

A	Generic requirements
1.	The driver will not take any samples (applicable to road transport only) and Buyer will not request the driver to do so.
2.	Discharge of product takes place within customer premises only (e.g. not on public roadways).
3.	Personnel can readily escape from the discharge area in case of an emergency.
4.	An eyewash facility is available in the discharge area.
5.	Buyer is responsible (and has documented procedures) for unloading. Buyer's operator is present during the critical parts of discharge, including (hose connection, valve operation, unloading start and end, and hose disconnection).
6.	Checks are done before discharge starts to ensure that the storage vessel has sufficient free space to receive the entire delivered quantity. For liquids, discharging into 2 or more storage tanks during one discharge operation is not allowed unless via a manifold.
7.	Checks are done before discharge starts to ensure that the correct product is discharged into the correct storage vessel.
8.	The discharge system / line-up prevent backflow of product from storage vessel to the tanker.
9.	In the event the hoses / loading arms used for discharging are owned by Buyer, such equipment is suitable for the product and in good condition.
10.	In case of pressurized discharge, there is a pressure regulator device or system installed and used to prevent over-pressurisation of the cargo tank during product discharge.
11.	If the use of a safety harness is required by the Buyer's unloading site, a rescue plan is in place to avoid suspension trauma for someone hanging in the harness.
12.	There is no direct discharge from the tanker into Intermediate Bulk Containers (IBCs) or drums unless it is done via a suitably fixed or engineered discharge / drumming facility.
13.	Buyer will not discharge product directly to reactor unless it is empty, cleaned and off-line.
14.	In situations where trans-loading of product will occur (defined as the transfer of product between transportation containers), Buyer must have documented procedures in place to mitigate the risks associated with the trans-loading activity, which may include (by way of example and not limitation) spills, static electricity, working at heights or exposure to product; provided, however, that trans-loading of certain products identified by Seller to Buyer may be prohibited based on the hazards involved.

B	Additional requirements for Flammable Products (flashpoint up to 60 oC / 140 oF).
15.	The tanker can be connected to a suitable earthing point.
16.	The use of compressed air for the discharge of flammable product is prohibited.
17.	Vent outlets of storage vessels terminate in a safe location.
18.	Storage vessel and pipe work are electrically bonded and grounded (connected to earth).
19.	There are no ignition sources in the discharge and storage areas, and all electric equipment is suitably rated, inspected and in visibly good condition.
20.	For non-conductive liquids (conductivity < 100 pS/m) the discharge line velocity is restricted and splash filling is avoided to prevent generation of electrostatic charges.
C	Additional requirements for Products with high acute toxicity (skull and crossbones label) or corrosive to the eye and/or skin properties.
21.	There is an emergency shower and an eye wash immediately available with reliable and regularly tested water supply, which is frost protected where appropriate.
22.	There is a closed discharge system. Any displaced vapors are vented to atmosphere through a suitable abatement system or to a safe location.
23.	There are dedicated lines or effective cleaning procedures in place to avoid cross product contamination.
D	Additional requirements for liquefied flammable gases. For Shell Chemicals portfolio these are ethylene, propylene, butenes, butadiene and ethylene oxide (EO).
24.	All equipment used in liquefied gas service is designed and manufactured according to internationally recognized pressure vessel design codes (e.g. ASME, API, PED etc...) and suitable for the operating conditions.
25.	The following devices are fitted on storage vessels and periodically inspected: pressure relief valves, pressure indicator, high pressure alarm, liquid level indicator, high level alarm, temperature indicator and high temperature alarm.
26.	There is a water deluge system over tanker unloading area and storage vessel and/or fire water hoses/monitors readily available to cool storage vessel and tanker in the event of a fire.
27.	There is a closed discharge system. No vapors are emitted to atmosphere during unloading. Dry breaks couplings are highly recommended (mandatory if agreed with customer).

28.	A positive vapor pressure of minimum 0.3 barg (5 psig) is maintained in the truck/rail car at all times to keep air (oxygen) out of the tanker during handling and return to the supplier.
-----	--

E	Product specific requirements in addition to 1-28 for ethylene oxide (EO):
29.	Adequate pressure control and safeguards are in place for the nitrogen supply to avoid overpressure of storage vessel, tank car and other connected equipment.
30.	The storage vessels are fitted with a nitrogen padding system to ensure that EO in the vapor space is maintained in the non-explosive region. <i>NOTE: See ACC or CEFIC Guidelines for details.</i>
31.	Unloading hoses or unloading arms are purged with nitrogen before and after discharge and a leak test is carried out with nitrogen before beginning the unloading of EO. (Purpose of purging after discharge is to remove any residual EO from unloading line).
32.	Nitrogen supply is available with a purity of 99.95%. All lines from nitrogen supply system towards EO storage and other connected processes are dedicated or fitted with adequate backflow protection.
33.	Positive nitrogen pressure of minimum 2.7 barg /40 psig is maintained in the tanker at all times to ensure that EO in the vapor space is maintained in the non-explosive region during unloading and return to the supplier.
34.	If a pump is used for discharge, this is fitted with at least one of the following safeguards to prevent an abnormal temperature rise: <ul style="list-style-type: none"> <li>• low flow shutdown device (trip) and alarm</li> <li>• high temperature shutdown device (trip) and alarm for pump case temperature and/or seal fluid temperature</li> <li>• minimum flow recycle either through an external cooler or back to the storage vessel.</li> </ul>
35.	EO-selective dry-break couplings are used (applicable in Europe only).
36.	The unloading station is dedicated to EO or shared with compatible products only (e.g. PO).

F	Product specific requirements in addition to 1-28 for propylene oxide (PO):
37.	The following devices are fitted on storage vessels and periodically inspected: pressure relief valves, high pressure alarm, liquid level indicator, high level alarm, temperature indicator and high temperature alarm.
38.	All lines from nitrogen supply system, towards PO storage and other connected processes, are fitted with adequate backflow protection.

39.	There is a water deluge system over storage vessel and truck/rail car unloading area and/or fire water hoses/monitors readily available to cool storage vessel and tanker in the event of a fire.
40.	PO-selective dry-break couplings are used (applicable in Europe only)
41.	A positive nitrogen pressure of minimum 0.07 barg (1 psig) is maintained in the tanker at all times to keep air (oxygen) out of the tanker during handling and return to the supplier.

G	Product specific requirements in addition to 1-12 and 19-22 for CARADATE 80 (TDI):
42.	Safe working at height provisions are in place for driver/operator.
43.	There is sufficient stock (200 kg) of decontamination solution and absorbent material available on site to provide adequate spill response.
44.	A safety review using the ISOPA assessment scheme is accepted as part of the overall assessment. <i>NOTE: see <a href="http://www.isopa.org">www.isopa.org</a> for details and the questionnaire.</i>

H	Product specific requirements in addition to 1-12 and 19-22 for Phenol:
45.	Pressure/Vacuum valves on storage vessels are heat traced to prevent crystallization of phenol.
46.	In case of pump discharge, splash-guards are fitted over pump seal areas.

I	Product specific requirements in addition to 1-12 for Mono Propylene Glycol and/or Di Propylene Glycol Pharmaceutical grades (MPG-USP, and/or DPG-LO), and for Acetone National Formulary (Acetone NF) and Isopropyl Alcohol Excipient Pharmaceutical grade (IPA USP):
48.	Each piece of equipment in contact with the Product is made of suitable materials and cleaned and maintained according to written procedures in compliance with the Cefic Propylene Oxide/Propylene Glycols Sector Group Guidelines for Handling and Distribution of Propylene Glycol USP/EP (the "Guidelines") [1].
49.	There are written procedures and documentation for both unloading and loading/packageging operations of the Product. These procedures include: working in a clean area cleanliness inspection of the transport equipment and all other equipment in contact with the Product checking of the integrity of the seals before unloading performing key points analysis for positive identification and contamination detection

	<p>sealing of all valves and openings after loading</p> <p>retaining samples from unloading, loading and packaging operations</p> <p>draining and capping of the equipment after the operation</p>
50.	Customer is able to provide full traceability on product origin, packaging material origin, operations on site and subsequent destinations.
51.	Every Product (excluding Acetone NF and IPA USP) lot includes a quality certificate expiry date/shelf life. Every product is checked and/or tested for quality and positive identification..
52.	There is a written procedure for Product recall in case of quality concerns.
53.	There is a training program and training records of all personnel involved in handling of the Product, to demonstrate the appropriate knowledge level to deal with GMP produced material.
54.	A safety and quality review (self assessment of independent third party) shall be conducted periodically using the relevant Cefic assessment questionnaire, which can be found in Appendix 2 of the Guidelines [1].