

**Code Of Practice for the safe supply of
propylene
in rail tank cars**

June 2015

1.0 INTRODUCTION

The purpose of this document to detail the Ineos Olefins & Polymers Europe safety requirements related to the supply of propylene in rail tank cars

When the product is supplied under 'delivered' conditions, the supplier is responsible for the safety of the transport until the delivery into the Ineos O&P tank. The ownership of the product is transferred to Ineos O&P when the product leaves the flange of the rtc during the unloading.

2.0 TECHNICAL REQUIREMENTS RAIL TANK CARS

The supplier must ensure that the rtc's offered, comply with all applicable national and international regulations.

The supplier shall:

- Ensure compliance with the requirements for construction, equipment, tests, inspections and marking of the rtc's according to RID
- Ensure that the maintenance of tanks and their equipment is carried out in such a way as to ensure that, under normal operating conditions, the rtc satisfies the requirements of RID until the next inspection
- Have a special check made when the safety of the tank of the tank or its equipment is liable to be impaired by a repair, an alteration or an accident.

Requirements outlet connections:

- Liquid phase: WECO DN 80 (ISO thread)
- Gas phase: WECO DN 50 (ISO thread)

Pressure in the rtc's:

According to RID requirements The partial pressure of inert gas (e.g. nitrogen) may not exceed 2 Bara this is 1 Barg, so the overpressure in the vapour phase may not exceed 1 bar above the normal vapour pressure of the product at the temperature of the liquid. Example: if temperature of the liquid is 20 °C and vapour pressure at 20 °C is 10 bara (9 barg), the max pressure in the rtc may not exceed 10 barg (9+1).

3.0 MAIN RESPONSIBILITIES ACCORDING TO RID

According to RID, the following obligations apply:

- **The consignor (Supplier)**
 - Ascertain that the dangerous goods are classified and authorized for the carriage in accordance with RID
 - Furnish the carrier with information and data

- Use rtc's approved for and suited to the carriage of the products and bearing the markings as prescribed by RID
- Comply with the requirements on the means of dispatch and on forwarding restrictions
- **The carrier (railway company)**
 - Ascertain that the dangerous goods are classified and authorized for the carriage in accordance with RID
 - Ascertain that the required information has been supplied by the consignor
 - Ascertain visually that the rtc's and loads have no obvious defects, leakages, cracks, missing equipment etc..
 - Ascertain that the date of the next test for the rtc's has not expired
 - Ascertain that the rtc's have not been overloaded
 - Ascertain that the placards and labels prescribed for the rtc's have been fitted
- **The filler (Loading site)**
 - Ascertain prior to filling that the tank and the filling equipment are technically in a satisfactory condition
 - Ascertain that the date of the next test of the rtc's has not expired
 - Fill only tanks with the dangerous goods authorized for carriage
 - Observe, during the filling, the permissible degree of filling or the maximum permissible mass of the contents per litre capacity for the substance being filled
 - Check, after the filling, the leakproofness of the closing devices
 - Affix the prescribed orange plates, danger labels, markings and shunting labels on the rtc's in accordance with the requirements.
 - Observe, before and after filling, the applicable checking requirements for liquefied gasses according to RID 4.3.3.4
See also Annex 1

4.0 INSPECTION AND LOADING RAIL TANK CARS

- All people involved in the loading operations must be adequately trained. The training should also include basic RID requirements (construction, labelling, marking, inspection etc.. of rtc's)
- Each rtc must be inspected before and after loading. This must be done by the loading site by using a checklist. The checks to be done are listed in the checklist in annex 1 The purpose of this inspection is to ensure that:
 - The rtc is suitable for its intended use.
 - No damages or apparent deficiencies are present.
 - The applicable RID requirements are met (e.g. labelling).

- In case some of the checks cannot be done by the loading site operators then a specialised company must be assigned to do these checks.

If rtc's arrive at Ineos O&P in an unsuitable technical or unsafe condition, then Ineos O&P will impose a completed and signed checklist, before arrival, for each subsequent rtc delivery.

The loading installation must ensure that all the valves of the rtc and the connections/ flanges/ couplings are leak-tight. Also the connections at the other side of the rtc must be checked. This can be done by means of a visual inspection / soap test or a vacuum or pressure test of the valves and couplings prior to loading.

- Rtc's must be weighed before and after loading to ensure that the maximum filling weight is not exceeded.

For determining the max filling weight, one must take into account:

- The allowed maximum filling weight of the tank. This is written on the side of the tank.
- Weight restrictions on the route that the rtc is to be transported (loading category). The maximum predetermined loading limit of the railway route is given by the railway transport company. If the maximum filling weight of the railway route is less than the safe maximum filling weight of the rtc, the limit of loading is the lower value.
- The amount of product than can be filled also depends on the maximum filling degree according to RID regulations (which takes into account the thermal expansion).

To prevent overfilling, the filling weight in the rtc is to be continuously monitored during the filling process (e.g. via mass flow meter). The mass flow should be continuously monitored during the filling operation.

The rtc must be weighed before and after loading on a calibrated weighbridge

- The connections must be sealed, preferably with tie-raps, on both sites of the rtc, in order to warn against unauthorized opening.

5.0 EMERGENCY RESPONSE

The prime responsibility to deal with off site emergencies rests with the local authorities.

When the product is sold under 'delivered' conditions, the supplier remains responsible for the product until it is unloaded into the Ineos O&P tank.

The supplier must provide to Ineos O&P an emergency telephone number that can be contacted on a 24/7 basis in case of emergencies.

In case of an emergency with an rtc close to an Ineos O&P site, Ineos O&P might be requested by the authorities to give support. Because of the proximity of the Ineos O&P plant, local media and the public may link the incident to Ineos O&P and therefore the Ineos O&P site should be prepared to give support:

e.g.: Sending an rtc technician from an external company to the incident scene to stop a leakage

Providing product information to the authorities.


Acting as the local incident communication centre

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In case there is a requirement to carry out a product transfer or a degassing of an rtc, the authorities may launch the national Chemical Emergency response scheme (e.g. TRANSAID in France) whereby a major Chemical Company will deal with the product like carry out a product transfer or a degassing of the rtc.

Annex 1: CHECKLIST FOR LOADING GAS RAIL TANK CARS

Note L/R means: Left and Right side of rtc

| 1. Identification | | | |
|--|--|-----------|-------------|
| 1.1 Number rtc | | | |
| 1.2 Number rtc in accordance with loading order. | YES NO | | |
| 1.2 Loading ref nr | | | |
| 1.3 Product | | | |
| 1.5 Danger placards (L/R) present: right numbers and in good condition (example propylene) | <input type="checkbox"/> <div style="display: inline-block; vertical-align: middle; margin-left: 20px;"> <table border="1" style="border-collapse: collapse;"> <tr style="background-color: #ffcc00;"> <td style="text-align: center; padding: 5px;">23</td> </tr> <tr style="background-color: #ffcc00;"> <td style="text-align: center; padding: 5px;">1077</td> </tr> </table> </div> | 23 | 1077 |
| 23 | | | |
| 1077 | | | |
| 1.6 Danger labels (L/R) present and in good condition | <input type="checkbox"/> <div style="display: inline-block; vertical-align: middle; margin-left: 20px;">  </div> | | |
| 1.7 Date of next tank inspection, | | | |
| 1.8 Date of next revision chassis/ underframe | | | |
| 1.9 Test/ revision dates not expired | | | |
| 1.10 Tare weight according to Inscription board | | | |
| 1.11 Tare weight after weighing empty rtc | | | |
| 1.12 The RTC is authorised to carry the gas to be loaded | | | |

| 2. BEFORE LOADING | YES | NO | N/A |
|---|-----|----|-----|
| 2.1 Inscription board/ wagon plate is in good condition and inscriptions are readable (L/R) | | | |
| 2.2 RTC is free of visual damage- general condition is OK | | | |
| 2.3 Orange band at the sides present | | | |
| 2.4 Sunshield OK | | | |
| 2.5 Condition footboard/ steps OK | | | |
| 2.6 Condition crossing bridge OK | | | |
| 2.7 Handbrake in good condition and operational | | | |
| 2.8 Air Brake hose and coupling OK | | | |
| 2.9 Screw couplings OK | | | |
| 2.10 Brake system OK (brake shoes not worn out) | | | |
| 2.11 Buffers OK (crash buffers operational) | | | |
| 2.12 Axle box housing/ bearing OK – no signs of overheating | | | |
| 2.13 Springs OK | | | |
| 2.14 Wheels, wheel flange surface OK (no damages/ no flat wheels) | | | |
| 2.15 Earthing plate present | | | |
| 2.16 Railhook cable/ ring present and in good condition | | | |
| 2.17 Earthing lugs between chassis and tank present and in good condition | | | |
| 2.18 Rtc marked with non conformity note Railways ? If yes: Which model of note Which defect/damage Action to take: | | | |
| 2.19 Data regarding the gases that are allowed to be carried that are mentioned on the stainless steel plate are in accordance with the data on the | | | |

| | | | |
|---|--|--|--|
| inscription panel (RID 4.3.3.4.1) | | | |
| 2.20 Markings inscription board/chassis and barrel are properly readable (L/R) | | | |
| 2.21 Right product name marked on wagon (L/R) | | | |
| 2.22 Last product in rtc has been checked (on the basis of transport document or analysis) (RID 4.3.3.4.1) | | | |
| 2.23 The mass of residue in the rtc has been determined by weighing and has been taken into account to determine the loading weight (RID 4.3.3.4.1) | | | |
| 2.24 Max weight to be loaded is in accordance with max weight limits | | | |
| 2.25 Flange connections: DN 80 for liquid phase and DN 50 for gas phase (L/R) | | | |
| 2.26 Flange connections marked Liquid/ Gas (L/R) | | | |
| 2.27 Visual condition of (flange) connections, bottom valve, outlet valve and tank OK (L/R) | | | |
| 2.28 Bottom valve operating instructions present (L/R) | | | |
| 2.29 Bottom valve operation mechanism OK (L/R) (RID 4.3.3.4.1) Indicators OK (L/R) emergency screw in right position (cap in place and sealed for mechanical bottom valves, screws present in oil reservoir for hydraulic bottom valves) No signs of leaking hydraulic oil | | | |
| 2.30 Outlet/discharge valves (gas- and liquid phase) on opposite side of rtc (side not used for loading) closed, secured and sealed | | | |
| 2.31 Gaskets in blindflanges on opposite side of the rtc (gas and liquid phase) are in good condition and suitable for the purpose and flanges are properly bolted/ tightened (bolt of suitable length in each bolt hole). (RID 4.3.3.4.1) | | | |
| 2.32 Visually no leaks of valves, flanges, manlid, tank..OK (RID 4.3.3.4.1) | | | |

| 3. AFTER Loading | YES | NO | N/A |
|--|------------|-----------|------------|
| 3.1 Closing sequence of valves observed (from inside to outside) | | | |
| 3.2 Outlet/ discharge valves loading site closed, secured and sealed | | | |
| 3.3 Bottom valves closed (indicators in 'closed' position) , secured and sealed (L/R) | | | |
| 3.4 Visually no leaks of all valves (L/R), flanges (L/R), manlid, tank.. (RID 4.3.3.4.1) | | | |
| 3.5 Gaskets blindflanges loading site (gas and liquid phase) replaced by new ones which are suitable for the purpose and blindflanges are properly bolted/ tightened (bolt with suitable length in each bolt hole) (RID 4.3.3.4.1) | | | |
| 3.6 Right product indication and danger labels in place | | | |
| 3.7 The partial pressure of inert gas (e.g. nitrogen) does not exceed 2 Bara (is 1 Barg, so the overpressure in the vapour phase may not exceed 1 bar above the normal vapour pressure of the product at the temperature of the liquid. Example: if temperature of the liquid is 20°C and vapour pressure at 20°C is 10 bara (9 barg), the max pressure in the rtc may not exceed 10 barg (9+1). (RID 4.3.3.4.1) | | | |
| 3.8 Pressure rtc at departure: bar | ...bar | | |
| 3.9 Weight rtc after loading (RID 4.3.3.4.1) | | | |
| 3.10 Max filling degree/ weight is OK (RID 4.3.3.4.1) | | | |

4.Remarks: