



**Shell**

# Cargo Handling Sheet

Pentane

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Revision 7

*Cargo Handling Sheets are for the use of vessels  
chartered on behalf of Shell*

## Product Details

Trade Name:	Pentane
IMO Product Name:	Pentane (all isomers)
Chemical Family:	Paraffins
Product Code:	Q1116

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

## Physical Properties

Density:	632 kg/m <sup>3</sup> at 15 °C / 59 °F
Kinematic Viscosity:	0.35 mm <sup>2</sup> /s at 25 °C / 77 °F
Vapor Pressure:	720 hPa at 20 °C / 68 °F
Boiling Point:	36 °C / 96.8 °F
Melting Point:	Data not available
Flash Point:	- 50 °C / -58 °F
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:** Hazard Identification: Extremely Flammable, Static accumulator, See SDS for full list of hazards and precautions

## Transshipment

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

## 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: Not a Product Quality requirement, see notes below.  
N2 Blanket Required: Not a Product Quality requirement, see notes below.  
Adjacent Space Purge: No  
Loading Temperature Range: Ambient - 20 °C / 68 °F  
Transit Temperature Range: Ambient - 20 °C / 68 °F  
Unloading Temperature Range: Ambient - 20 °C / 68 °F  
Maximum Heating Coil Temperature: Blanked off  
Maximum Adjacent Temperature: 20 °C / 68 °F

**Note 1:** If vessel is required to inert tanks, then only N2 will be accepted as an inerting medium.

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

**Note 3:** N2 Blanket Guidance:

- a. O2 level in tanks: < 5% O2; see Regional Requirements below
- b. Vessel to maintain a constant nitrogen overpressure of 20 millibars or more during the voyage.

### Regional Requirements

**Note 1:** Inter-European voyages - N2 pre-load purge or blanket not required

**Note 2:** Pernis loading dock – No N2 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.

<b>Stainless Steel or Coated Tank:</b>	Either, carrier to verify suitability of coating for product
<b>Banned Cargo Restrictions:</b>	None
<b>Wall Wash Required:</b>	None

## Safety Information and Incident Reporting

**Safety Information:** Refer the SDS (Safety Data Sheet) or e-SDS.

**Incident Reporting:** All incidents should be reported in accordance with regulations and charter party requirements.

For additional marine cargo handling advice or information, contact the regional Chemical Marine Technical Advisor.



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