

GlobalDur GN101 Epoxy Primer LC



PERFORMANCE IN COATINGS

TECHNICAL DATA SHEET



Epoxy Primer LC Solvent free Converter/Inhibitor, Moisture Tolerant With Excellent Edge Retention Properties

PRODUCT DESCRIPTION	<ul style="list-style-type: none"> ◆ GlobalDur GN101LC is an excellent economic epoxy/amine two pack anticorrosive solvent free primer for steel. Can also be applied over concrete. ◆ GlobalDur GN101LC is a primer design for excellent anticorrosive and edge retention performances. ◆ GlobalDur GN101LC is a primer specially design to be applied over well tightly adherent rust and moisture or dry surfaces. ◆ GlobalDur GN101LC is specially design for excellent edge retentive properties as a second coat over GN101EP or GN101EK in order to boost edge retention on the coating system. ◆ GlobalDur GN101LC is a HASTE technology primer specially design for Humidity And Surface Tolerant Epoxy with excellent performances on hydroblasted prepared surfaces. ◆ GlobalDur GN101LC can be applied as a primer, intermediate or finish (however may have slight colour differences due to its particular curing properties).
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PERFORMANCES	<ul style="list-style-type: none"> • Unbeatable inexpensive solvent free epoxy; • Excellent anticorrosive performance clubing inhibitor and conversion properties; • No humidity/dew point restrictions; • Excellent resistance to wearing and impact; • No surface profile needed; • Absence of health harm solvents; • Excellent adhesion to substrate and between coats; • \$\$\$ Surface preparation cost reduction; • Excellent edge retentive properties; • Good chemical resistance.
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RECOMMENDED USE	<p>PRIMER/INTERMEDIATE/FINISH OVER STEEL MARINE: ballast tanks, fuel/crude oil tanks, decks, bilge and void areas, double bottoms, rigs, offshore platforms, etc.. PROTECTIVE: Bridges, machinery, railroad cars, metallic structures, lead and other coatings covered structures, fuel and water pipe lines. PRIMER/INTERMEDIATE/FINISH OVER CONCRETE Can be applied on floor and for concrete protection on special conditions - Please contact your local GlobalNavy office for more information.</p>
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APPROVALS	Complies with ISO 12944-5, as being suitable for coating systems until C5-M.
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COMPONENT A	COMPONENT B	COLOURS
GN101LC	H101LC	GN101LCG7000 (Light Grey), GN101LCG3009 (Red Iron Oxide). For other colours, please contact GlobalNavy's office.

Physical Properties

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GLOSS	Semi gloss.
SOLIDS BY VOLUME	100 % (theoretical).
VOC*	
FLASH POINT	> 101°C (> 214°F) Setaflash
PHYSICAL PROPERTIES	Density: 1,3 g/cm ³

Application

SURFACE PREPARATION	<p>Painting Direct to Metal: GlobalDur GN101LC, is suitable for surfaces prepared by hydroblasting, grit blasting (dry or wet) and mechanical, accordingly with the following standards: Grit Blasting: SA2 (ISO 8501-1:1988) 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 8501-1:1988)</p> <p>Apart from the surface preparation method, the moisture tolerance of GlobalDur GN101EpoxiPrimer LC 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 GN101EpoxiPrimer LC 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 GN101LC. Please contact GlobalNavy office in case of any doubt or for further information.</p>
APPLICATION METHOD	<p>SPRAY: Use air less spray. Use na equipment with a compressing 60:1 ratio, na inlet 4,5 bar pressure, allowing a 240-310 bar outlet pressure. A 0,019" or 0,0 21" tip is recommended. 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 GN101LC can be applied on dry or wet surfaces, even with 100% humidity and surface temperatures below the dew point.</p>
APPLICATION CONDITIONS	The substrate temperature shall be 10°-50°C. The ambient temperature shall be >15°C and moisture >12%. There is no dew point restrictions.
APPLICATION DATA	GlobalDur GN101 EpoxiPrimer LC 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 na application optimization adjustment, the product can be diluted until 5 % (v/v) with GN001TH. Mix completely both quantities of component A and B packs.
MIX RATIO	5,2 / 1 (by Weight) 3,3 / 1 (by Volume)
HARDENER	H101LC
POT LIFE	2 hours (at 23°C(73°F)).
THINNER	GN001TH/GN003TH
SOLVENT / CLEANER	GN003TH

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PERFORMANCE IN COATINGS

DRY TIME	Surface dry: 24 hours at 15°C (59°F); 16 hours at 20°C (68°F); 14 hours at 25°C (77°F); 10 hours at 30°C (86°F). Dry to recoat: Min: 24 hours at 15°C (59°F); 20 hours at 20°C (68°F); 16 hours (25°C/77°F); 12 hours at 30°C (86°F). Max: 14 days at 15°C (59°F); 10 days at 20°C (68°F); 8 days at 25°C (77°F); 6 days at 30°C (86°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 1 x 200µm (DFT) • GlobalDur GN101LC 1 x 200µm (DFT). This is a system for 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 - 30°C).
PACKING	Two pack product, available in packs (A+B) 5 L and 20 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 GN101LC 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	15°C	20°C	25°C
Pot Life		220 minutes	160 minutes	120 minutes	90 minutes	60 minutes	40 minutes
Dry to touch (Max.)		24 h	20 h	16 h	12 h	4 h	3,5 h
Foot traffic		48 h	32 h	24 h	22 h	20 h	18 h
Recoating period	Min.	48 h	24 h	16 h	8 h	4 h	4 h
	Max.	16 days	12 days	7 days	7 days	7 days	5 days

GN101LC			10°C	15°C	20°C	25°C	30°C
Pot Life			210 minutes	160 minutes	120 minutes	90 minutes	50 minutes
Dry to touch (Max.)			32 h	24 h	16 h	10 h	4 h
Foot traffic			48 h	32 h	24 h	22 h	20 h
Recoating period	Min.		48 h	24 h	16 h	8 h	4 h
	Max.		15 days	7 days	7 days	7 days	6 days

GN101EK				15°C	20°C	25°C	30°C
Pot Life				8 h	6 h	3 h	2,5 h
Dry to touch (Max.)				24 h	16 h	14 h	10 h
Foot traffic				56 h	32 h	24 h	20 h
Recoating period	Min.			24 h	20 h	16 h	12 h
	Max.			10 days	10 days	8 days	6 days

PHYSICAL PROPERTIES - Globalnavy R&D Laboratory	
Adhesion - Pull Off (ASTM D4541)	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)
Coefficient of Thermal Expansion	15 x 10 ⁻⁶ /°C
Impact Resistance	853 KgF/cm ² (12,132 psi.)
Barcol Resistance (ASTM D2583)	28
Elasticity Modulus (ISO/R 527)	100,000 KgF/cm ²
Salt spray resistance (ASTM B117)	Without defects - 2000 hours
Fuel compatibility (EI standard 1541)	Pass.
Fuel color	Saybolt color change ≤1 - Pass (Máx. allowed- 2).
Humidity (ASTM D2247)	Without defects
Maximum elongation (ISO/R 527)	3%
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)	30 Kg.cm
Flexibility - Mandrel (ASTM D522)	Without defects
Absorption (ASTM D570)	0,30%
Prohesion (ASTM G85)	Without defects - 2000 hours

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)	<i>ASTM D4541 or equivalent</i>		(A); (B)
After 1000 h salt fog	10,3 – 12,8 MPa	Pass	(A)
After 700 h salt fog	11,5 Mpa	Pass	(A)
After 1000 h condensation	11,1 – 13,9 MPa	Pass	(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 χρον GN101LC+150 μ χρον ΓN101LC). (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 comparison	Pass
ASTM D381	2.2.2.2. Existent Gum comparison (A)	Pass
ASTM D381	2.2.2.3. Existent Gum comparison (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