

EMSA Workshop on Cargo Residues

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MARPOL Annex II Residues

Janet Strode
General Manager

IPTA



Noxious Liquid Substance

- Any bulk liquid that does not meet the definition for oil as defined in MARPOL Annex I
- Might include, inter alia:
 - petrochemicals
 - solvents
 - waxes
 - lube oil additives
 - vegetable oils and animal fats

MARPOL Annex II defines circumstances under which residues of NLS might be discharged into the marine environment

- Cargoes assigned pollution category
- Stripping Limits defined for each category
- Discharge requirements for each category

Categorization of NLS

- Category X: Major hazard – *prohibition of discharge into the marine environment*
- Category Y: Hazard – limitation on quality and quantity of discharge into marine environment
- Category Z: Minor hazard – less stringent limitation on quality and quantity of discharge into marine environment
- Other Substances: considered to present no harm – not subject to any of the requirements of the Annex

Stripping Requirements

	New Ships	Existing IBC	Existing BCH	Other Ships
X	75 litres	100 litres + 50 litres tolerance	300 litres + 50 litres tolerance	No carriage
Y	75 litres	100 litres + 50 litres tolerance	300 litres + 50 litres tolerance	No carriage
Z	75 litres	300 litres + 50 litres tolerance	900 litres + 50 litres tolerance	New Ships: 75 litres Existing Ships: empty tanks to the most practicable extent
OS	Unrestricted	Unrestricted	Unrestricted	Unrestricted

Stripping tests carried out (with water) according to procedure outlined in Appendix 5 of Annex II and results recorded in P and A Manual

P and A Manual contains procedures to be followed during stripping of each tank

Providing vessel strips according the conditions laid down in the P and A Manual, she is deemed to be in compliance

If these conditions are not met, prewash must be performed

Discharge Requirements

X	All Prewash. Subsequent washings to be discharged under same conditions as Cat Y
Y	High viscosity and Solidifying Substances Prewash, the rest efficient stripping Proceeding en route at 7 knots; At least 12 miles from land; Depth of at least 25 m; Discharge below waterline
Z	All efficient stripping Proceeding en route at 7 knots; At least 12 miles from land Depth of at least 25 m; New Ships: Discharge below waterline

Special Areas

- Since the entry into force of the revised MARPOL Annex II in January 2007, the only Special Area under MARPOL Annex II is the Antarctic

Regulation 13.6

- A tank from which a substance in Category X has been unloaded must be prewashed before the ship leaves the port of unloading.
- Resulting residues to be discharged to a reception facility until the concentration of the substance in the effluent is at or below 0.1% by weight; or
- Prewash to be carried out in accordance with procedures in Appendix 6
- Tank washings discharged to a reception facility
- Must be marked in Cargo Record Book and endorsed by surveyor
- Subsequent washings to be discharged according to requirements for Category Y

Examples of Category X Cargoes

Acetochlor

Alkanes (C6–C9)

Alkyl (C5–C8) benzenes

Butene Oligomer

Butyl Benzene

Chlorinated paraffins

Coal tar

Coal tar pitch (molten)

Creosote (Coal tar)

Cycloheptane

Decanoic acid

Decene

Heptane

Motor fuel anti-knock compounds

Napthalene (molten)

Nonane

Nonyl phenol

Octane

Olefin mixtures (C5–C15)

alpha-Olefins (C6–C18) mixtures

Propylene tetramer

Triethyl benzene

MARPOL Annex II Prewash Clause

- (a) If before sailing from discharge port a mandatory prewash of cargo tanks is necessary in accordance with the requirements of Annex II of MARPOL 73/78, it is to be performed in direct continuation upon completion of discharging cargo, in conformity with vessel's "Procedures and Arrangements Manual" and in accordance with local port regulations. Time used for such mandatory prewash shall be for Owners' account.

(b) On being notified by Owners, or their representatives, upon sailing from load port or latest when discharging port(s) is (are) nominated, *Charterers shall provide suitable and adequate facilities which shall be immediately available and accessible to the vessel upon completion of discharge for the reception of such washing water/cargo residue mixture originating from cargo carried under this Charter Party and respective Bill(s) of Lading.*

Regulation 13.7.1.2

- “If the unloading of a substance in category Y or Z is not carried out in accordance with the manual, a prewash shall be carried out before the ship leaves the port of unloading, unless alternative measures are taken to the satisfaction of the surveyor.....”

Regulation 13.7.1.3

- “for high viscosity or solidifying substances in category Y, the following shall apply:
- a prewash procedure as specified in Appendix 6...
- The residue/water mixture generated during the prewash shall be discharged to a reception facility until the tank is empty

Regulation 1.17.1

- “*High Viscosity Substance* means a noxious liquid substance in category X or Y with a viscosity equal to or greater than 50 mPa.s at the unloading temperature.”

Regulation 1.15.1

- “*Solidifying Substance* means a noxious liquid substance which:
 - 1. in the case of a substance with a melting point of less than 15°C, is at a temperature of less than 5°C above its melting point at the time of unloading; or
 - 2. in the case of a substance with a melting point of equal to or greater than 15°C, is at a temperature of less than 10°C above its melting point at the time of unloading

IBC Code Regulation 16.2.6

- “... the cargo’s viscosity at 20°C shall be specified on a shipping document, and if the cargo’s viscosity exceeds 50mPa.s at 20°C the temperature at which the cargo has a viscosity of 50m.Pa.s shall be specified in the shipping document.”

IBC Code regulation 16.2.9

- “...the cargo’s melting point shall be indicated in the shipping document”

Product	Viscosity in Mpa/s					Discharge Temp – Deg C	
	20°	30°	40°	50°	60°	Min	Max
Castor oil	1000	454	232	127	60	30	35
Cottonseed oil	80	55	38			20	25
Groundnut oil	78	50	32	13		20	25
Olive oil	80	55	40	30		15	20
Rapeseed oil (LEAR & HEAR)	80	60	40	30		15	20
Sesame oil	65			25		15	20
Soyabean oil	65	45	33	25		20	25
Sunflowerseed oil	68	47	35	26		15	20

BIMCO/IPTA Vegetable Oil Tank Pre-wash Clause

- (a) If following discharge of the cargo the Vessel is required to pre-wash its cargo tanks prior to leaving the discharge port in order to comply with MARPOL 73/78 Annex II or any other national or local laws or regulations, the Charterers shall pay compensation in an amount equivalent to the rate of demurrage stipulated in the Charter Party for all time after completion of discharge until the completion of washing and disposal of the tank washings and/or cargo residues. *The disposal of tank washings and/or cargo residues shall be the responsibility of and be arranged and paid for by the Charterers.*
- (b) In the event that the Vessel is ordered to vacate the discharging berth to perform the pre-washing of its cargo tanks as provided under Sub-clause (a), any shifting expenses shall be for the Charterers' account.

In certain cases it is possible to raise the discharge temperature of the cargo to bring it out of the high viscosity range

Where this is done, documentation should clearly record the charterer's heating instructions and the heating record.

Annex II does not require a surveyor to be present or endorse the cargo record book for a prewash of high viscosity or solidifying substances in Category Y, but many owners will ask a surveyor to attend if possible

Exemptions

- Regulation 13.4 states that government of receiving state may grant an *exemption* for a prewash where it is satisfied that:
 - the tank is to be backloaded with the same or a compatible substance and will not be washed; or
 - confirmation has been received in writing that adequate reception facilities are available at a subsequent port and tanks will not be washed at sea; or
 - residues will be removed by ventilation
- Surveyor must endorse cargo record book

THANK YOU

Janet Strode
General Manager
IPTA

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