.5H	3H	2.5H	2H	1.5H	1H
Dry to recoat	Min.		-	-	-	22H	18H	16H	12H	10H	8H	7H
	Max.		-	-	-	7D	7D	7D	7D	7D	7D	7D
Dry to hard			-	-	-	22H	18H	16H	12H	10H	8H	7H
Dry to immerse	Body		-	-	-	-	-	-	-	-	-	-
	Touch-up		-	-	-	-	-	-	-	-	-	-
Dry to Touch-up			-	-	-	22H	18H	16H	12H	10H	8H	7H
Pot life			-	-	-	8H	7H	6H	5H	4H	3H	2H
Shelf life (M)			-	-	-	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance (Dry)			100°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. Please use ECOMAX Bi QD Hardener below 10°C.
2. In common with all epoxy coatings, ECOMAX Bi will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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UMEGUARD SX

(UG SX)

PRODUCT DESCRIPTION

UMEGUARD SX, surface tolerant paint, is a epoxy type paint.

It gives excellent physical properties such as adhesion, toughness and abrasion resistance and chemical resistance to water, salt water and crude oil.

PRODUCT INFORMATION

Type	Surface tolerant anti-corrosive paint used primer and topcoat				
Recommended Use	Cargo hold, Inside and outside of accommodation space, Deck, Void space, Cofferdam, Engine room, Pipe line, Other steel structure, etc.				
Type of binder	Epoxy				
Mixing Ratio	Base : Hardener = 85 : 15 (by volume)				
Color	Grey, Black, White, Red brown, Green, etc				
Flash Point	Base : 23.5 °C, Hardener : 23.0 °C				
Solids by Volume	57% ± 2 (Test Method : ISO-3233)				
VOC	432 g/l (EPA Method24), 438 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	3.80 m ² /l [0.263 l/m ²] at D.F.T 150μm				
Wet Film Thickness	175 – 439 μm				
Dry Film Thickness	100 – 250 μm				
Drying Time (at D.F.T. 150μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	4.5 hrs.	3.5 hrs.	2.5 hrs.	1.5 hrs.
	Hard Dry	44 hrs.	27 hrs.	17 hrs.	12 hrs.
Painting Interval (at D.F.T. 150μm)	Minimum	44 hrs.	27 hrs.	17 hrs.	12 hrs.
	Maximum	-	-	-	-
Pot Life		24 hrs.	14 hrs.	8 hrs.	5 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 419-623			
	Paint output pressure	: 14.7 - 17.7 MPa			
Viscosity	: 1.5 - 2.0 Pa·s				
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.				
Preferable Subsequent Coats	BANNOH 1500R Z, EPICON MARINE HB, UNY MARINE Series, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 150 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	-	4.5H	3.5H	3H	2.5H	2H	1.5H	1.2H	1H
Dry to recoat	Min.	-	-	44H	27H	21H	17H	14H	12H	10H	8H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		-	-	44H	27H	21H	17H	14H	12H	10H	8H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	-	44H	27H	21H	17H	14H	12H	10H	8H
Pot life		-	-	24H	14H	10H	8H	6H	5H	4H	3H
Shelf life (M)		-	-	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance (Dry)		Non-continuous: 100 °C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

In common with all epoxy coatings, UMEGUARD SX will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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UMEGUARD SX QD

(UG SX QD)

PRODUCT DESCRIPTION

UMEGUARD SX QD, is a epoxy type paint.

It gives excellent physical properties such as adhesion, toughness and abrasion resistance and chemical resistance to water, salt water and crude oil.

In addition, it has excellent drying properties at low temperatures.

PRODUCT INFORMATION

Type	Surface tolerant anti-corrosive paint used primer and topcoat				
Recommended Use	Inside and outside of accommodation space, Deck, Void space, Cofferdam, Engine room, Pipe line, Other steel structure, etc.				
Type of binder	Epoxy				
Mixing Ratio	Base : Hardener = 85 : 15 (by volume)				
Color	Grey, Black, White, Red brown, Green, etc				
Flash Point	Base : 23.5 °C, Hardener : 23.0 °C				
Solids by Volume	57% ± 2 (Test Method : ISO-3233)				
VOC	428 g/l (EPA Method24), 438 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	3.80 m ² /l [0.263 l/m ²] at D.F.T 150μm				
Wet Film Thickness	175 – 439 μm				
Dry Film Thickness	100 – 250 μm				
Drying Time (at D.F.T. 150μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	2.5 hrs.	2 hrs.	1.5 hrs.	-
	Hard Dry	20 hrs.	16 hrs.	14 hrs.	-
Painting Interval (at D.F.T. 150μm)	Minimum	20 hrs.	16 hrs.	14 hrs.	-
	Maximum	-	-	-	-
Pot Life		20 hrs.	12 hrs.	6 hrs.	-
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: - 5 ~ 20 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 419-623			
	Paint output pressure	: 14.7 - 17.7 MPa			
	Viscosity	: 1.5 - 2.0 Pa·s			
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.				
Preferable Subsequent Coats	BANNOH 1500R Z, EPICON MARINE HB, UNY MARINE Series, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 150 μ m)

Item	Temp (°C)	-5	0	5	10	15	20	25	30	35	40
	Set to touch		8H	5H	2.5H	2H	1.7H	1.5H	-	-	-
Dry to recoat	Min.	40H	33H	20H	16H	15H	14H	-	-	-	-
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		40H	33H	20H	16H	15H	14H	-	-	-	-
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		40H	33H	20H	16H	15H	14H	-	-	-	-
Pot life		36H	24H	20H	12H	10H	6H	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	-	-	-	-
Max. heat resistance (Dry)	Non-continuous: 100°C										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

In common with all epoxy coatings, UMEGUARD SX QD will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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We do not guarantee the performance or safety of the Products when used for a purpose or use other than what is described herein. Nor will we be liable for any explanation or guarantee provided by any distributor or sales agent with respect to the Products, other than what is described in this Data Sheet.

Furthermore, each of the Products described herein is composed of various chemical substances, some of which may contain toxic and/or harmful ingredients and may cause harmful results as a result of misuse or overuse of the Products. For specific causes of risk, conditions of use, harmfulness, etc. of each of the Products, please carefully read, prior to use of the Products, the MSDS (Material Safety Data Sheet) inserted in each of the Products. We will not be liable for any accident that may be caused in violation thereof.

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BANNOH 5000

(B 5000)

PRODUCT DESCRIPTION

BANNOH 5000, is a multi-purpose solvent free epoxy which provides excellent physical and anti-corrosive properties. For ships it is ideally suited as a universal primer for most areas.

PRODUCT INFORMATION

Type	Solvent free epoxy coating				
Recommended Use	Anti-corrosive paint for ship's hull, exposed decks, superstructures, ballast water tanks, steel structures, & immersed areas etc.				
Type of binder	Pure Epoxy / Polyamide amine				
Mixing Ratio	Base : Hardener = 80 : 20 (by volume)				
Color	Light grey, Cream, Brown and specified colors				
Flash Point	Base : 141.0°C, Hardener : 145.0°C				
Solids by Volume	95% ± 2 (Test Method : ISO-3233)				
VOC	50 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	2.97 m ² /l [0.337 l/m ²] at D.F.T 320 μ m				
Wet Film Thickness	105 - 337 μ m				
Dry Film Thickness	100 - 320 μ m				
Drying Time (at D.F.T. 320 μ m)	Temperature	15°C	20°C	25°C	30°C
	Surface Dry	16 hrs.	9 hrs.	8 hrs.	5 hrs.
	Hard Dry	28 hrs.	16 hrs.	13 hrs.	10 hrs.
Painting Interval (at D.F.T. 320 μ m)	Minimum	28 hrs.	16 hrs.	13 hrs.	10 hrs.
	Maximum	14 days	14 days	14 days	14 days
Pot Life		90 mins.	80 mins.	70 mins.	60 mins.
Thinner	EPICON THINNER, EPOXY THINNER A (for cleaner)				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 10°C (Preferably 15°C)			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 415 - 731			
	Paint output pressure	: Min. 23.5 MPa			
Viscosity	: 2.5 - 3.0 Pa·s				
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.				
Preferable Subsequent Coats	BANNOH 1500 RZ, UNY MARINE Series, EPICON MARINE HB, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 320 μ m)

Item		Temp(°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	-	-	24H	16H	9H	8H	5H	4H	3H
Dry to recoat	Min.	-	-	-	40H	28H	16H	13H	10H	7H	5H
	Max.*)	-	-	-	14D	14D	14D	14D	14D	14D	14D
Dry to hard		-	-	-	40H	28H	16H	13H	10H	7H	5H
Dry to immerse	Body	-	-	-	6D	5D	4D	4D	3D	3D	3D
	Touch-up	-	-	-	4D	4D	3D	3D	2D	2D	2D
	Minor touch up	-	-	-	3D	3D	2D	2D	1D	1D	1D
Dry to Touch-up		-	-	-	28H	18H	12H	8H	7H	5H	4H
Pot life		-	-	-	100m	90m	80m	70m	60m	50m	40m
Shelf life / Base @ 25°C		18M									
Shelf life / Hardener @ 25°C		24M									
Max. heat resistance (Dry)		150°C									
Max. heat resistance (Wet)		Continuous: 60°C / Non-continuous: 75°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

*) For water ballast tank

Notes :

1. Pot life is short. Please mix only required amount.
2. For application in lower temperature conditions , it is recommended to facilitate the application by means of safely heating the paint and air. A viscosity adjustment may be made by heating each component and mixture.
3. In common with all epoxy coatings, BANNOH 5000 will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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BANNOH 5000 QD

(B 5000 QD)

PRODUCT DESCRIPTION

BANNOH 5000 QD, is a multi-purpose solvent free epoxy which provides excellent physical and anti-corrosive properties. For ships it is ideally suited as a universal primer for most areas.

PRODUCT INFORMATION

Type	Solvent free epoxy coating				
Recommended Use	Anti-corrosive paint for ship's hull, exposed decks, superstructures, ballast water tanks, steel structures, & immersed areas etc.				
Type of binder	Pure Epoxy / Modified aliphatic polyamine				
Mixing Ratio	Base : Hardener = 80 : 20 (by volume)				
Color	Light grey, Cream, Brown and specified colors				
Flash Point	Base : 161.0°C, Hardener : 119.0°C				
Solids by Volume	95% ± 2 (Test Method : ISO-3233)				
VOC	50 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	2.97 m ² /l [0.337 l/m ²] at D.F.T 320 μ m				
Wet Film Thickness	105 - 337 μ m				
Dry Film Thickness	100 - 320 μ m				
Drying Time	Temperature	5°C	10°C	15°C	20°C
(at D.F.T. 320μm)	Surface Dry	11 hrs.	6 hrs.	5 hrs.	4 hrs.
	Hard Dry	22 hrs.	15 hrs.	10 hrs.	8 hrs.
Painting Interval	Minimum	22 hrs.	15 hrs.	10 hrs.	8 hrs.
(at D.F.T. 320μm)	Maximum	14 days	14 days	14 days	14 days
Pot Life		60 mins.	50 mins.	40 mins.	30 mins.
Thinner	EPICON THINNER, EPOXY THINNER A (for cleaner)				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 0°C (Preferably 5°C)			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 415 - 731			
	Paint output pressure	: Min. 23.5 MPa			
Viscosity	: 2.5 - 3.0 Pa·s				
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.				
Preferable Subsequent Coats	BANNOH 1500 RZ, UNY MARINE Series, EPICON MARINE HB, etc				
Packaging	Two pack product				

TECHNICAL DATA (at 320 μ m)

Item		Temp(°C)	-5	0	5	10	15	20	25	30	35	40
		Temp(°C)	-5	0	5	10	15	20	25	30	35	40
Set to touch			-	18H	11H	6H	5H	4H	-	-	-	-
Dry to recoat	Min.		-	30H	22H	15H	10H	8H	-	-	-	-
	Max.*)		-	14D	14D	14D	14D	14D	-	-	-	-
Dry to hard			-	30H	22H	15H	10H	8H	-	-	-	-
Dry to immerse	Body		-	7D	6D	5D	4D	3D	-	-	-	-
	Touch-up		-	4D	3D	3D	2D	2D	-	-	-	-
	Minor touch up		-	3D	2D	2D	1D	1D	-	-	-	-
Dry to Touch-up			-	30H	20H	14H	9H	7H	-	-	-	-
Pot life			-	70m	60m	50m	40m	30m	-	-	-	-
Shelf life / Base @ 25°C			18M									
Shelf life / Hardener @ 25°C			24M									
Max. heat resistance (Dry)			150°C									
Max. heat resistance (Wet)			Continuous: 60°C / Non-continuous: 75°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

*) for water ballast tank

Notes :

- Pot life is short. Please mix only required amount.
- For application in lower temperature conditions , it is recommended to facilitate the application by means of safely heating the paint and air. A viscosity adjustment may be made by heating each component and mixture.
- Due to exothermic reaction, paint temperature may increase during and after mixing
- In common with all epoxy coatings, BANNOH 5000 will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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UMEGUARD SX HS

(UG SX HS)

PRODUCT DESCRIPTION

UMEGUARD SX HS, surface tolerant paint, is a modified epoxy paint.

It gives excellent physical properties such as adhesion, toughness and abrasion resistance.

It has excellent resistance to sea water and cathodic protection.

PRODUCT INFORMATION

Type	Modified anti-corrosive epoxy paint				
Recommended Use	Anti-corrosive paint for ship's bottom, cargo hold, inside and outside of accommodation space, Void space, Cofferdam, Engine room, Pipe line, Other steel structures, etc. For use at maintenance and repair.				
Type of binder	Epoxy, Modified				
Mixing Ratio	Base : Hardener = 81 : 19 (by volume)				
Color	Grey, Black, Red Brown, Green, etc				
Flash Point	Base : 29.2 °C, Hardener : 27.2 °C				
Solids by Volume	77% ± 2 (Test Method : ISO-3233)				
VOC	232 g/l (EPA Method24), 444 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.13 m ² /l [0.19 l/m ²] at D.F.T 150 μ m				
Wet Film Thickness	130 – 260 μ m				
Dry Film Thickness	100 – 200 μ m				
Drying Time (at D.F.T. 150 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	-	7 hrs.	3.5 hrs.	1.5 hrs.
	Hard Dry	-	28 hrs.	12 hrs.	6 hrs.
Painting Interval (at D.F.T. 150 μ m)	Minimum	-	28 hrs.	12 hrs.	6 hrs.
	Maximum	-	7 days	7 days	5 days
Pot Life	-	5 hrs.	3 hrs.	1.5 hrs.	
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 10 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 419-623			
	Paint output pressure	: 15 - 25 MPa			
Viscosity	: 1.5 - 2.0 Pa·s				
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.				
Preferable Subsequent Coats	BANNOH 1500R Z, EPICON MARINE HB, UNY MARINE Series, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 150 μ m)

Item	Temp (°C)	-5	0	5	10	15	20	25	30	35	40
		Set to touch	-	-	-	7H	4H	3.5H	2H	1.5H	1.2H
Dry to recoat	Min.	-	-	-	28H	20H	12H	9H	6H	5H	4H
	Max.	-	-	-	7D	7D	7D	7D	5D	5D	5D
Dry to hard		-	-	-	28H	20H	12H	9H	6H	5H	4H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	-	-	28H	20H	12H	9H	6H	5H	4H
Pot life		-	-	-	5H	4H	3H	2H	1.5H	1.2H	1H
Max. heat resistance (Dry)		100°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

In common with all epoxy coatings, UMEGUARD SX HS will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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UMEGUARD SX HS QD

(UG SX HS QD)

PRODUCT DESCRIPTION

UMEGUARD SX HS QD, surface tolerant paint, is a modified epoxy paint.

It gives excellent physical properties such as adhesion, toughness and abrasion resistance.

It has excellent resistance to sea water and cathodic protection.

PRODUCT INFORMATION

Type	Modified anti-corrosive epoxy paint				
Recommended Use	Anti-corrosive paint for ship's bottom, cargo hold, inside and outside of accommodation space, Void space, Cofferdam, Engine room, Pipe line, Other steel structures. For use at maintenance and repair.				
Type of binder	Epoxy, Modified				
Mixing Ratio	Base : Hardener = 81 : 19 (by volume)				
Color	Grey, Black, Red Brown, Green, etc				
Flash Point	Base : 29.2 °C, Hardener : 27.2 °C				
Solids by Volume	77% ± 2 (Test Method : ISO-3233)				
VOC	232 g/l (EPA Method24), 444 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.13 m ² /l [0.19 l/m ²] at D.F.T 150 μ m				
Wet Film Thickness	130 – 260 μ m				
Dry Film Thickness	100 – 200 μ m				
Drying Time (at D.F.T. 150 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	9 hrs.	4 hrs.	1.5 hrs.	
	Hard Dry	22 hrs.	12 hrs.	7 hrs.	
Painting Interval (at D.F.T. 150 μ m)	Minimum	22 hrs.	12 hrs.	7 hrs.	
	Maximum	7 days	7 days	7 days	
Pot Life		5 hrs.	3 hrs.	1.5 hrs.	
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: -5 ~ 20°C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 419-623			
	Paint output pressure	: 15 - 25 MPa			
	Viscosity	: 1.5 - 2.0 Pa·s			
Preferable Preceding Coats	CERABOND 2000, EPICON ZINC RICH PRIMER B-2, etc.				
Preferable Subsequent Coats	BANNOH 1500R Z, EPICON MARINE HB, UNY MARINE Series, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 150 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		18H	14H	9H	4H	2H	1.5H	-	-	-	-
Dry to recoat	Min.	50H	36H	22H	12H	10H	7H	-	-	-	-
	Max.	7D	7D	7D	7D	7D	7D	-	-	-	-
Dry to hard		50H	36H	22H	12H	10H	7H	-	-	-	-
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		50H	36H	22H	12H	10H	7H	-	-	-	-
Pot life		9H	7H	5H	3H	2H	1.5H	-	-	-	-
Max. heat resistance (Dry)		100°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

In common with all epoxy coatings, UMEGUARD SX HS QD will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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GALBON S-HB

(GB S-HB)

PRODUCT DESCRIPTION

GALBON S-HB is an alcohol soluble inorganic zinc paint based on a combination of ethyl silicate and selected zinc dust. It gives excellent protection against corrosion and prolonged weather resistance, and is highly resistant to oil and solvent as well as fresh and salt water. **GALBON S-HB** withstands temperature of up to 400°C. A film thickness of 50-100microns can be built in one application.

PRODUCT INFORMATION

Type	Inorganic zinc silicate alcohol soluble and self-curing, high-build type.					
Recommended Use	As a protective coating for oil tanks, solvent tanks, ballast tanks, outside hull, deck, heating pipes, holds, other steel structures, etc.					
Mixing Ratio	Base : Powder = 70 : 30 (by volume), 25 : 75 (by weight)					
Color	Grey					
Flash Point	Base : 14.5 °C		Powder : °C			
Solids by Volume	60% ± 2 (Test Method : ISO-3233)					
VOC	462 g/l (EPA Method24), 490 g/l (Korea Clean Air Conservation Act)					
Coverage(Theoretical)	8.00 m ² /l [0.125 l/m ²] at D.F.T 75µm					
Wet Film Thickness	83 – 125 µm					
Dry Film Thickness	50 – 75 µm					
Drying Time (at D.F.T. 75µm)	Temperature	0°C	5°C	10°C	20°C	30°C
	Surface Dry	90 min.	40 min.	30 min.	20 min.	10 min.
	Hard Dry	9 hrs.	6 hrs.	5 hrs.	4 hrs.	3 hrs.
Painting Interval/Organic paints (at D.F.T. 75µm)	Minimum	120 hrs.	72 hrs.	32 hrs.	24 hrs.	18 hrs.
	Maximum	-	-	-	-	-
Painting Interval / Itself (at D.F.T. 75µm)	Minimum	9 hrs.	6 hrs.	5 hrs.	4 hrs.	3 hrs.
	Maximum	-	-	-	-	-
Pot Life	18 hrs.	14 hrs.	10 hrs.	7 hrs.	5 hrs.	
Thinner	GALBON S-HB THINNER, INORGANIC SHOP PRIMER THINNER Series					
Method of Application	Airless spray, Brush(only for touch-up)					
Condition of Application	Temperature	: 0 - 50 °C				
	Humidity	: Maximum 85 % R.H.				
	For Airless spray ;					
	Tip No.	: GRACO 417, 419, 517, 519				
	Paint output pressure	: 9.8 MPa				
Viscosity	: 10 - 12 sec.(Ford Cup No.4)					
Preferable Preceding Coats	GALBON SP, CERABOND 2000					
Preferable Subsequent Coats	Any one of our products and/or the equivalent, e.g. Inorganic zinc paint, Epoxy paint					
Packaging	Two pack product					

* : Before cargo loading or ballasting after completion of painting, washing down of tank is necessary after 24hours curing time at least and then these curing time is required.

TECHNICAL DATA (at 75 μ m, 50% R.H)

Item		Temp (°C)		-5	0	5	10	15	20	25	30	35	40	
Set to touch				210m	90m	40m	30m	25m	20m	15m	10m	8m	5m	
Dry to hard				20H	9H	6H	5H	4.5H	4H	3.5H	3H	2.5H	2H	
For Organic Top coat	Dry to Recoat	Min.	G/S-HB	20H	9H	6H	5H	4.5H	4H	3.5H	3H	2.5H	2H	
			Organic	10D	5D	3D	32H	27H	24H	20H	18H	15H	13H	
			Organic (Underwater)	14D	14D	14D	10D	10D	7D	7D	7D	7D	7D	
		Max	G/S-HB	-	-	-	-	-	-	-	-	-	-	-
			Organic	-	-	-	-	-	-	-	-	-	-	-
			Organic (Underwater)	-	-	-	-	-	-	-	-	-	-	-
For PC	Dry to recoat	Min.	-	32H	24H	20H	18H	16H	13H	10H	8H	7H		
		Max	-	-	-	-	-	-	-	-	-	-		
	Dry to Immerse	Body coat*	-	10D	7D	3D	2.5D	2D	40H	36H	30H	24H		
		Touch up*	-	10D	7D	3D	2.5D	2D	40H	36H	30H	24H		
Pot life				28H	20H	14H	10H	8H	7H	6H	5H	4H	3H	
Shelf life (M)				6M	6M	6M	6M	6M	6M	6M	6M	6M	6M	
Max. heat resistance				Dry : 400°C, Immersion : continuous 60°C / Non-continuous 75°C										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- GALBON S-HB coating must not be exposed to acid and alkaline atmosphere.
- Agitate Base with a power agitator, then combine entire contents of Powder little by little and mix thoroughly by power agitator slowly. Then add appropriate thinner and mix thoroughly.
- During application, mixed paint should be stirred slowly and constantly to avoid zinc pigments settling.
- Don't add water. Water becomes the cause of rising viscosity and getting hard.
- To avoid dry spray, spray gun should be kept suitable distance from substrate surface.
- When humidity is below 50% RH, longer curing time is required.
- Mist coat is needed before application of subsequent coat(organic paint).
- In case an organic top coat is applied, dry film thickness of GALBON S-HB should be controlled at 50-100 microns.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes are contaminated, irrigate with water and seek medical advice immediately.

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EVAMAX 2000 F

(EX 2000 F)

PRODUCT DESCRIPTION

EVAMAX 2000 F is based on a combination of epoxy resin and special abrasive resistant agent.

It provides excellent characteristics in adhesion, toughness, impact, abrasive resistance and rust-prevention and scratch resistance. It is suitable for protection of exposed deck and holds of steel ships.

This product has FDA certificate for Dry foods.

PRODUCT INFORMATION

Type	Epoxy paint with abrasion resistant agent, high solid				
Recommended Use	Cargo hold				
Type of binder	Epoxy/Polyamide				
Mixing Ratio	Base : Hardener = 81 : 19 (by volume)				
Color	Light Grey, Red Brown				
Flash Point	Base : 32.8°C, Hardener :30.8°C				
Solids by Volume	78% ± 2 (Test Method : ISO-3233)				
VOC	223 g/l (EPA Method24), 350 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	3.90 m ² /l [0.256l/m ²] at D.F.T 200 μ m				
Wet Film Thickness	128 – 321 μ m				
Dry Film Thickness	100 – 250 μ m				
Drying Time (at D.F.T. 200 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	6 hrs.	4 hrs.	3 hrs.	2.5 hrs.
	Hard Dry	24 hrs.	17 hrs.	7 hrs.	4 hrs.
Painting Interval (at D.F.T. 200 μ m)	Minimum	24 hrs.	17 hrs.	7 hrs.	4 hrs.
	Maximum	10 days	10 days	10 days	10 days
Pot Life		2.5 hrs.	2 hrs.	1.5 hrs.	45 mins.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum -5°C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 419-623			
	Paint output pressure	: 15 - 25 MPa			
Viscosity	: 1.5 - 2.0 Pa·s				
Preferable Preceding Coats	CERABOND 2000, etc				
Preferable Subsequent Coats	-				
Packaging	Two pack product				

TECHNICAL DATA (at 200 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		22H	12H	6H	4H	3.5H	3H	2.5H	2.5H	2H	-
Dry to recoat	Min.	52H	36H	24H	17H	13H	7H	5H	4H	3H	-
	Max.	10D	10D	10D	10D	10D	10D	10D	10D	10D	-
Curing time to first cargo		37D	30D	25D	12D	7D	6D	5D	3D	3D	-
Dry to hard		52H	36H	24H	17H	13H	7H	5H	4H	3H	-
Dry to immerse	Body	16D	12D	10D	8D	7D	6D	5D	4D	3D	-
	Touch-up	15D	11D	9D	7D	6D	5D	4D	3D	2D	-
Pot life		12H	6H	2.5H	2H	2H	1.5H	1H	45min	30min	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	-
Max. heat resistance (Dry)		Non-continuous: 100°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. If this product is cured at low temperature(below 10°C), or immersed in water, discoloration(whitening) is created. This whitening is limited to the surface layer and the physical properties don't change.
2. Out of consideration to the relatively short pot life, please care the temperature of mixture, especially in summer time.
3. In common with all epoxy coatings, EVAMAX 2000 F will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SILICON HR PRIMER

(SN HR P)

PRODUCT DESCRIPTION

SILICON HR PRIMER is a silicon resin primer based on silicon resin with curing accelerator.

It has the following characteristics.

1. Excellent heat resistance (up to 700°C)
2. Excellent weathering resistance
3. Excellent application workability
4. Excellent adhesion property

PRODUCT INFORMATION

Type	Silicon resin heat resisting primer				
Recommended Use	As undercoat for boiler, Cylinder of engine, Inside of exhaust pipes, Radiator, Oil burner, etc.				
Type of binder	Silicon resin				
Mixing Ratio	Base : Curing accelerator = 100 : 1.53 (by volume)				
Color	White				
Flash Point	Base : 23.0°C Curing accelerator : 38.3°C				
Solids by Volume	41% ± 2 (Test Method : ISO-3233)				
VOC	527 g/l (Korea Air Conservation Act)				
Coverage(Theoretical)	16.40 m ² /l [0.061 l/m ²] at D.F.T 25μm				
Wet Film Thickness	61 μm				
Dry Film Thickness	25 μm				
Drying Time (at D.F.T. 25μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	1 hr.	50 min.	30 min.	20 min.
	Hard Dry	7 hrs.	5 hrs.	3 hrs.	1 hr.
Painting Interval (at D.F.T. 25μm)	Minimum	24 hrs.	20 hrs.	16 hrs.	10 hrs.
	Maximum	-	-	-	-
Pot Life		32 hrs	28 hrs	24 hrs	16 hrs
Thinner	RAVAX THINNER, SILICONE THINNER A				
Method of Application	Airless spray, Brush				
Condition of Application	Temperature	: Minimum 0 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 415			
	Paint output pressure	: 8.8 - 11.8 MPa			
	Viscosity	: 25 - 35 sec.(Ford Cup No. 4)			
Preferable Preceding Coats	-				
Preferable Subsequent Coats	SILICON HR, SILICON HR SILVER, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 25 μ m)

Item		Temp (°C)	-5	0	5	10	15	20	25	30	35	40
Set to touch			-	90m	60m	50m	40m	30m	25m	20m	15m	10m
Dry to recoat	Min.		-	28H	24H	20H	18H	16H	13H	10H	8H	6H
	Max.		-	-	-	-	-	-	-	-	-	-
Dry to hard			-	10H	7H	5H	4H	3H	2H	1H	0.8H	0.6H
Dry to immerse	Body		-	-	-	-	-	-	-	-	-	-
	Touch-up		-	-	-	-	-	-	-	-	-	-
Dry to Touch-up			-	10H	7H	5H	4H	3H	2H	1H	0.8H	0.6H
Pot life			-	36H	32H	28H	26H	24H	20H	16H	12H	8H
Shelf life (M)			-	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance			700°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. Paint film will reach full cure after 2 hours at 200 C. It should be heated gradually, e.g. by conducting steam into the steam pipe; do not heat abruptly until full cure.
2. Max. allowable DFT : Preferably less than 125 micron.
3. Agitate Base with a power agitator until it is turned homogeneous, and then combine entire contents of Curing Accelerator with Base and mix thoroughly with power agitator. Then add appropriate thinner and mix thoroughly.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SILICON HR BLACK

(SN HR BK)

PRODUCT DESCRIPTION

SILICON HR is a silicon heat resisting paint based on silicone resin pigmented with heat resisting pigment.

It has the following characteristics.

1. Excellent heat resistance(up to 700°C)
2. Excellent weather resistance
3. Excellent application workability
4. Excellent adhesion property

PRODUCT INFORMATION

Type	Silicone resin heat resisting paint				
Recommended Use	As finish coat for boiler, cylinder of engine, inside of exhaust pipes, radiator, oil burner, etc.				
Type of binder	Silicon resin				
Mixing Ratio	Base : Curing accelerator = 100 : 1.42 (by volume)				
Color	Black				
Flash Point	Base : 23.0°C		Curing accelerator : 38.3°C		
Solids by Volume	34% ± 2 (Test Method : ISO-3233)				
VOC	571g/l (Method24), 606 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	17.00 m ² /l [0.059 l/m ²] at D.F.T 20μm				
Wet Film Thickness	44 - 74 μm				
Dry Film Thickness	15 - 25 μm				
Drying Time (at D.F.T. 20μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	1 hr.	50 min.	30 min.	20 min.
	Hard Dry	7 hrs.	5 hrs.	3 hrs.	1 hr.
Painting Interval (at D.F.T. 20μm)	Minimum	24 hrs.	20 hrs.	16 hrs.	10 hrs.
	Maximum	-	-	-	-
Pot Life		32 hrs	28 hrs	24 hrs	16 hrs
Thinner	RAVAX THINNER, SILICONE THINNER A				
Method of Application	Airless spray, Brush				
Condition of Application	Temperature	: Minimum 0 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 415			
	Paint output pressure	: 8.8 - 11.8 MPa			
Viscosity	: 25 - 35 sec.(Ford Cup No. 4)				
Preferable Preceding Coats	SILICON HR PRIMER, *BANNOH 500 etc.				
Preferable Subsequent Coats	-				
Packaging	Two pack product				

*Kindly consult with CSP sales office. (For steam pipe)

TECHNICAL DATA (at 20 μ m)

Item		Temp (°C)	-5	0	5	10	15	20	25	30	35	40
Set to touch			-	120m	60m	50m	40m	30m	25m	20m	15m	10m
Dry to recoat	Min.		-	28H	24H	20H	18H	16H	14H	10H	8H	7H
	Max.		-	-	-	-	-	-	-	-	-	-
Dry to hard			-	10H	7H	5H	4H	3H	2H	1H	0.8H	0.6H
Dry to immerse	Body		-	-	-	-	-	-	-	-	-	-
	Touch-up		-	-	-	-	-	-	-	-	-	-
Dry to Touch-up			-	10H	7H	5H	4H	3H	2H	1H	0.8H	0.6H
Pot life			-	36H	32H	28H	26H	24H	20H	16H	12H	8H
Shelf life (M)			-	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance			700°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. Paint film will reach full cure after 2 hours at 200°C. It should be heated gradually, e.g. by conducting steam into the steam pipe; do not heat abruptly until full cure.
2. Max. allowable DFT : Preferably less than 125 micron.
3. Agitate Base with a power agitator until it is turned homogeneous, and then combine entire contents of Curing Accelerator with Base and mix thoroughly with power agitator. Then add appropriate thinner and mix thoroughly.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SILICON HR SILVER

(SN HR SIL)

PRODUCT DESCRIPTION

SILICON HR SILVER is a silicon heat resisting finish on inorganic zinc primer based on silicone resin pigmented with aluminum pigment.

It has the following advantages;

1. Excellent heat resistance. (up to 700 °C)
2. Excellent weather resistance
3. Excellent application workability
4. Excellent compatibility with inorganic zinc primer

PRODUCT INFORMATION

Type	Heat resisting silicone paint with aluminum				
Recommended Use	As a finish coat for Boiler, Cylinder of engine, the inside of exhaust pipes, Radiator, Oil burner, etc.				
Type of binder	Silicon resin				
Mixing rate	Base : Curing accelerator = 100 : 1.21 (by volume)				
Color	Silver				
Flash Point	Base : 22.3 °C		Curing accelerator : 38.3 °C		
Solids by Volume	28% ± 2 (Test Method : ISO-3233)				
VOC	647 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	14.00 m ² /l [0.071 l/m ²] at D.F.T 20μm				
Wet Film Thickness	54 - 71 μm				
Dry Film Thickness	15 - 20 μm				
Drying Time (at D.F.T. 20μm)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	60 min.	50 min.	30 min.	20 min.
	Hard Dry	7 hrs.	5 hrs.	3 hrs.	1 hr.
Painting Interval (at D.F.T. 20μm)	Minimum	24 hrs.	20 hrs.	16 hrs.	10 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, SILICON THINNER A				
Method of Application	Airless spray, Brush				
Condition of Application	Substrate Temperature	: Minimum 0 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 415			
	Paint output pressure	: 8.8 - 11.8 MPa			
Viscosity	: 10 - 20 sec.(Ford Cup No. 4)				
Preferable Preceding Coats	SILICON HR PRIMER				
Preferable Subsequent Coats	-				
Packaging	Two pack product				

TECHNICAL DATA (at 20 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	120m	60m	50m	40m	30m	25m	20m	15m	10m
Dry to recoat	Min.	-	28H	24H	20H	18H	16H	13H	10H	8H	6H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		-	10H	7H	5H	4H	3H	2H	1H	0.8H	0.6H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	10H	7H	5H	4H	3H	2H	1H	0.8H	0.6H
Pot life		-	36H	32H	28H	26H	24H	20H	16H	12H	8H
Shelf life (M)		-	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		700°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. Paint film will reach full cure after 2 hours at 200°C. It should be heated gradually, e.g. by conducting steam into the steam pipe; do not heat abruptly until full cure.
2. Max. allowable DFT : Preferably less than 125 micron
3. Agitate Base with a power agitator until it is turned homogeneous, and then combine entire contents of Curing Accelerator with Base and mix thoroughly with power agitator. Then add appropriate thinner and mix thoroughly.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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Furthermore, each of the Products described herein is composed of various chemical substances, some of which may contain toxic and/or harmful ingredients and may cause harmful results as a result of misuse or overuse of the Products. For specific causes of risk, conditions of use, harmfulness, etc. of each of the Products, please carefully read, prior to use of the Products, the MSDS (Material Safety Data Sheet) inserted in each of the Products. We will not be liable for any accident that may be caused in violation thereof.

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CERABEST

(CB)

PRODUCT DESCRIPTION

CERABEST is a heat resistant paint provides excellent heat resistance at ultra-high temperatures up to 800°C, causing no defects including discoloration, cracking or deterioration in the anticorrosive performance and adhesion properties. This product dries quickly at room temperature.

PRODUCT INFORMATION

Type	Ultra heat resistant paint				
Recommended Use	For prevention of burn through of the coating caused by hot work on the reverse side of the steel, for interiors of marine vessels. (accommodation areas, engine room, etc.)				
Type of binder	Ethyl silicate				
Mixing Ratio	Paste : Base = 52 : 48 (by volume)				
Color	Light Grey, Grey				
Flash Point	Paste : 13.6 °C, Base : 13.0 °C				
Solids by Volume	44% ± 2 (Test Method : ISO-3233)				
VOC	568 g/l (EPA Method24), 581 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	14.70 m ² /l [0.068 l/m ²] at D.F.T 30μm				
Wet Film Thickness	68 μm				
Dry Film Thickness	30 μm				
Drying Time (at D.F.T. 30μm)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	12 min.	8 min.	4 min.	2 min.
	Hard Dry	60 hrs.	48 hrs.	30 hrs.	15 hrs.
Painting Interval (at D.F.T. 30μm)	Minimum organic	14 days.	10 days	7 days	7 days
	Maximum	180 days	180 days	180 days	180 days
Pot Life		30 hrs.	24 hrs.	16 hrs.	10 hrs.
Thinner	CERABEST THINNER, INORGANIC SHOP PRIMER THINNER series				
Method of Application	Airless spray, Air spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 5 °C			
	Humidity	: 50 - 90 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 415 - 719			
	Paint output pressure	: 8.8 - 11.8 MPa			
	Viscosity	: 7 - 9sec (IWATA Cup No.2)			
Preferable Preceding Coats	Inorganic shop primer				
Preferable Subsequent Coats	Epoxy paint, Special alkyd primer, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 30 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	-	12m	8m	6m	4m	3m	2m	1.5m	1m
Dry to recoat	Min.(Organic)	-	-	14D	10D	8D	7D	7D	7D	6D	6D
	Max.	-	-	180D	180D	180D	180D	180D	180D	180D	180D
Dry to hard		-	-	60H	48H	38H	30H	22H	15H	12H	9H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	-	72H	48H	34H	24H	15H	8H	6H	5H
Pot life		-	-	30H	24H	20H	16H	13H	10H	8H	6H
Shelf life (M)		-	-	6M	6M	6M	6M	6M	6M	6M	6M
Max. heat resistance		Continuous : 400°C / Non-continuous : 800°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. After a thorough stirring of Paste, gradually add Base to Paste and mix until homogeneous.
2. Continue slow gentle stirring during application to avoid precipitation. Fast stirring will increase the viscosity of the mixture and may result in gelling.
3. The mixture should be used as soon as possible under high temperature and high humidity conditions. Do not leave the mixture for a long term.
4. The spray gun should not be held too far away to avoid dry spray.
5. Excessively thick paint film may result in cracking.
6. This product is preferably stored indoors avoiding rainfalls, high temperature/humidity conditions as the base component is moisture curing.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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GALVANITE No.200 PRIMER

(GNT 200P)

PRODUCT DESCRIPTION

GALVANITE No.200 PRIMER is a primer for galvanized steel surface based on a combination of epoxy resin and polyamide resin pigmented with special rust-preventing pigment.

It has the following advantages;

1. Excellent adhesion to galvanized surface
2. Excellent water resistance
3. Quick dry
4. Excellent compatibility with various type of subsequent coats

PRODUCT INFORMATION

Type	Epoxy primer				
Recommended Use	As a primer on galvanized steel				
Type of binder	Epoxy				
Mixing Ratio	Base : Hardener = 84 : 16 (by volume)				
Color	White				
Flash Point	Base : 17.5 °C, Hardener : 19.5 °C				
Solids by Volume	47% ± 2 (Test Method : ISO-3233)				
VOC	530 g/l (EPA Method24), 558 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	11.75 m ² /l [0.085 l/m ²] at D.F.T 40μm				
Wet Film Thickness	64 – 106 μm				
Dry Film Thickness	30 – 50 μm				
Drying Time (at D.F.T. 40μm)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	30 min.	20 min.	10 min.	5 min.
	Hard Dry	8 hrs.	6 hrs.	4 hrs.	3 hrs.
Painting Interval (at D.F.T. 40μm)	Minimum	18 hrs.	10 hrs.	4 hrs.	3 hrs.
	Maximum	90 days	60 days	30 days	30 days
Pot Life		36 hrs.	30 hrs.	24 hrs.	12 hrs.
Thinner	EPICON THINNER, EPOXY THINNER G				
Method of Application	Airless spray, Brush				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619, 719			
	Paint output pressure	: 10.8 - 13.7 MPa			
	Viscosity	: 55 - 65 sec.(Ford Cup No. 4)			
Preferable Preceding Coats	-				
Preferable Subsequent Coats	Various paint (except for inorganic type paint and polyurethane type paint)				
Packaging	Two pack product				

TECHNICAL DATA (at 40 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		60m	40m	30m	20m	15m	10m	7.5m	5m	4m	3m
Dry to recoat	Min.	40H	28H	18H	10H	7H	4H	3.5H	3H	2.5H	2H
	Max.	90D	90D	90D	60D	30D	30D	30D	30D	30D	30D
Dry to hard		14H	10H	8H	6H	5H	4H	3.5H	3H	2.5H	2H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		40H	28H	18H	10H	7H	4H	3.5H	3H	2.5H	2H
Pot life		50H	44H	36H	30H	27H	24H	18H	12H	10H	8H
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance (Dry)		150°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- BANNOH series is considered as undercoat for polyurethane coating.
Kindly consult CSP sales office.
- When temperature is at low temperature, curing/drying time will be longer.
(Preferable curing/drying temperature : above 5°C).
- In common with all epoxy coatings, GALVANITE No.200 PRIMER will show chalking and fading on exposure to UV.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry.
Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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GALVANITE No.400 PRIMER

(GNT 400P)

PRODUCT DESCRIPTION

GALVANITE No.400 PRIMER is a primer for galvanized steel surface based on a combination of epoxy resin and polyamide resin pigmented with special rust-preventing pigment.

1. Excellent adhesion to galvanized surface
2. Excellent application workability
3. Excellent compatibility with almost type of subsequent coats
4. Excellent resistance to oil and chemicals

PRODUCT INFORMATION

Type	Epoxy / polyamide resin paint				
Recommended Use	As a primer on galvanized steel.				
Type of binder	Epoxy / Polyamide				
Mixing Ratio	Base : Hardener = 69 : 31 (by volume)				
Color	White				
Flash Point	Base : 17.5 °C, Hardener : 26.3 °C				
Solids by Volume	47% ± 2 (Test Method : ISO-3233)				
VOC	482 g/l (EPA Method24), 533 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	11.75 m ² /l [0.085 l/m ²] at D.F.T 40μm				
Wet Film Thickness	64 – 106 μm				
Dry Film Thickness	30 – 50 μm				
Drying Time (at D.F.T. 40μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3.5 hrs.	2.5 hrs.	1.5 hrs.	1 hr
	Hard Dry	34 hrs.	24 hrs.	14 hrs.	10 hrs.
Painting Interval (at D.F.T. 40μm)	Minimum	34 hrs.	24 hrs.	14 hrs.	10 hrs.
	Maximum	14 days	10 days	7 days	6 days
Pot Life		34 hrs.	24 hrs.	14 hrs.	10 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A				
Method of Application	Airless spray, Brush				
Condition of Application	Temperature	: Minimum 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619, 719			
	Paint output pressure	: 10.8 - 13.7 MPa			
	Viscosity	: 55 - 65 sec.(Ford Cup No. 4)			
Preferable Preceding Coats	-				
Preferable Subsequent Coats	UNY MARINE Series, EPICON MARINE HB, etc.				
Packaging	Two pack product				

TECHNICAL DATA (at 40 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	-	3.5H	2.5H	2H	1.5H	1.5H	1H	1H	40m
Dry to recoat	Min.	-	-	34H	24H	18H	14H	12H	10H	8H	7H
	Max.	-	-	14D	10D	8D	7D	7D	6D	5D	4D
Dry to hard		-	-	34H	24H	18H	14H	12H	10H	8H	7H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	-	34H	24H	18H	14H	12H	10H	8H	7H
Pot life		-	-	34H	24H	18H	14H	12H	10H	8H	7H
Shelf life (M)		-	-	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance (Dry)		150°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

In common with all epoxy coatings, GALVANITE No.400 PRIMER will show chalking and fading on exposure to UV.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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RUST INHIBITIVE OIL "CK"

(CK)

PRODUCT DESCRIPTION

RUST INHIBITIVE OIL "CK", composed of a special petroleum resin and mineral spirit, provides temporary corrosion protection for fuel oil tanks. The coating dissolves in fuel oils without affecting oil quality at all.

PRODUCT INFORMATION

Type	Temporary rust-inhibiting primer				
Recommended Use	For temporary corrosion protection of fuel oil tanks.*				
Type of binder	Special Petroleum resin				
Color	Clear				
Flash Point	42.5 °C				
Solids by Volume	56% ± 2 (Test Method : ISO-3233)				
VOC	399 g/l (EPA Method24), 409 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	28.00 m ² /l [0.036 l/m ²] at D.F.T 20 μ m				
Wet Film Thickness	36 μ m				
Dry Film Thickness	20 μ m				
Drying Time (at D.F.T. 20 μ m)	Temperature	5 °C	10 °C	20 °C	30 °C
	Surface Dry	60 min.	30 min.	15 min.	5 min.
	Hard Dry	4 hrs.	2 hrs.	1 hr.	30 min.
Painting Interval (at D.F.T. 20 μ m)	Minimum	-	-	-	-
	Maximum	-	-	-	-
Thinner	MARINE THINNER				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 615, 717			
	Paint output pressure	: 10.7 – 13.8 MPa			
Viscosity	: 90 sec.(Ford Cup No.4)				
Preferable Preceding Coats	CERABOND 2000				
Preferable Subsequent Coats	-				
Packaging	One pack product				

* Kindly consult CSP sales office

TECHNICAL DATA (at 20 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		120m	90m	60m	30m	20m	15m	10m	5m	4m	3m
Dry to recoat	Min.	-	-	-	-	-	-	-	-	-	-
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		8H	6H	4H	2H	1.5H	1H	45m	30m	25m	20m
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	-	-	-	-	-	-	-	-	-
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance (Dry)		Non-continuous: 50 °C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SILVA SPAR

(SS)

PRODUCT DESCRIPTION

SILVA SPAR is based on oleoresin, pigmented with aluminum flake.

1. Excellent gloss and smooth surface and dirt free.
2. Good light reflection.
3. Good anti-corrosive property
4. Excellent working property.
5. Excellent heat resistance property.

PRODUCT INFORMATION

Type	Alkyd resin type aluminum paint				
Recommended Use*	As a coating on steel surface reaching high temperature. (Up to 150°C)				
Type of binder	Alkyd resin				
Color	Metallic Silver				
Flash Point	28.8 °C				
Solids by Volume	45% ± 2 (Test Method : ISO-3233)				
VOC	429 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	22.50 m ² /l [0.044 l/m ²] at D.F.T 20μm				
Wet Film Thickness	33 – 56 μm				
Dry Film Thickness	15 – 25 μm				
Drying Time (at D.F.T. 20μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	4 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	18 hrs.	12 hrs.	6 hrs.	3 hrs.
Painting Interval (at D.F.T. 20μm)	Minimum	30 hrs.	24 hrs.	15 hrs.	10 hrs.
	Maximum	-	-	-	-
Thinner	MARINE THINNER				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum 0 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 713, 715			
	Paint output pressure	: 10.7 - 13.8 MPa			
Viscosity	: 33 sec.(Ford Cup No. 4)				
Preferable Preceding Coats	ROSWAN QD HB, Alkyd resin based primer, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack				

Notes :

Kindly consult CSP sales office

TECHNICAL DATA (at 20 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		-	6H	4H	2H	1.5H	1H	1H	30m	30m	30m
Dry to recoat	Min	-	36H	30H	24H	20H	15H	12H	10H	10H	8H
	Max	-	-	-	-	-	-	-	-	-	-
Dry to hard		-	24H	18H	12H	8H	6H	4H	3H	2H	2H
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	36H	30H	24H	20H	15H	12H	10H	10H	8H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		-	18M	18M	18M	18M	18M	18M	18M	18M	18M
Max. heat resistance		150°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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EVASIGN No. 100

(EVA No. 100)

PRODUCT DESCRIPTION

EVASIGN No. 100 is modified alkyd paint, which has more brightness than other normal paints, and various vivid colors.

PRODUCT INFORMATION

Type	Modified alkyd resin fluorescence finish paint				
Recommended Use	As a finishing coat for safety marking				
Type of binder	Modified alkyd resin				
Color	Red, Orange, Yellow, Green				
Flash Point	40.8 °C				
Solids by Volume	53% ± 2 (Test Method : ISO-3233)				
VOC	445 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	13.25 m ² /l [0.075 l/m ²] at D.F.T 40μm				
Wet Film Thickness	75 μm				
Dry Film Thickness	40 μm				
Drying Time (at D.F.T. 40μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	1 hr.	40 min.	30 min.	20 min.
	Hard Dry	18 hrs.	7 hrs.	4 hrs.	3 hr.
Painting Interval (at D.F.T. 40μm)	Minimum	24 hrs.	8 hrs.	2 hrs.	1.5 hrs.
	Maximum	-	-	-	-
Thinner	MARINE THINNER				
Method of Application	Airless spray, Brush				
Condition of Application	Temperature	: Minimum 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 615, 715			
	Paint output pressure	: 10.7 – 13.8 MPa			
Viscosity	: 100 - 120 sec.(Ford Cup No. 4)				
Preferable Preceding Coats	EVAMARINE				
Preferable Subsequent Coats	-				
Packaging	One pack product				

Notes :

1. It is necessary to hide the substrate color with the preceding coats.
2. To avoid the wrinkling and to maintain weather resistance, keep the recommended DFT. Two times coat is recommended. (White or light color is considered as preferable preceding coat.)
3. Slight color change can be expected after climatic exposure.

TECHNICAL DATA (at 40 μ m)

Item		Temp (°C)	-5	0	5	10	15	20	25	30	35	40
Set to touch			-	-	1H	40m	35m	30m	25m	20m	20m	15m
Dry to recoat	Min.		-	-	24H	8H	4H	2H	2H	1.5H	1.5H	1H
	Max.		-	-	-	-	-	-	-	-	-	-
Dry to hard			-	-	18H	7H	5H	4H	3.5H	3H	2.5H	2H
Dry to immerse	Body		-	-	-	-	-	-	-	-	-	-
	Touch-up		-	-	-	-	-	-	-	-	-	-
Dry to Touch-up			-	-	24H	16H	11H	2H	2H	1.5H	1.5H	1H
Pot life			-	-	-	-	-	-	-	-	-	-
Shelf life (M)			-	-	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance (Dry)		50°C (Non-continuous)										

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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BONDET PUTTY

(BP)

PRODUCT DESCRIPTION

BONDET PUTTY, based on epoxy resin and polyamide resin combination, has excellent physical properties such as adhesion, impact and abrasion resistance, etc., and chemical resistance to salt water, oil, alkalis and dilute acids, and is suitable for putty of tank interiors and underwater areas.

PRODUCT INFORMATION

Type	Epoxy putty				
Recommended Use	As protective coating against galvanic corrosion around the anode, and touching up of pitting corrosion occurring on exterior hull and tank inside.				
Type of binder	Epoxy/Polyamide resin				
Mixing Ratio	Base : Hardener = 50 : 50 (by volume)				
Color	Grey				
Flash point	Base : - °C, Hardener : - °C				
Solids by Volume	100% (theoretical)				
VOC	29 g/l (EPA Method24), 33 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	0.50 m ² /l [2.00 l/m ²] at D.F.T 2000 μm				
Wet Film Thickness	2,000 μm				
Dry Film Thickness	2,000 μm				
Drying Time (at D.F.T. 2000 μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	7 hrs.	5 hrs.	3 hrs.	2 hrs.
	Hard Dry	26 hrs.	18 hrs.	8 hrs.	5 hrs.
Painting Interval (at D.F.T. 2000 μm)	Minimum	14 hrs.	10 hrs.	6 hrs.	4 hrs.
	Maximum	10 days	7 days	4 days	2 days
Pot Life		8 hrs.	6 hrs.	3 hrs.	2 hrs.
Thinner	EPICON THINNER, EPOXY THINNER A (for Cleaning)				
Method of Application	Spatula				
Condition of Application	Temperature	: Minimum	5 °C		
	Humidity	: Maximum	85 % R.H.		
	For Airless spray ;				
	Tip No.	:-			
	Paint output pressure	:-			
	Viscosity	:-			
Preferable Preceding Coats	-				
Preferable Subsequent Coats	Epoxy paint				
Packaging	Two pack product				

TECHNICAL DATA (at 2,000 μ m)

Item		Temp (°C)	-5	0	5	10	15	20	25	30	35	40
Set to touch			-	-	7H	5H	4H	3H	3H	2H	2H	2H
Dry to recoat	Min.		-	-	14H	10H	8H	6H	5H	4H	4H	3H
	Max.		-	-	10D	7D	5D	4D	3D	2D	2D	2D
Dry to hard			-	-	26H	18H	12H	8H	6H	5H	4H	3H
Dry to immerse	Body		-	-	-	-	-	-	-	-	-	-
	Touch-up		-	-	-	-	-	-	-	-	-	-
Dry to Touch-up			-	-	14H	10H	8H	6H	5H	4H	4H	3H
Pot life			-	-	8H	6H	4.5H	3H	2.5H	2H	1.5H	1H
Shelf life (M)			-	-	18M	18M	18M	18M	18M	18M	18M	18M
Max. heat resistance			120°C									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

1. Knead Base and Hardener thoroughly until color is turned homogeneous.
2. In common with all epoxy coatings, BONDET PUTTY will show chalking and fading on exposure to UV light.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

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NON-SKID SAND

(NS)

PRODUCT DESCRIPTION

NON-SKID SAND is silica sand which is silicone dioxide.

It is used for non-skid system to give safety of passage way on deck.

It can be used with finish coats like EPICON MARINE HB and UNY MARINE.

PRODUCT INFORMATION

Type	Silicone Dioxide				
Recommended Use	Passage way on deck				
Type of binder	Silica sand				
Mixing Ratio	For EPICON MARINE HB and UNY MARINE 5.6kg / 15Lt of Mixture 1.95kg/ 4Lt of Mixture				
Color	-				
Flash Point	-°C				
Solids by Volume	100 % (Test Method : ISO-3233)				
VOC	0 g/l (EPA Method24), 0 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	- m ² /l [- l/m ²]				
Particle size	400 ~ 600 μ m				
Dry Film Thickness	- μ m				
Drying Time *)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	-	-	-	-
	Hard Dry	-	-	-	-
Painting Interval *)	Minimum	-	-	-	-
	Maximum	-	-	-	-
Thinner					
Method of Application	Spread by hands				
Condition of Application	Temperature	: Minimum	-5 °C		
	Humidity	: Maximum	85 % R.H.		
	For Airless spray ;				
	Tip No.	:-			
	Paint output pressure	:-			
	Viscosity	:-			
Preferable Preceding Coats	EPICON MARINE HB, UNY MARINE Series, etc.				
Preferable Subsequent Coats	EPICON MARINE HB, UNY MARINE Series, etc.				
Packaging	Three pack product				

Note *)

Drying time and recoating interval depend on used type of paints.

Please refer to data of EPICON MARINE HB and UNY MARINE.

TECHNICAL DATA

Item	Temp (°C)	-5	0	5	10	15	20	25	30	35	40
	Set to touch		-	-	-	-	-	-	-	-	-
Dry to recoat	Min.	-	-	-	-	-	-	-	-	-	-
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		-	-	-	-	-	-	-	-	-	-
Dry to immerse	Body	-	-	-	-	-	-	-	-	-	-
	Touch-up	-	-	-	-	-	-	-	-	-	-
Dry to Touch-up		-	-	-	-	-	-	-	-	-	-
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		24M	24M	24M	24M	24M	24M	24M	24M	24M	24M
Max. heat resistance (Dry)											

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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SEAFLO NEO SL Z PLUS

(SFL N SL Z PL)

PRODUCT DESCRIPTION

SEAFLO NEO SL Z PLUS is a high-performance hydrolysis antifouling based on a special silyl methacrylate polymer providing long-term antifouling protection, ultra low friction and reduced fuel consumption.

This antifouling has been designed to provide protection during extend static periods.

PRODUCT INFORMATION

Type	Ultra low friction, special silyl methacrylate polymer type hydrolysis antifouling paint				
Recommended Use	Antifouling paint for underwater hulls of steel ships with extended dry-docking intervals.				
Type of binder	Special silyl methacrylate polymer				
Color	Brown, Light Brown				
Flash Point	23.2 °C				
Solids by Volume	56% ± 2 (Test Method : ISO-3233)				
VOC	402 g/l (EPA Method24), 438 g/l (Korea Clean Air Conservation Act)				
Coverage(Theoretical)	5.60 m ² /l [0.179 l/m ²] at D.F.T 100μm				
Wet Film Thickness	134 – 295 μm				
Dry Film Thickness	75 – 165 μm				
Drying Time (at D.F.T. 100μm)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100μm)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100μm)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 619 ~ 723			
	Paint output pressure	: 11.7 – 14.7 MPa			
	Viscosity	: 1.5 - 2.5 Pa·s			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		8H	5H	3H	2H	1.5H	1H	1H	30m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4H	4H	3H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Shelf life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

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We do not guarantee the performance or safety of the Products when used for a purpose or use other than what is described herein. Nor will we be liable for any explanation or guarantee provided by any distributor or sales agent with respect to the Products, other than what is described in this Data Sheet.

Furthermore, each of the Products described herein is composed of various chemical substances, some of which may contain toxic and/or harmful ingredients and may cause harmful results as a result of misuse or overuse of the Products. For specific causes of risk, conditions of use, harmfulness, etc. of each of the Products, please carefully read, prior to use of the Products, the MSDS (Material Safety Data Sheet) inserted in each of the Products. We will not be liable for any accident that may be caused in violation thereof.

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SEAFLO NEO CF PREMIUM EX

(SFL N CF P EX)

PRODUCT DESCRIPTION

SEAFLO NEO CF PREMIUM EX is a high performance antifouling incorporating a new biocide technology with a special synthetic agent developed in a pharmacological mode of action combined with a zinc acrylate polymer. This antifouling has been designed as a premium solution for vessels trading at a wide range of speed and activity, where the main focuses are long term hull performance, reducing hull resistance and fuel saving by maintaining an optimum leached layer.

PRODUCT INFORMATION

Type	Zinc acrylate polymer type antifouling paint				
Recommended Use	Antifouling paint for the underwater hulls of steel ships for world-wide service and with extended dry-docking interval.				
Type of binder	Zinc acrylate polymer				
Color	Red, Light Red				
Flash Point	24.5 °C				
Solids by Volume	50% ± 2 (Test Method : ISO-3233)				
VOC	428 g/l(EPA Method24), 442 g/l(Korean Clean Air Conservation Act)				
Coverage(Theoretical)	5.00 m ² /l [0.200 l/m ²] at D.F.T 100 μ m				
Wet Film Thickness	150 – 330 μ m				
Dry Film Thickness	75 – 165 μ m				
Drying Time (at D.F.T. 100 μ m)	Temperature	5°C	10°C	20°C	30°C
	Surface Dry	3 hrs.	2 hrs.	1 hr.	30 min.
	Hard Dry	12 hrs.	8 hrs.	5 hrs.	4 hrs.
Painting Interval (at D.F.T. 100 μ m)	Minimum	12 hrs.	8 hrs.	5 hrs.	4 hrs.
	Maximum	-	-	-	-
Dry to Launch (at D.F.T. 100 μ m)	Minimum	18 hrs.	12 hrs.	10 hrs.	9 hrs.
	Maximum	-	-	-	-
Thinner	RAVAX THINNER, CR/ACRI THINNER A				
Method of Application	Airless spray, Brush, Roller				
Condition of Application	Temperature	: Minimum - 5 °C			
	Humidity	: Maximum 85 % R.H.			
	For Airless spray ;				
	Tip No.	: GRACO 621 ~ 735			
	Paint output pressure	: 11.7 – 14.7 MPa			
	Viscosity	: 1.5 - 2.5 Pa·s			
Preferable Preceding Coats	BANNOH 1500 R Z, SILVAX SQ-K, CMP AC-10, etc.				
Preferable Subsequent Coats	-				
Packaging	One pack product				

TECHNICAL DATA (at 100 μ m)

Item		Temp (°C)									
		-5	0	5	10	15	20	25	30	35	40
Set to touch		6H	4H	3H	2H	1.5H	1H	1H	30m	30m	30m
Dry to recoat	Min.	22H	16H	12H	8H	6H	5H	4.5H	4H	3H	3H
	Max.	-	-	-	-	-	-	-	-	-	-
Dry to hard		22H	16H	12H	8H	6H	5H	4.5H	4H	3H	3H
Dry to immerse*)	Body	42H	30H	18H	12H	11H	10H	9H	9H	8.5H	8H
	Touch-up	36H	24H	14H	12H	10H	8H	8H	7.5H	7H	6H
Dry to Touch-up		22H	16H	12H	8H	6H	5H	4H	4H	3H	3H
Pot life		-	-	-	-	-	-	-	-	-	-
Self life (M)		12M	12M	12M	12M	12M	12M	12M	12M	12M	12M
Max. heat resistance		60°C (Non-continuous)									

Abbreviation ; Y : Year, M : Month, D : Day, H : Hour, m : Minute

Notes :

- *) If applied anti-fouling coat is higher than above the recommended DFT or number of coat is two or more, the dry time to be immersed is necessary to be longer for physical resistance, flooding and sailing.
- For the expectations of performance for this product in static conditions, it is necessary to consider location conditions such as fouling activity, water temperatures, and pollution level. For more information please consult a CMP office or representative.
- Slight color variation can be expected after immersion and climatic exposure.

RECOMMENDABLE SURFACE PREPARATION

All surfaces to be free from various contaminants (oil, grease, dust, spray dust and etc.) and keep surfaces dry. Kindly consult CSP sales office for specific information.

SAFETY PRECAUTIONS

In order to ensure safe use of our product, please be sure to follow the safety precautions indicated on the SDS and the paint container. If you need further explanation, do not hesitate to consult our personnel or our local distributors before buying, opening, using, or disposing the product. Since product contains flammable materials, keep away from sparks and open flame. No smoking should be permitted in the area on painting.

Wear an appropriate protector (eye and face protection, protective clothing, barrier creams, etc) when mixing, applying, or drying the paint. If products come into contact with the skin, wash thoroughly with warm water and soap or suitable cleaner. If the eyes is contaminated, irrigate with water and seek medical advice immediately.

DISCLAIMER

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