



Shell Chemicals

Cargo Handling Sheet

Caradol MD36-21

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Revision 6

Cargo Handling Sheets are for the use of vessels chartered by Shell Chemicals

Product Details

Product Name:	Caradol MD36-21
Shipping Name:	Glycerol Propoxylated and Ethoxylated
Chemical Family:	Polyol
Product Code:	U311E

SDS: <http://www.shell.com/business-customers/chemicals/safe-product-handling-and-transportation/safety-data-sheets.html>

Physical Properties

Density:	1,021 kg/m ³ (25 °C / 77 °F)
Dynamic Viscosity:	800 mPa.s (25 °C / 77 °F)
Vapor Pressure:	Not Available
Boiling Point:	Not Available
Melting Point:	Not Available
Flash Point:	> 180 °C / > 356 °F
Appearance:	Clear colourless liquid, no odour

Note 1: Physical Properties are for reference only and valid as of date of this revision; see loading terminal for specific properties.

Transhipments

Prior to arranging transhipment Charterer must agree to Owner's proposed plan. When arranged by the Owner, Owner must ensure that all transhipment vessels comply with the requirements of this cargo handling sheet.

Marpol Details

Marpol Annex:	II
IMO Ship Type:	3, must be double hulled
Inland Barges:	Double Hull
IMO Pollution Category:	Z
IBC16.2.6:	No

IBC 16.2.9: No
Pre-Wash Required: No
Compatibility Group: USCG group 40, not compatible with group 12 Isocyanates.

Cargo Handling Requirements

N2 Purge Cargo Tanks Prior Loading: No
N2 Blanket Required: Yes, < 5%; PQ requirement; See Regional Requirements
Adjacent Space Purge: No
Loading Temperature Range: Ambient – 40 °C / 104°F
Transit Temperature Range: 40 – 45 °C / 104 – 113 °F (International)
Ambient – 45 °C / 113 °F (EU Barges)
Discharge Temperature Range: 40 – 50 °C / 104 – 122 °F (International)
Ambient – 45 °C / 113 °F (EU Barges)
Maximum Heating Coil Temperature: < 100 °C / 212 °F
Adjacent Maximum Cargo Temperature: 55 °C / 131 °F

Note 1: If Nitrogen blanket is in place and Carrier chooses to transship, carrier must reapply nitrogen blanket on the cargo, both on the discharging and receiving ship, at their time, risk, and expense.

Note 2: PQ = Product Quality

Note 3: N2 Blanket Guidance:

- a. O2 level in tanks to be maintained below 5% O2
- b. Vessel to maintain a constant nitrogen overpressure of 20 millibars or more during the voyage
- c. Vessel to keep a daily N2 log of each tank:
 1. Tank pressure
 2. O2 level
 3. Tank Temperature

Log is to be presented to receiver at time of discharge and a copy sent to Charterers.

Regional Requirements

Note 1: Barge voyages in Europe - Stainless steel required

Tank Acceptance Requirements

All nominated shipboard cargo handling systems are to be presented clean (residual free), dry, odor free, rust free, with good gaskets, fit to load this cargo.

Maintenance of heating coils is to be verified in the ship's log. If product is to be heated, heating coils are to be confirmed leak free. If product is not heated, heating coils are to be blown clear and dried with N2 and blanked off.

Stainless Steel or Coated Tank: All coatings allowed except for Zinc; Carrier to verify suitability of coating; see Regional Requirements
Banned Prior Cargo: No
Wall Wash Required: Yes; all conducted with Methanol except PH test, which uses DI water

Coated Tanks: WWT conducted by cargo surveyor.

Stainless Steel Tanks: verification of shipboard WWT may be accepted if below specs are met. (Send WWT Verification to the responsible Shell Chemicals charterer and present to cargo surveyor and loading master at loading terminal.)

Wall Wash Test:	Specification	Standard
Hydrocarbons	Pass	ASTM D1722
Chlorides	Max 5 ppm	IMPCA 002-98
Color Test	Max 5 Pt/Co Max	ASTM D1209
Appearance:	Clear, free of suspended matter & odour	ASTM D4176
Pernamganate:	> 30 minutes	ASTM D1363

Additional WWT for Coated Tanks if Prior Cargo is:

Prior Cargo	Wall Wash Test:	Specification	Standard
Oils, Waxes, Veg Oils, Fame	NVM	100 ppm	ASTM D1353
Acids, Alkalis	PH Test	6 – 8	ASTM E70

Link to: [WWT Verification Form](#)

Safety Information and Incident Reporting

Safety Information:

For more detailed information, refer to the SDS or e-SDS for reportable spill/release quantities whether in the water, air or ground.

Incident Reporting:

International Registered Vessels: If an incident occurs call Shell International Trading and Shipping in London on +442079347777.

Jones Act Vessels: call the Shell 24 hr. incident number at +17132412532. The USA National Response Center telephone number is +18004248802.

For additional marine cargo handling advice or information, contact Captain Stephen Boudreaux at +18323376982 or Capt. Ben van Bommel at +31104415992.



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