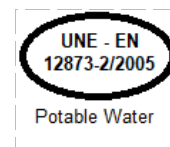


GlobalDur GN101 Epoxy Primer



TECHNICAL DATA SHEET



Epoxy Primer Solvent-free Converter/Inhibitor/Moisture Tolerant for Low Temperature and Potable Water

PRODUCT DESCRIPTION	◆ GlobalDur GN101EP is an excellent epoxy/amine two pack anticorrosive solvent free primer for steel. Can also be applied over concrete and on one coat. ◆ GlobalDur GN101EP is an excellent primer specially design to cure at very low temperatures. ◆ GlobalDur GN101EP is a primer specially design to be applied over well tightly adherent rust and moisture or dry surfaces. ◆ GlobalDur GN101EP is a primer specially design for excellent performances on hydroblasted prepared surfaces. ◆ GlobalDur GN101EP can be applied as a primer, intermediate or finish (however may have slight colour differences due to its particular properties). ◆ GlobalDur GN101EP_3/1 is a version of 3/1 by volume design for easy application on plural airless equipment.	
PERFORMANCES	• Excellent anticorrosion performance allying conversion and inhibitor properties; • Suitable for coating surfaces for potable water tanks and pipelines; • Dual Function- can be applied as primer/intermediate/finish coat (in areas with no epoxy flouring requirements) ; • No humidity/dew point restrictions; • Curing temperature until -10°C (14°F); • Fast overcoating time (3 hours/30°C) and operation time (48hours/30°C) for immersion conditions. • Excellent resistance to wearing and impact; • High film thickness- coating system on one coat with 625 microns (25 mils). • No surface profile needed; • Absence of health harm solvents; • Excellent adhesion to substrate and between coats; • Surface preparation cost reduction; • Excellent edge retention over 70%; • Good chemical resistance.	
RECOMMENDED USE	PRIMER/INTERMEDIATE/FINISH OVER STEEL MARINE: Potable water and ballast tanks, fuel/crude oil tanks, decks, bilge and void areas, double bottoms, rigs, offshore platforms, etc.. PROTECTIVE: Potable water tanks, bridges, machinery, railroad cars, metallic structures, lead and other coatings covered structures, interior/exterior of fuel and water pipe lines.	
APPROVALS	Certified for potable water accordingly UNE-EN ISO 12873-2 and ANSI/AWWA C210-15. Complies with ISO 12944, as being suitable for coating systems until C5-M, Im3 and systems for environment of corrosivity category CX e IM-4(off-shore).	
COMPONENT A	COMPONENT B	COLOURS
GN101EP	H101EP	GN101EPG7000 (Light Grey), GN101EPG3009 (Red Iron Oxide),

GlobalDur GN101 Epoxy Primer



GN101EPNCS0530R80B (light blue), GN101EPR9010 (Offwhite). For other colours, please contact GlobalNavy's office.

Physical Properties

GLOSS	Glossy.
SOLIDS BY VOLUME	100 % (theoretical).
VOC*	EU Legislation: 30 g/L Chinese Regulation GB30981: 34g/L
FLASH POINT	> 121°C (> 250°F) (ISO 2719)
PHYSICAL PROPERTIES	

Application

SURFACE PREPARATION	Painting Direct to Metal: GlobalDur GN101EP, is suitable for surfaces prepared by hydroblasting, grit blasting (dry or wet) and mechanical, accordingly with the following standards: Grit Blasting: SA2 (ISO 8501-1:2007) Wet Blasting: WAB-6 M (NACE 6G198, NACE Vis 9) Hydroblasting: Wj2-M (SSPC SP12 – VIS4(I) / NACE N°5- N°7) Mechanical Means: St3 (ISSO 8501-1:2007) Apart from the surface preparation method, the moisture tolerance of GlobalDur GN101EpoxyPrimer allow the surface to be washed with tap water before painting, ensuring a final lower salts level. By this way, it is possible to achieve a non visual standard SC2 (NACE 5 / SSPC-SP12). The rust tolerance of GlobalDur GN101EpoxyPrimer allow a painting with a flash rust until M degree (standard SSPC VIS4(I) / NACE N°7). The anti corrosive performance over na ST3 surface, followed by degreasing and surface wash is however not so good as the other surface preparation methods. Over coated surfaces be sure of the old coating conditions (no coating defects and corrosion- in "sound conditions") and the compatibility with the GlobalDur GN101EP. Please contact GlobalNavy office in case of any doubt or for further information.
APPLICATION METHOD	SPRAY: Use air less spray. Use an equipment with a compressing 60:1 ratio, an inlet 4,5 bar pressure, allowing a 240-310 bar outlet pressure. A 0,019" or 0,0 23" tip is recommended. For GN101EP 3/1 Version, plural equipment is recommended for reduce losses on product consumption. Conventional spray equipment only on special application conditions- contact GlobalNavy for more information. CONVENTIONAL METHODS: Brush and roller are suitable for "stripe-coat" and small areas, care should be taken in order to achieve the DFT specified. When applying on enclosed areas ensure a good ventilation. It is not necessary to use dehumidification equipment: GlobalDur GN101EP can be applied on dry or wet surfaces, even with 100% humidity and surface temperatures below the dew point.
APPLICATION CONDITIONS	The substrate temperature shall be -10°-+50°C. The ambient temperature shall be >-10°C and moisture >12%. There is no dew point restrictions. However the surface must be without ice.
APPLICATION DATA	GlobalDur GN101 EpoxyPrimer, is a two pack product, so the base and hardener must be mixed on the right ratio. First, mix well component A during 2 minutes. After that, add all the hardener and stir very well until it get homogeneous. Only if necessary, for a application adjustment, the product can be diluted until 5 % (v/v) with GN001TH. Mix completely both quantities of component A and B packs.

GlobalDur GN101 Epoxy Primer



For GN101EP_3/1 version, when using plural equipment, mix each component before use it or every after 24 hours.

MIX RATIO	4,3 / 1 (by Weight) 3,3 / 1 (by Volume)
HARDENER	H101EP
POT LIFE	1 hour (23°C).
THINNER	GN001TH/GN003TH
SOLVENT / CLEANER	GN003TH
DRY TIME	Surface dry: 2 hours at 30°C (86°F); 3 hours at 23°C (73°F); 24 hours at -10°C (+14°F). Dry to recoat: Min: 3 hours at 30°C (86°F); 4 hours at 23°C (73°F); 24 hours at -10°C (+14°F). Max: 3 days at 30°C (86°F); 7 days at 23°C (73°F); 10 days at -10°C (+14°F).
THEORETICAL COVERAGE	6.6 Sq.m/Lt. (268,62 Sq.ft/US gal - Dry/Wet: 150 microns (6 mils)
TYPICAL PAINT SYSTEM	• GlobalDur GN101EP 2 x 200µm (DFT). This is a system for a tank on water immersion conditions. Please contact GlobalNavy for other applications.
STORAGE	4 years (storage on the original tightly closed containers in a dry, cool, well ventilated space, at temperatures between 5°C - 40°C).
PACKING	Two pack product, available in packs (A+B) 1 L, 5 L and 20 L. For GN101EP_3/1 version available also in 700 L.
FURTHER INFORMATION	The conventional air spray is only possible with a much higher dilution ratio, so it only should be used on special applications. If exact colour matching is required, ensure that GN101EP in each area is applied from the same control batch numbers.
HEALTH SAFETY	Please take the necessary measures in order to accomplish the national laws and regulations regarding the environmental, health and safety at work. Please observe the safety information displayed on the container. Please refer to the Safety Data Sheet for detailed information on the health, safety hazards and precautions for the use of this product.

The information on this data sheet is given to the best of our knowledge based on laboratory testing and practical experience. This is not a specification and all information is given in good faith. Every values presented as Theoretical were calculated from the product formula, so can have deviation from laboratory measurements using standard methods that may be not applicable. However, since the product can be used under conditions beyond our control, the manner of use is the sole responsibility of the user. The product is intended for professional use only. Manufacturer does not assume any liability in connection with the use of the product relative to coverage, performance or injury. This Technical Data Sheet content can be changed without notice.

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GlobalDur GN101 - Additional Information							
CURING TIME TABLE							
GN101EP		0°C	5°C	10°C	20°C	25°C	30°C
Pot Life		220 minutes	160 minutes	120 minutes	60 minutes	40 minutes	25 minutes
Dry to touch (Max.)		24 h	20 h	16 h	4 h	3,5 h	2 h
Foot traffic		48 h	32 h	24 h	20 h	18 h	12 h
Recoating period	Min.	48 h	24 h	16 h	4 h	4 h	3 h
	Max.	16 days	12 days	7 days	7 days	5 days	3 days

PHYSICAL PROPERTIES - Globalnavy R&D Laboratory

Adhesion - Pull Off (ASTM D4541/ISSO 4624)	Wet surface: 120 Kg/cm ² (1706 psi) Dry surface: 170 Kg/cm ² (2417 psi)
Abrasion Strength (ASTM D4060)	60 mg (1000 cycles / 1000 g / CS10)
Tensile (ASTM D638)	> 16 Mpa
Barcol Resistance (ASTM D2583)	28
Elasticity Modulus (ISO/R 527)	100,000 KgF/cm ²
Salt spray resistance (ASTM B117)	Without defects - 4000 hours
Fuel compatibility (EI standard 1541)	Pass.
Fuel color	Saybolt color change ≤1 - Pass (Máx. allowed- 2).
Humidity (ASTM D2247)	Without defects
Minimum - Maximum elongation (ISO/R 527)	3% - 12%
Compressive Strength (ISO 844)	1.050 KgF/cm ² (15,000 psi)
Flexural Strength (ISO 178)	650 KgF/cm ² (9245 psi.)
Condensation Resistance (ASTM D4585)	2000 hours – Without defects
Exterior Exposure (ASTM D1014)	2 years- Chalking (ASTM D659): rating 4
Immersion in water (ASTM D870)	Without defects - 4000 hours
Immersion in artificial salt water (ASTM D870)	Without defects - 4000 hours
QUV (Using A340 & B313 bulbs)	2000 hours – Chalking (ASTM D659): rating 4
Adhesion- Tape test (ASTM D3359)	Rating - 5B
Deformation/Impact test (ASTM D2794)	2.0 Kgf.m (19,6 Joules)
Flexibility - Mandrel (ASTM D522)	Without defects
Absorption (ASTM D570)	0,30%
Prohesion (ASTM G85)	Without defects - 2000 hours
Density (ISO 2811)	1,1 - 1,3 g/cm ³

MIL-PRF 23236C: Approved as part of a Type VII coating system, Classes 7, 15b and 17.

Type VII: A coating system having a maximum VOC content of 150 g/Lt (1.25 lb/gal) of coating. Hazardous air pollutants (HAPs) in the solvent will not exceed VOC levels. Use of pigments that are hazardous to workers or create hazardous waste is restricted to trace levels. May be used in any air quality management district regulating VOC. Dry coating is not a hazardous waste under USEPA regulations. Coatings proposed for qualification testing to this Type have no solvent added to either the base resin component or the hardener component.

Class 7: coating system without a shop primer for use in dedicated seawater ballast tanks.

Class 15b: coating system intended as a repair or touch-up coating, without a shop primer, for use over wet surfaces that are prepared to bare metal surfaces where the paint has been removed to the bare metal substrate.

Class 17: coating system without a shop primer intended for use on properly cleaned and prepared bilge surfaces.

Testing Data	Result	Pass/Fail	Source
Salt fog ASTM B117	Rating 10 (0-10, ASTM D1654) after 1000 h.	Pass	(A);(B)
Condensation ASTM D4585	Rating 10 (0-10, ASTM D1654) after 1000 h.	Pass	(A)
Edge-retention (procedure of MIL-PRF 23236 C standard)	edge retention ratio of 75% - 100%, for edge radius from 0,1 mm to 2,4 mm, respectively.(150 micron GN101LC+150 micron GN101LC) system	Pass	(A)
Adhesion (pull-off) After 1000 h salt fog After 700 h salt fog After 1000 h condensation	<i>ASTM D4541 or equivalent</i> 10,3 – 12,8 MPa 11,5 Mpa 11,1 – 13,9 MPa	Pass Pass Pass	(A); (B) (A) (A) (A)
Atmospheric exposure (2,5 years)	<i>Ratings 0-10 accordingly to ASTM D1654</i> Rust: 10; Blistering: 10; Scribe undercut 0,5 mm.	Pass	(A)
Cathodic disbonding	No defects (90 days, "pass") MIL P24647,	Pass	(A)
Impact resistance (falling weight)	6,4 – 8,3 J (fall from 65 to 85 cm, EN ISO 6272)	Pass	(A)

(A): Globalnavy R&D laboratory (150 μ g/gov GN101LC+150 μ g/gov GN101AX). (B): Southern Institute of Water Resources Research (GN101)

API/EI 1541 Standard: Approved MIL-PRF 23236C as part of a Type VII coating system, Classes 7, 15b and 17 .

Test results bellow, accordingly with 2.2. of the standard.

Testing Data	API/EI Standard	Pass/Fail
ASTM D2624	2.2.2.1.Electrical conductivity comparation	Pass
ASTM D381	2.2.2.2. Existent Gum comparation (A)	Pass
ASTM D381	2.2.2.3. Existent Gum comparation (B)	Pass
ASTM D130	2.2.2.4. Corrosivity to copper (B)	Pass
ASTM D3241	2.2.2.5. Oxidative thermal stability (B)	Pass
ASTM D2624	2.2.2.6. Electrical conductivity (C)	Pass
EI 1541	3. Additional properties	Color G9003/G7000 Pass