



**Shell Chemicals**

# Cargo Handling Sheet

Pentane

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Revision 6

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

## Product Details

Product Name: Pentane  
Shipping Name: Pentane (all isomers)  
Chemical Family: Solvents  
Product Code: Q1113 (blend 75/25)

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

## Physical Properties

Density: Typical 624 kg/m<sup>3</sup> at 15 °C / 59 °F  
Kinematic Viscosity: Typical 0.32 mm<sup>2</sup>/s at 25 °C / 77 °F  
Vapor Pressure: Typical 77 kPa at 20 °C / 68 °F  
Boiling Point: Typical 24 - 32 °C / 75 - 90 °F  
Melting Point: -160.5 °C / -256.9 °F  
Flash Point: Typical -57 °C / -71 °F (IP 170)  
Appearance: Colourless

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

**Note 2:** This product is a Static Accumulator.

**Transhipment** Prior to arranging transhipment, Charterers must agree to Owner's proposed plan

## Marpol Details

Marpol Annex: II  
IMO Ship Type: 3  
Inland Barge: Double Hull  
IMO Pollution Category: Y  
IBC 16.2.6: No  
IBC 16.2.9: No  
Pre-Wash Required: No

Compatibility Group: USCG compatibility group 31

### Cargo Handling Requirements

N2 Purge Cargo Tanks Prior Loading:	Yes, PQ requirement; Max 5% O <sub>2</sub> , see Notes below and Regional Requirements
N2 Blanket Required:	Yes, PQ requirement; Max 5% O <sub>2</sub> or to customer's specs, see Notes below and Regional Requirements
Adjacent Space Purge:	No
Loading Temperature Range:	15 – 20 °C / 59 – 68 °F
Transit Temperature Range:	< 20 °C / 68 °F
Discharge Temperature Range:	< 20 °C / 68 °F
Maximum Heating Coil Temperature:	Blanked off
Adjacent Maximum Cargo Temperature:	< 20 °C / 68 °F

**Note 1:** 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 2:** PQ = Product Quality

**Note 3:** N2 Blanket Guidance:

- O<sub>2</sub> level in tanks: 5% O<sub>2</sub>; see Regional Requirements below
- Vessel to maintain a constant nitrogen overpressure of 20 millibars or more during the voyage
- Surveyor to record in survey report the type of cargo monitoring system and nitrogen replenishment system used onboard the vessel
- Vessel to keep a daily N<sub>2</sub> log of each tank:
  - Tank pressure
  - O<sub>2</sub> level
  - Tank Temperature

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

### Regional Requirements

**Note 1:** Inter-European voyages - N<sub>2</sub> pre-load purge or blanket not required

**Note 2:** Pernis loading dock – No N<sub>2</sub> supply

**Note 3:** This product may have to be cooled. Ref IBC code.

**Note 4:** Loading temperature in Rotterdam/Pernis may be higher than 20 °C / 68 °F with maximum 25 °C / 77 °F

**Note 5:** P/V valve setting for Shell chartered vessels require 60 kPa (Not required for FOB lifting's)

## 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 N<sub>2</sub>, and blanked off.

**Stainless Steel or Coated Tank:** Either, carrier to verify suitability of coating for product  
**Prior Cargo Restrictions:** No  
**Wall Wash Required:** No

## 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 +17132413945 or Capt. Ben van Bommel at +31104415992.



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