

# 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

<b>Type</b>	Polyurethane finish paint				
<b>Recommended Use</b>	Glossy finish coat on outside of superstructure, deck and fittings.				
<b>Type of binder</b>	Acryl polyol / Isocyanate resin				
<b>Mixing Ratio</b>	Base : Hardener = 80 : 20 (by volume)				
<b>Color</b>	White, As specified				
<b>Flash Point</b>	Base : 23.0 °C, Hardener : 29.5 °C				
<b>Solids by Volume</b>	51% ± 2 (Test Method : ISO-3233)				
<b>VOC</b>	446 g/l (Korea Clean Air Conservation Act)				
<b>Coverage(Theoretical)</b>	10.20 m <sup>2</sup> /l [0.098 l/m <sup>2</sup> ] at D.F.T 50 $\mu$ m				
<b>Wet Film Thickness</b>	59 - 98 $\mu$ m				
<b>Dry Film Thickness</b>	30 - 50 $\mu$ m				
<b>Drying Time</b> (at D.F.T. 50 $\mu$ 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.
<b>Painting Interval</b> (at D.F.T. 50 $\mu$ m)	Minimum	8 hrs.	6 hrs.	4 hrs.	2 hrs.
	Maximum	-	-	-	-
<b>Pot Life</b>		24 hrs.	20 hrs.	16 hrs.	8 hrs.
<b>Thinner</b>	UNY MARINE THINNER, URETHANE THINNER A				
<b>Method of Application</b>	Airless spray, Brush, Roller				
<b>Condition of Application</b>	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)			
<b>Preferable Preceding Coats</b>	BANNOH Series, UNIVAN HS PRIMER, EPICON MARINE UNDERCOAT M, etc.				
<b>Preferable Subsequent Coats</b>	-				
<b>Packaging</b>	Two pack product				

**TECHNICAL DATA (at 50 $\mu$ m)**

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

**DISCLAIMER**

The information, including data, specifications, directions and recommendations, contained in this Data Sheet describes the experiment results under controlled or specially defined conditions and we do not guarantee that the Products, when used under the actual conditions of any intended use, will produce the same results. The performance of the Products in their actual use is affected by various factors, and the User must judge whether the Products are suitable for specific uses. We do not guarantee the performance of the Products under any specific operation environment other than the performance of the Products under the conditions described in this Data Sheet.

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.

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