



Shipment of Liquid Bulk Parcels Quantity & Quality Control Recommendations

Cleanliness Inspection

Before transfer of any liquid bulk cargo into another storage compartment whether it is a vessel, truck, train, or shore tank etc., it is paramount that the storage facility as well as the products lines and appendages are completely clean and suitable to receive the nominated cargo.

In relation to suitability, it is also important that parties ensure that the make, type internal coatings etc. are appropriate to receive the nominated liquid bulk parcel into the nominated tank.

It is recommended that the inspection is done by an independent AIG Marine Risk Consulting approved cargo inspectorate.

There are a variety of examples where by the coating was not proven to be suitable / resistant to receive the product. Just as an example we mention that strong acids are known to damage or solve tank coatings. Such event damages the tank and also the product inside.

Hence, for cleanliness inspections of the reception tanks we recommend that at a minimum the following procedures are followed:

- Tank cleanliness and suitability inspections must be done and documented by means of dry tank / cleanliness reports.

Cleanliness inspection should include, but is not restricted to:

- Visual tank and cargo line inspection
- Inspection of cargo lines to ensure that they are well drained
- Wall wash test plus analysis, (optional)
- After the above 3 items have been followed a tank cleanliness certificate should be issued.

There are circumstances that tanks cannot be visually inspected, such as when product tankers arrive with inert tanks alongside. It is our recommendation that tanks do not have to be inspected if the previous cargo is a “friendly” cargo for the onboarding parcel i.e. that remnants of the previous cargo carried in the same tank and handled over the same line systems can cause no damage.

If that is the case, it is important that the following procedure is followed:

- Verification with the ship’s staff if the cleaning procedure as described has been satisfied. If water is a contaminating factor for the nominated cargo, cargo tanks are to be dipped for water with water finding paste from deck level
- Visual cleanliness inspection from deck level of the nominated cargo tanks, deck lines and manifold connections from deck level
- After completion of the above, a cleanliness certificate should be signed based on the ship representative’s statement and own findings.



Analysis

Analysis is an important factor to monitor the quality of the product throughout the logistic chain. The point is that any liquid product is traded on specified product specifications or “specs”.

To limited extent the quality can be monitored visually by means of sampling and just checking the appearance / visual condition “as is” in the transparent sampling bottle. Often, in particular when filling a cargo line system that had been cleaned and used for other products such sample taken after filling shows remnants of wash water or even remnants of such previous products in the event the cargo line was not properly cleaned. However, the visual inspection is limited to contents that can be seen. Many and sometime very critical key points of the “specs” cannot be observed visually in the operation and require analysis by a laboratory.

Hence pending the sales terms the analysis at following stages in transit must be considered.

Loading

- Full spec analysis of shore tank before loading,
- End of shore line on appearance and key points,
- 1st foot appearance and key points,
- After loading ships sample appearance and key points,
- Full spec analysis after loading ships composite

Discharge

- Before discharge full spec analysis ships tank samples,
- End of shore line before discharge appearance and key points
- Shore tank full spec before and after discharge.

Quantity Control

Gauging

Loading

- Ship tanks before loading quantity (OBQ certificate issued)
- Line displacement, to ascertain the quantity of product in the shore line
- Shore tank before and after loading preferably both manually and by terminal electronic gauging equipment
- Ships tank after loading manually as well as electronically as practically possible

Remark: different procedures will be applied for loading by meters and where shore tank measurements are only for reference

Discharge

- Ships tank before discharge, in case of in-transit difference (difference between ships figures at loading port and discharge port) >0.2%, do not start discharge until proper survey/inspections have been carried out
- Shore tank before and after discharge preferably both manually and by terminal electronic gauging equipment



- Line displacement, to ascertain the quantity of product inside the shore line upon commencement of discharge

Remark: different procedures will be applied for discharge by meters and where shore tank measurements are only for reference

Sampling

Samples have to be taken for the following purpose and depending the type of the cargo and purchasing/sales terms:

- For analysis
- To be retained for additional testing if needed
- In the event of a claim / deviating condition, properly sealed samples must be available and accompanied by a sample receipt that indicate the type of sample, seals per sample and signed by the relevant inspectorate

Below is a list of samples than should be considered in the operations the list may be too long but pending on required standards it may also not be exhaustive enough.

At loading

- Shore tank(s) before
- Shore line before
- Shore's manifold at start of loading
- Ship's first foot samples. Samples to be taken from all cargo tanks after a 1st foot quantity has been placed into such tank (some 30 cm of product) - these samples can be checked on appearance and key points as mentioned earlier
- Shore's manifold continuous drip samples during loading. One set for each shore tank
- Ship's (individual) cargo tanks after loading – UML (Upper Middle and Lower Level) or running samples to be retained in single or commingled to make a pondered composite

On board for the receivers – the following samples should be made available:

- Shore tank(s) before loading
- Shore line at the beginning of the loading (one for each shore tank used)
- First foot for each individual ship's tank
- Individual ship's tank after loading
- Shore's composite sample
- Ship's composite sample

Discharge

- Shore tank(s) before (if shore tank is empty, suitability should be inspected)
- Shore line before and after filling
- Ship's sample for each tank to be checked (appearance & key points) and compared to loading quality
- Ship's manifold at start discharge of each tank
- Shore line as near as possible to the nominated shore tanks
- Shore tank's first foot samples, (only in case of an empty shore tank before transfer)
- Ship/Shore manifold during the discharge ship's (individual) cargo tanks
- Shore's (individual) cargo tanks after discharge



STS (ship-to-ship) Operation:

Mother Vessel

- Ship's sample for each tank to be checked and compared to loading quality
- Ship's manifold at start discharge of each tank
- Ship/shore manifold during the discharge
- Ship sample of the tanks after discharge (if remaining cargo on board)

Daughter Vessel

- If any OBQ -Ship's sample for each tank to be checked and compared to loading quality for compatibility
- Ship manifold at the beginning of the loading
- Ship's first foot samples for each tank. Samples to be taken from all cargo tanks to be checked and compared to shore quality, at least to key points
- Ship's (individual) cargo tanks after loading – UML (Upper Middle and Lower level) or running samples to be retained in single or commingled to make an average pondered composite

On board of Daughter vessel for the receivers – the following samples should be made available:

- Ship tank(s) of Mother Vessel/s before discharge
- Shore line at the beginning of the loading
- First foot for each individual ship's tank
- Individual ship's tank after loading
- Daughter ship's Composite sample

[For further information, please contact your local Marine Risk Consultant.](#)

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