

Possible Faults and their Remedies

Please note these are guidelines and recommendations only, and are by no means exhaustive. The personnel operating the tank are ultimately responsible for the safe operation of the tank in their care.

Accidental Cargo Discharge

Probable Cause

Careless opening of outlet valve or disconnection of hose containing cargo or leakage via incorrect fittings or hoses.

Precaution

Check if cargo is present before opening valves or disconnecting fittings. Check that hoses and fittings are correct for the tank.

Overpressure

Probable Cause

Excessive operating pressure. May result in rupture of the tank or hoses or release of cargo through the pressure-relief valves, with possible risk of spillage and injury.

Precaution

Note the maximum working pressure marked on the tank data plate and ensure that it is not exceeded. Ensure that the correct ullage space is provided to enable expansion of the cargo.

Hose Blocking

Probable Cause

Hose kinked or flattened so unable to pass air or liquid. May cause over-pressure or vacuum collapse.

Precaution

Hoses should be inspected before use and correctly laid out before filling. Hoses should be clearly marked to prevent constriction caused by objects being placed on them.

Tank Overheating

Probable Cause

Exceeding maximum operating temperature and / or the maximum working pressure of the steam heating system. May damage tank shell, insulation, fittings, and cargo.

Precaution

Do not exceed the maximum operating temperature marked on the tank data plate. Verify that the thermometer is in working order.

Cargo Vapour Explosion

Chemical Reaction/Product Contamination

Probable Cause

Tank and fittings not properly cleaned of previous cargo and / or cleaning agents. Incorrect cleaning agent used. May result in contamination of new cargo, violent chemical reaction, crusting / congealing of residue in tank and fittings or damage to the tank.

Precaution

Ascertain previous cargo carried and check Cleanliness Certificate. Check cleanliness of tank outlet valves and other fittings in contact with cargo before loading. Check cleaning agent compatibility before use.

Excessive Steam Pressure

Probable Cause

Excessive pressure introduced into heating system. May damage tank or rupture hose causing failure of heating, escape of steam, contamination or escape of cargo.

Precaution

Do not exceed the maximum working pressure of the heating system marked on the tank data plate.

Heat Damage to Empty Tank

Probable Cause

Heating tank prior to cargo loading, exceeding maximum design temperature of shell. May cause deformation of or damage to shell and fittings.

Precaution

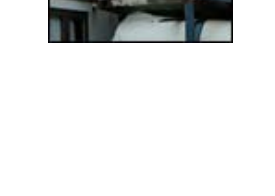
Ensure pre-heating temperatures do not exceed the maximum design temperature indicated on the tank data plate. Care should be taken not to overheat small quantities of cargo, especially cargo residue. Verify that the thermometer is in working order.

Vacuum Collapse (implosion)

Probable Cause

Vacuum created in tank during pumping out, or as a result of tank cooling after system cleaning, or after discharge of heated cargo. May result in damage to tank shell and injury to personnel.

Even though these tanks have been severely damaged, the tank shell remained intact, with no product spillage.



Probable Cause

Naked light or electrical spark in presence of cargo vapours during loading / discharge or in presence of cargo leakage.
May result in fire or explosion.

Precaution

Strictly observe the "no naked light" rulings in the vicinity of tanks. Ensure a good earth connection has been made to the tank prior to loading / discharge. Check tools and clothing (especially boots) for spark risk

**Precaution**

Ensure tank is vented (via manhole or air-line) during cargo discharge and after steam cleaning and discharge of heated cargo. If a vacuum valve is fitted to the pump and / or tank, check that it operates freely.

NOTE. Special precautions must be taken when handling hazardous cargo to guard against venting of harmful vapours to atmosphere.

