

# USCG Marine Safety Center Tank Group Characteristics Loading Form (TGCLF) for Tank Vessels Subject to MARPOL Annex II

*This form applies to any vessel operating on OCEAN routes desiring to carry NLS cargoes for International Trade  
[Holds valid international certificates or voluntarily complies with the 2007 revisions to MARPOL Annex II]*

## 1. Vessel Information

Vessel Name(s): \_\_\_\_\_

Official Number(s): \_\_\_\_\_

Hull Number(s): \_\_\_\_\_

Shipyard: \_\_\_\_\_

Date: \_\_\_\_\_ / Revision: \_\_\_\_\_

## 2. Bulk Liquid Cargo Authority Summary

Maximum Cargo Density: \_\_\_\_\_ (lbs/gal)

NLS Category Authorized:    X                    Y                    Z                    OS                    Annex I

Does the Vessel have an approved P&A Manual?    Yes                    No

Is the Vessel compliant with MARPOL Annex I?    Yes                    No

Flammability Grades Desired: \_\_\_\_\_  
*(46 CFR 30.10-15 and 30.10-22)*

## 3. Supplemental Information for Cargo Authority

List Serial Numbers for all prior Cargo Authority or Procedures & Arrangements Manual Approval Letters:

\_\_\_\_\_

Notes Section:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## 4. Cargo Tank Group Characteristics

*(Complete the following section for each tank group by filling in the requested information or choosing the appropriate characteristics)*

Tank Group Designations Requested (A, B, etc.): \_\_\_\_\_

Tanks in Tank Group (#1P,#2C,etc.): \_\_\_\_\_

Ship Type: 46 CFR 153.230 I II III  
 IBC 2.1.2 1 2 3  
*(46 CFR 153.230 – 153.232, IBC 2.1.2)*

Tank Types: 1: Independent (IBC 4.1.1)  
 2: Integral (IBC 4.1.2)  
 G: Gravity (IBC 4.1.3)  
 P: Pressure (IBC 4.1.4)

Cargo Tank Venting: PV (Controlled) Open  
*(46CFR 153.355 – 153.358 and IBC Chapter 8)*

Does the vessel have High Velocity Vents? Yes No  
*(IBC Chapter 8: Allows for 3m vent outlet instead of 6m)*

Cargo Venting System (Most Stringent Only): B/3 6m 4m  
*(46 CFR 153.350, 46 CFR 153.352, and IBC Chapter 8.3)*  
 3m (High-Velocity Vents) NR

Tank Environmental Control: Inert: Inerting (IBC 9.1.2.1)  
 Pad: Liquid or gas padding (IBC 9.1.2.2)  
 Dry: Drying (IBC 9.1.2.3)  
 Vent: Ventilation (IBC 9.1.2.4)  
 N/A: Meets no special requirements of IBC Code

Is there any electrical equipment located within the hazardous location? Yes No  
*(46 CFR 111.105-1/ National Electric Code/ IEC 60079-1, IBC Chapter 10)*

If yes: Indicate CFR Electrical hazard group \_\_\_\_\_  
 Indicate IBC temperature classification \_\_\_\_\_  
 Indicate IBC Apparatus Group \_\_\_\_\_  
 Indicate IBC Flashpoint Yes No NF

Cargo Tank Gauging: Closed Restricted Open  
*(46 CFR 153.404 – 153.406 and 46 CFR 153.935 and IBC 13.1.1)*

Vapor Detection: F: Flammable vapors  
 T: Toxic vapors  
 No: Meets no special requirements

Fire Protection: A: Alcohol-resistant foam or multi-purpose foam  
 B: Regular foam; not of alcohol-resistant type

C: Water-spray  
 D: Dry chemical  
 No: Meets no special requirements

Emergency Equipment: Yes (IBC 14.3.1) No

**46 CFR 153.236 Prohibited Materials of Construction**

- (a) Aluminum or aluminum alloys
- (b) Copper or copper alloys
- (c) Zinc, galvanized steel or alloys with > 10 wt% Zn
- (d) Magnesium
- (e) Lead
- (f) Silver or silver alloys
- (g) Mercury

**46 CFR 153.238 Required Materials of Construction**

- (a) Al, SS, or Steel w/tank lining
- (b) < 98% concentrations Al or SS
- (c) 304L or 316 SS
- (d) Solid Austenitic SS
- (e) SS or Steel w/tank lining

Special 46 CFR 153/IBC Design and Material Requirements (select requirements that the tank group meets)

**46 CFR 153 Requirements (Similar IBC Regs in parentheses)**

**IBC Code Requirements**

252	Independent Cargo tank	15.2	Ammonium nitrate solution (93% or less)
		15.3	Carbon Disulfide
266	Tank Linings	15.4	Diethyl ether
316	Pump Room Ventilation	15.5	Hydrogen peroxide solutions
336	Room Requirement	15.6	Motor fuel anti-knock compounds
355	PV Venting System	15.7	Phosphorus, yellow or white
372	High vapor pressure requirement <b>(IBC 15.14)</b>	15.8	Propylene Oxide/Ethylene Oxide (See Citation)
400	Cargo gauging requirements	15.8 (var.)	Butylene Oxide
408 (all)	Overflow control	15.9	Sodium chlorate solution (50% or less by mass)
408 (a)	Overflow control, (a) only	15.10	Sulphur (molten)
409	High Level Alarms <b>(IBC 15.19)</b>	15.11(all)	Acids
440 (a, b)	Temperature sensors <b>(IBC 15.21)</b>	15.11.1	Tank boundary
440 (a)(1)	Temperature sensors meeting (a)(1) only	15.11.2	Tank lining elasticity
440 (c)	Portable thermometer (Open/Restricted Gauging Only – Alternate Compliance)	15.11.3	Plating thickness for corrosive cargoes
465	Flammable Vapor Detection	15.11.4	Flange shields, drip trays
488	High melting point NLS	15.11.5	Electrical arrangements IAW 10.1.4
500	Inert Gas Systems	15.11.6	Separation from oil tanks
501	Dry Inert Gas System	15.11.7	Leak detection

515	Extremely Flammable Cargoes	15.11.8	Corrosion resistance – Bilge/Drainage systems
520	Carbon Disulfide ( <b>IBC 15.3</b> )	15.12 (all)	Toxic products
525 (all)	Toxic Cargoes ( <b>IBC 15.12</b> )	15.12.1	Vent Height/Location
525 (a)	Piping	15.12.2	Vapor Return
525 (b)	PV Setting > 21kPa	15.12.3	Stowage
525 (c)	Pumps/Valves	15.12.3.2	Separate Piping
525 (d)	Heat Transfer	15.12.3.3	Vapor piping segregation
525(e)	Cargo Separation	15.12.4	PV Setting > 0.2 bar gauge
525 (f)	Vapor Retention	15.13	Cargoes protected by additives
526	Toxic Vapor Detectors	15.14	Vapour Pressure >0.1013MPa at 37.8°C
527	Toxic Vapor Protection	15.15	Hydrogen sulphide (H <sub>2</sub> S) detection equipment
530	Alkylene Oxides (See Citation)	15.16.2	Water Contamination Prohibited
545	Liquid Sulfur ( <b>IBC 15.10</b> )	15.17	Increased Ventilation Requirements
554	Acids ( <b>IBC 15.11</b> )	15.18	Special Cargo Pump Room Requirements
555	Inorganic Acids	15.19 (all)	Overflow Control
556	Sulfuric Acid/Oleum	15.19.6	High Level Alarms (meets 15.19.1 thru 15.19.5)
557	Hydrochloric Acid	15.20	Alkyl (C7-C9) nitrates, all isomers
558	Phosphoric Acid	15.21	Temperature sensors
559	Nitric Acid (Less than 70%)		
560	Alkyl (C7-C9) nitrates ( <b>IBC 15.20</b> )		
602	Cargoes Reactive with Water ( <b>IBC 15.6.2</b> )		