

# Cargo Handling Sheet

Non-Shell Product

KLK Oleo PALMERA G997U  
(Glycerin USP 99.7%)

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Revision 1

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

*Information is obtained from supplier's SDS and other reference publications.*

### Product Details

Product Name:	KLK Oleo PALMERA G997U (Glycerine USP 99.7%)
Shipping Name:	Glycerine
Chemical Family:	Alcohols, Glycols
Product Code:	Non-Shell; KLK Oleo
SDS:	Supplier to Provide

### Physical Properties

Density:	ca. 1.26 g/cm <sup>3</sup> @ 20 °C / 68 °F
Viscosity:	Not Available
Vapour Pressure:	ca. < 0.01 hPa
Boiling Point:	ca. 290 °C / 554 °F
Melting Point:	ca. 18 °C / 64.4 °F
Flash Point:	ca. 177 °C / 350.6 °F
Appearance:	Colourless, Viscous

**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, Charterers must agree to Owner's proposed plan

### Marpol Details

Marpol Annex:	Annex II
IMO Ship Type:	3; Must be Double Hulled
Inland Barge:	Double Hull
IMO Pollution Category:	Z; Chapter 18 product
IBC 16.2.6:	No
IBC 16.2.9:	No

Pre-Wash Required: No  
Compatibility Group: USCG Compatibility Group 20

### Cargo Handling Requirements

N2 Purge Cargo Tanks Prior Loading: No  
N2 Blanket Required: Yes, PQ requirement; Max 5% O<sub>2</sub>; See notes below  
Adjacent Space Purge: No  
Loading Temperature Range: 50 – 55 °C; see Note 1 below  
Transit Temperature Range: 48 – 52 °C; see Note 1 below  
Discharge Temperature Range: 50 - 55 °C; see Note 1 below  
Maximum Heating Coil Temperature: 70 °C  
Adjacent Maximum Cargo Temperature: 55 °C; see Note 1 below

**Note 1:** Carrier to verify correct heating requirements with supplier.

**Note 2:** If Nitrogen blanket is in place and Carrier chooses to tranship, carrier must reapply nitrogen blanket on the cargo, both on the discharging and receiving vessel, at their time, risk, and expense.

**Note 3:** PQ = Product Quality

**Note 4:** N2 Blanket Guidance:

- a. O<sub>2</sub> level in tanks: 5 % O<sub>2</sub>
- b. Vessel to maintain a constant nitrogen overpressure of 20 millibars or more during the voyage
- c. Surveyor to record in survey report the type of cargo monitoring system and nitrogen replenishment system used onboard the vessel
- d. Vessel to keep a daily N<sub>2</sub> log of each tank:
  1. Tank pressure
  2. O<sub>2</sub> 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:** Prior Cargo Restrictions are the same for Glycerine USP shipments as for Propylene Glycol USP shipments that can be found in the linked document "Restrictions for USP and NF Solvents".

**Note 2:** Glycerine USP shipments to Singapore are both Kosher and Halal and shall be handled accordingly.

### 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.

Gaskets in contact with the cargo must be renewed or be of Teflon construction.

Prior Cargoes and Adjacent Cargoes must be submitted to the Responsible Shell Chemical Charterer at least 10 days before the commencement of laycan to allow for the appropriate religious society review. This includes tank cleaning plans.

Tank cleaning must be appropriate for the prior cargo and include food-grade detergent wash if necessary and a final potable water rinse. This includes the cleaning of pumps, all cargo piping and stripping system, and any hard pieces and/or jumper hoses that will be used to load this cargo. Specific Kosher and Halal approved steaming guidance may be provided by the Responsible Shell Chemicals Charterer.

**Stainless Steel Passivated Tanks (Clause 5, NIOP11D under Trading Rules)**

- Stainless Steel tanks that have been passivated shall be considered as new buildings.
- Cargoes carried prior to the date of passivation shall not be considered as relevant.
- Carriers are required to provide independent verification of passivation upon request.
- Carriers should employ a passivation process recommended under the current version of ASTM A 967. NIOP acceptable media for passivation is listed under the ASTM guidelines and includes, but is not limited to, Nitric Acid and Citric Acid solutions.
- A cleaning certificate is required to be completed by the independent surveyor as part of their report.

Once inspected and accepted by the cargo surveyor jumper hoses provided by the vessel must be voyage dedicated. After loading, any ship's hoses used must be drained, blind flanged, and segregated for use at discharge.

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 and free of all prior product.

**Stainless Steel or Coated Tanks:** Stainless Steel  
**Prior Cargo Restrictions:** Yes, see section below  
**Wall Wash Required:** Yes

Wall Wash Test:	Specification	Standard
Hydrocarbons	Pass	ASTM D1722
Chlorides	< 1 ppm	IMPCA 002-98
Color Test	< 5 Pt/Co Max	ASTM D1209

## Prior Cargo Restrictions

### [Propylene Glycol Previous Cargo Restrictions \(Link\)](#)

- **Last 3 Cargoes** for nominated tanks and the tank cleaning plan shall be submitted to the Shell Chemicals Charterer no later than 10 days prior to the commencement of laycan and checked against the above linked Restricted Prior Cargo List.
- Last 3 cargoes shall be forwarded for Kosher and Halal review and approval.
  - The immediate last cargo cannot be on the Restricted Prior Cargo List.
  - If the 2<sup>nd</sup> and/or the 3<sup>rd</sup> last cargoes are on the Restricted Prior Cargoes List, it is highly recommended that a GC-MS analysis of the Glycerine USP is conducted prior to discharge.
  - Substances having a hazardous potential but not on the Restricted Prior Cargo List may also trigger a GC-MS analysis prior to discharge.
- In addition to the Restricted Prior Cargo List, the following cargoes may not be an immediate last cargo or adjacent cargo:
  - Tallow
  - Lard
  - Yellow grease
  - Fish oil
  - Milk
  - Wine
- **Adjacent Cargoes** must be submitted to the Shell Chemicals Charterer no later than 10 days prior to the commencement of laycan and checked against the Restricted Prior Cargo List. Adjacent cargoes will then be forwarded for Kosher and Halal review and approval.
  - If the adjacent tanks are discharged while the Glycerine USP is loaded onboard, any new cargoes loaded adjacent should comply with the Restricted Prior Cargo list.
  - The Carrier must notify the Shell Chemicals charterer of any proposed changes in adjacent cargoes so that these new cargoes may be included in GC-MS testing prior to discharge of the Glycerine.

## Cargo Sampling, Analysis, and Retention Requirements

Sampling and analysis activities will be undertaken as a standard part of the cargo transfer process. These activities will be managed by the appointed surveyors on behalf of Shell Chemicals.

All Glycerine USP tanks shall be sealed by the 3<sup>rd</sup> party cargo surveyor and seal numbers recorded and included in the Surveyor's Report.

## **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 (44) 207-934-7777.

Jones Act Vessels: call the Shell 24 hr. incident number at (1) 713-241-2532. The USA National Response Center telephone number is (1) 800-424-8802.

For additional marine cargo handling advice or information, contact Captain Shakhawet Hossain at (65) 6384 8512.

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