

- (iii) Cargo tank cool-down system.
- (iv) Cargo tank warm-up or vaporization system.
- (v) Gas main system.
- (vi) Cargo tank or compressor relief system and blocked liquid or gas relief system.
- (vii) Inerting system.
- (viii) Boil-off gas compressor or reliquefaction system.
- (ix) Gas detection systems.
- (x) Alarm or safety indication systems.
- (xi) Cargo jettisoning system.
- (xii) The system for using boil-off gas as fuel.
- (10) A description of cargo loading and discharge operations, including simultaneous handling of multigrades of cargo and ballast.
- (11) A description of cargo operations during the voyage.
- (12) A description of cargo tank cool-down and warm-up operations including purging with inert gas and air.
- (13) A description of hull and cargo tank temperature monitoring systems.
- (14) A description of gas detection systems and alarm or safety systems.
- (15) A description of the following conditions and their symptoms, including emergency measures and corrective actions:
  - (i) Cargo or ballast valve malfunction.
  - (ii) Low cargo tank gas pressure.
  - (iii) High fill level shutdown.
  - (iv) Gas compressor shutdown.
  - (v) Hull cold spots.
  - (vi) Cargo piping leaks.
  - (vii) Primary or secondary barrier failure.
  - (viii) Hold boundary structural failure.
  - (ix) Fire in vent mast head.
  - (x) Reliquefaction plant failure.
  - (xi) Vaporizer malfunction or failure.
  - (xii) Piping or cargo valve freeze-up.
- (16) Any other matters relating to operation of the cargo systems.
- (17) The operational means to maintain the vessel in a condition of positive stability in accordance with the loading and stability manual under § 154.1809 through all conditions of:
  - (i) Loading and dewatering; and
  - (ii) Unloading and ballasting.
- (b) The master shall ensure that the cargo manual is kept up-to-date.

**§ 154.1812 Operational information for terminal personnel.**

The master shall ensure that terminal personnel are told the operational information required by § 154.1810(a)(17).

**§ 154.1814 Cargo information cards.**

(a) No person may operate a vessel unless a cargo information card for each cargo being transported is carried either in the wheelhouse, in the ship's office, or in another location easily accessible to the person in charge of the watch.

(b) When a vessel is moored at a terminal, the master shall ensure that a set of information cards is in the possession of the terminal's person in charge of cargo transfer operations.

(c) Each card must be at least 17 cm × 24 cm (6¾ in. × 9½ in.), have printing on one side only, and must contain the following information about the cargo:

- (1) Name as listed in Table 4.
- (2) Appearance.
- (3) Odor.
- (4) Safe handling procedures, including special handling instructions, and handling hazards.
- (5) Procedures to follow in the event of spills, leaks, or uncontrolled cargo release.
- (6) Procedures to be followed if a person is exposed to the cargo.
- (7) Firefighting procedures and materials.

**§ 154.1816 Cargo location plan.**

The master shall ensure that:

(a) A cargo location plan is prepared that gives:

- (1) The location and number of each cargo tank; and
- (2) The name of the cargo in each tank;

(b) One cargo location plan is kept with the sets of cargo information cards required under § 154.1814; and

(c) The cargo names in the cargo location plan do not differ from the names of the cargoes listed in Table 4.

**§ 154.1818 Certification of inhibition.**

(a) Except as provided in § 154.1740(b), no person may operate a vessel carrying butadiene or vinyl chloride without carrying in the wheelhouse written