

Glossary

The definitions in this glossary have been written in simple terms specifically for the cargo resistance guide. A more detailed description for most of the terms is possible but, in the context of the guide, is not considered necessary.

Acetate – an ester formed from acetic acid and an alcohol

Acid – a substance having a pH between 1 and 7

Acid Value – usually related to vegetable oil or fat cargoes and is defined as the number of milligrams of potassium hydroxide required to neutralise the free fatty acids present in one gram of oil or fat (see also Free Fatty Acid)

Aliphatic – carbon atoms linked in the form of straight or branched chains but not in the form of a benzene ring

Alkali – a substance having a pH between 7 and 14

Amine – a chemical grouping based on a nitrogen atom linked to an aliphatic or aromatic structure

Aromatic – carbon atoms linked in the form of a benzene ring structure

Benzene Ring – 6 carbon atoms in the form of a ring structure with a hydrogen atom attached to each carbon and is the basic building block of all aromatic chemicals

Curing – the chemical reaction that takes place after the mixing of 2 component paints which results in a chemically resistant film

Ester – a material formed by the reaction of an organic acid and an alcohol

Fatty Acid – a long chain (usually aliphatic) organic acid

Gas Free – this refers to a steady state 'gas free' condition, meaning the atmosphere in the tank is "safe for man-entry". The most common value taken for 'gas free' is that the atmosphere is below the LEL (Lower Explosive Limit) and that sufficient oxygen is present. Maximum allowable concentrations of any toxins must also be taken into account.

Glyceride – an ester formed from glycerol and an organic acid

Hydrocarbon – an organic compound made up of carbon and hydrogen. It can be either aliphatic (eg hexane) or aromatic (eg benzene) in nature

Hydrolysis – a chemical reaction between water and another substance

IBC Code – International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk

I.M.O. – International Maritime Organisation

I.M.O. Ship Type – Ship type 1, 2 or 3 refers to the design of ship needed to carry a particular cargo depending on its environmental and safety profile. The designs are outlined in the IBC Code (see above). Type 2(k) relates to the provision for Ship Type identified in *column e* of chapter 17 of the IBC Code that might be subject to regulation 4.1.3 of Annex II of MARPOL 73/78

Inert Gas – this can either be nitrogen supplied by an onboard nitrogen plant, or water scrubbed exhaust gas with a high content of nitrogen and carbon dioxide, and with a low content of oxygen. The composition of water scrubbed exhaust gas will depend on the oil used and engine efficiency

Inorganic – not based on a carbon structure eg caustic soda, phosphoric acid

Isomers – materials having the same chemical formula but having different structures and properties

MARPOL 73/78 – International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1978

MARPOL Pollution category – this refers to the pollution categories designated in the “MARPOL 73/78” regulations:

1	X to Z	Pollution category of the cargo as evaluated by MARPOL. “X” means highest environment impact
2	O.S.	Pollution category is evaluated, but outside categories X to Z.
3	Annex I	Included in “List of Oils”

Olein – the triglyceride ester of oleic acid but in the palm oil industry it usually refers to the liquid fraction of the oil

Organic – based on a carbon structure but also containing other elements eg hydrogen, oxygen

pH – a measure of acidity or alkalinity on a scale of 1 to 14. 1 is strongly acidic, 7 is neutral and 14 is strongly alkaline

Post curing – the input of heat to a coating after the initial cure has taken place to enhance the chemical resistance

Proper Shipping Name – these are cargo names that have been designated by the IMO for each cargo. These names are in upper case in the International Paint Cargo Resistance Guide (see Synonym)

Shop primer – a thin coating that is applied to new steel in a newbuilding shipyard to protect it from corrosion during the building process

Stearin – the triglyceride ester of stearic acid but in the palm oil industry it usually refers to the solid fraction of the oil

Synonym – this is another name that a particular chemical or composition may be known as. A chemical can have a number of different names or synonyms. For example, METHYL ALCOHOL is a Proper Shipping Name; however this cargo is also known as methanol, wood alcohol etc – these are Synonyms. Synonyms are in lower case in the International Paint Cargo Resistance Guide (see Proper Shipping Name)

UN Number (United National Serial Number) – these are assigned to cargoes in the “IBC Code” and in “MARPOL 73/78”

USCG Number (US Coast Guard Number) – these are cargo categories assigned by the US Coast Guard in Code of Federal Regulations CFR 46 Part 150.

Water Miscibility – the ability of a liquid to mix fully with water and not separate