Chemical Tankers – Basic — study guide

Chemical tankers carry cargoes that may be toxic, corrosive, flammable or reactive, so the rules are strict about heating, segregation, containment and identification. This guide covers heating systems, pipeline safety, the IBC Code and deck cooling.[1]

Cargo heating

Molasses and edible oils can be heated using high-pressure saturated steam. Molasses should be discharged at about **41 °C**. **Thermal oil heating systems** are suited to cargoes that react violently with water and to high-temperature cargoes. When loading molasses, foaming can affect the vessel's radar ullaging system, so ullages must be cross-checked.

Pipeline and segregation safety

Where possible, interconnecting pipelines should have their pipe spool pieces removed and blind flanges fitted — a positive barrier against cargo passing where it should not. Incompatible chemicals must be stored apart, because some chemicals react if they come into contact with one another.

Deck cooling

Main deck cooling can be achieved by using redundant fire hoses with multiple holes made along their length, spread on the deck and connected to the fire main. This method has been proven to reduce the main deck heat and the vapour-space temperature by **15 °C or more**.

Identification and the IBC Code

If a cargo is supplied under a trade name, the correct shipping name can be found in the IBC Code index of chemicals, by using one of the chemical software packages, or by asking the operator or charterer. If a chemical is **not listed** in the IBC Code's index, its transport is **not allowed without permission from the vessel's Flag State**.

The Tripartite Agreement

The Tripartite Agreement involves three parties: the producing state, the user state and the transport provider state — the framework under which a chemical not in the Code may be carried.

Key facts to remember

- Molasses discharged at ~41 °C; molasses/edible oils can be heated with high-pressure saturated steam.
- Thermal oil heating: cargoes that react violently with water, and high-temperature cargoes.

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- Interconnecting lines: remove spool pieces and fit blind flanges. Store incompatible chemicals apart.
- Deck cooling with perforated fire hoses connected to the fire main can cut deck/vapour-space temperature by 15 °C or more.
- Trade name → shipping name: IBC Code index, software package, or operator/charterer.
- Not listed in the IBC Code index → not allowed without Flag State permission. Molasses foaming affects radar ullaging.
- Tripartite Agreement: producing state, user state, transport provider state.

Sources

1. IMO International Bulk Chemical Code (IBC Code) — carriage requirements and index of products (with MARPOL Annex II).