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EVALUATION OF SAFETY AND
POLLUTION HAZARDS OF CHEMICALS
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**REVIEW OF THE RECOMMENDATION FOR MATERIAL SAFETY DATA SHEETS
FOR MARPOL ANNEX I CARGOES AND MARINE FUELS**

Submitted by INTERTANKO

SUMMARY

Executive summary: This document presents a comparison between the MSDS standard format in MSC.150(77) and the MSDS standard formats in GHS, ISO 11014, in the American National Standard for Hazardous Industrial Chemicals – MSDS Preparation (ANSI Z-400.1-2004) and the U.S. OSHA MSDS as required for in 29 CFR 1910.1200, HAZCOM

Action to be taken: Paragraph 3

Related documents: Resolution MSC.150(77); BLG 12/12 (INTERTANKO), Globally Harmonized System of Classification and Labelling of Chemicals (GHS), United Nations, 2005, ISO 11014-1:2003 DRAFT Safety Data Sheet for Chemical Products, U.S. DOL, OSHA, 29 CFR 1910.1200, HAZCOM

General

1 The annex to this document presents a comparison between the MSDS standard format in resolution MSC.150(77) and the MSDS standard formats in GHS, ISO 11014, in the American National Standard for Hazardous Industrial Chemicals – MSDS Preparation (ANSI Z-400.1-2004) and the U.S. OSHA MSDS as required for in 29 CFR 1910.1200, HAZCOM.

2 It is submitted with the aim to facilitate the Sub-Committee's deliberations on the assessment of the adequacy of the current MSDS standard format given in resolution MSC.150(77).

Action requested of the Sub-Committee

3 The Sub-Committee is invited to note the information provided and take action as appropriate.

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ANNEX

COMPARISON BETWEEN THE MSDS STANDARD FORMAT IN RESOLUTION MSC.150(77) AND THE MSDS STANDARD FORMATS IN GHS, ISO 11014, IN THE AMERICAN NATIONAL STANDARD FOR HAZARDOUS INDUSTRIAL CHEMICALS - MSDS PREPARATION (ANSI 2-400.1-2004) AND THE US OSHA MSDS

Reference: US Department of Labour Occupational Safety and Health Administration, "A Guide to the Globally Harmonized System of Classification and Labelling of Chemicals"

MSDS Sections	MSC 150(77)	GHS SDS¹	ISO MSDS²	OSHA MSDS³
1. Product and company identification	Name of the category – see supporting guidelines. The name of the substance. Description on the Bill of Lading. Other means of identification. Supplier's details etc. Emergency phone number.	GHS product identifier. Other means of identification. Recommended use of the chemical and restrictions on use. Supplier's details (including name, address, phone number etc). Emergency phone number.	GHS product identifier. Other means of identification. Recommended use of the chemical and restrictions on use. Supplier's details (including name, address, phone number etc). Emergency phone number.	Product identity same as on label. Name address and telephone number of the manufacturer, distributor, employer or other responsible party.
2. Hazards identification	GHS classification of the substance /mixture and any regional information. Other hazards which do not result in classification (e.g., dust explosion hazard) or are not covered by the GHS.	GHS classification of the substance/mixture and any regional information. GHS label elements, including precautionary statements. (Hazard symbols may be provided as a graphical reproduction of the symbols in black and white or the name of the symbol, e.g., flame, skull and crossbones.) Other hazards which do not result in classification (e.g., dust explosion hazard) or are not covered by the GHS.	GHS classification of the substance/mixture and any regional information. GHS label elements, including precautionary statements. (Hazard symbols may be provided as a graphical reproduction of the symbols in black and white or the name of the symbol, e.g., flame, skull and crossbones.) Other hazards which do not result in classification	Health hazards including acute and chronic effects, listing target organs or systems signs & symptoms of exposure conditions generally recognized as aggravated by exposure Primary routes of exposure If listed as a carcinogen by OSHA, IARC, NTP Physical hazards, including the potential for fire, explosion, and reactivity

			(e.g., dust explosion hazard) or are not covered by the GHS.	
3. Composition/ in-formation on ingredients	<p>Common name, synonyms, etc.</p> <p>Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance.</p> <p>The chemical identity and concentration or concentration ranges of all ingredients which are hazardous within the meaning of the GHS.</p> <p>See supporting guidelines for each Annex I category type.</p>	<p>Substance</p> <p>Chemical identity</p> <p>Common name, synonyms, etc.</p> <p>CAS number, EC number, etc.</p> <p>Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance.</p> <p>Mixture</p> <p>The chemical identity and concentration or concentration ranges of all ingredients which are hazardous within the meaning of the GHS and are present above their cut-off levels.</p> <p>Cut-off level for reproductive toxicity, carcinogenicity and category 1 mutagenicity is ³ 0.1%.</p> <p>Cut-off level for all other hazard classes is ³ 1%.</p>	<p>Substance</p> <p>Chemical identity</p> <p>Common name, synonyms etc.</p> <p>CAS number, EC number, etc.</p> <p>Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance.</p> <p>Mixture</p> <p>The chemical identity and concentration or concentration ranges of all ingredients which are hazardous within the meaning of the GHS and are present above their cut-off levels.</p> <p>Cut-off level for reproductive toxicity, carcinogenicity and category 1 mutagenicity is³ 0.1%.</p> <p>Cut-off level for all other hazard classes is ³ 1%.</p>	<p>Chemical and common name of ingredients contributing to known hazards</p> <p>For untested mixtures, the chemical & common name of ingredients at 1% or more that present a health hazard and those that present a physical hazard in the mixture</p> <p>Ingredients at 0.1% or greater, if carcinogens</p>

4. First-aid measures	<p>Description of necessary measures, subdivided according to the different routes of exposure, i.e. inhalation, skin and eye contact and ingestion.</p> <p>Most important symptoms/effects, acute and delayed.</p> <p>Indication of immediate medical attention and special treatment needed, if necessary.</p>	<p>Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact and ingestion.</p> <p>Most important symptoms/effects, acute and delayed.</p> <p>Indication of immediate medical attention and special treatment needed, if necessary.</p>	<p>Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact and ingestion.</p> <p>Most important symptoms/effects, acute and delayed.</p> <p>Indication of immediate medical attention and special treatment needed, if necessary.</p>	Emergency & first aid procedures.
5. Fire-fighting measures	<p>Suitable extinguishing media.</p> <p>Special protective equipment and precautions for fire-fighters.</p>	<p>Suitable (and unsuitable) extinguishing media.</p> <p>Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products).</p> <p>Special protective equipment and precautions for fire-fighters.</p>	<p>Suitable (and unsuitable) extinguishing media.</p> <p>Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products).</p> <p>Special protective equipment and precautions for fire-fighters.</p>	<p>Generally applicable control measures.</p> <p>Flammable property information such as flashpoint.</p> <p>Physical hazards including the potential for fire, explosion, and reactivity.</p>
6. Accidental release measures	<p>Personal precautions, protective equipment and emergency procedures.</p> <p>Environmental precautions.</p> <p>Methods and materials for containment and clean up.</p>	<p>Personal precautions, protective equipment and emergency procedures.</p> <p>Environmental precautions.</p> <p>Methods and materials for containment and cleaning up.</p>	<p>Personal precautions, protective equipment and emergency procedures.</p> <p>Environmental precautions.</p> <p>Methods and materials for containment and cleaning up.</p>	Procedures for clean up of spills and leaks.
7. Handling and storage	<p>Precautions for safe handling</p> <p>Conditions for safe storage, including any incompatibilities.</p>	<p>Precautions for safe handling.</p> <p>Conditions for safe storage, including any incompatibilities.</p>	<p>Precautions for safe handling.</p>	<p>Precautions for safe handling & use, including appropriate hygienic practices.</p>

			Conditions for safe storage, including any incompatibilities.	
8. Exposure controls/ personal protection	Control parameters e.g., occupational exposure limit values. Appropriate technical precautions. Individual protection measures, such as personal protective equipment.	Control parameters (e.g., occupational exposure limit values or biological limit values). Appropriate engineering controls. Individual protection measures, such as personal protective equipment.	Control parameters (e.g., occupational exposure limit values or biological limit values). Appropriate engineering controls. Individual protection measures, such as personal protective equipment.	General applicable control measures. Appropriate engineering controls and work practices. Protective measures during maintenance & repair. Personal protective equipment. Permissible exposure levels, threshold limit values, listed by OSHA, ACGIH, or established company limits.
9. Physical and chemical properties	See supporting guidelines for each Annex I category type – See Appendix 2	Appearance, Odour, Odour threshold, pH, melting point/freezing point, initial boiling point and boiling range flash point, evaporation rate flammability (solid, gas), upper/lower flammability or explosive limits, vapour pressure vapour density, relative density: solubility(ies), partition coefficient: n-octanol/water auto-ignition temperature decomposition temperature	Appearance, Odour, Odour threshold, pH, melting point/freezing point. Initial boiling point and boiling range, flash point, evaporation rate, flammability (solid, gas). Upper/lower flammability or explosive limits, vapour pressure. Vapour density, relative density: Solubility(ies), partition coefficient: n-octanol/water. Auto-ignition temperature. Decomposition temperature.	Characteristics of hazardous chemicals such as vapor pressure & density. Physical hazards including the potential for fire, explosion, and reactivity.

<p>10. Stability and reactivity</p>	<p>Chemical stability. Possibility of hazardous reactions. Conditions to avoid (e.g., static discharge).</p>	<p>Chemical stability. Possibility of hazardous reactions. Conditions to avoid (e.g., static discharge, shock or vibration). Incompatible materials, Hazardous decomposition products.</p>	<p>Chemical stability. Possibility of hazardous reactions. Conditions to avoid (e.g., static discharge, shock or vibration). Incompatible materials. Hazardous decomposition products.</p>	<p>Organic peroxides, pyrophoric, unstable # (reactive), or water-reactive hazards Physical hazards, including reactivity and hazardous polymerization</p>
<p>11. Toxicological information</p>	<p>Concise but complete and comprehensible description of the various toxicological (health) effects and the available data used to identify those effects, including: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact); Symptoms related to the physical, chemical and toxicological characteristics; Delayed and immediate effects and also chronic effects from short and long term exposure; Numerical measures of toxicity</p>	<p>Concise but complete and comprehensible description of the various toxicological (health) effects and the available data used to identify those effects, including: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact); Symptoms related to the physical, chemical and toxicological characteristics; Delayed and immediate effects and also chronic effects from short- and long-term exposure. Numerical measures of toxicity</p>	<p>Concise but complete and comprehensible description of the various toxicological (health) effects and the available data used to identify those effects, including: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact); Symptoms related to the physical, chemical and toxicological characteristics; Delayed and immediate effects and also chronic effects from short- and long-term exposure; Numerical measures of toxicity</p>	<p>See also Section 2 [health hazards Including acute and chronic effects, listing target organs or systems signs & symptoms of exposure primary routes of exposure if listed as a carcinogen by OSHA, IARC, NTP]</p>

12. Ecological information	Ecotoxicity (aquatic and terrestrial, where available). Persistence and degradability. Bioaccumulative potential. Mobility in soil. Other adverse effects.	Ecotoxicity (aquatic and terrestrial, where available). Persistence and degradability. Bioaccumulative potential. Mobility in soil. Other adverse effect.s	Ecotoxicity (aquatic and terrestrial, where available). Persistence and degradability Bioaccumulative potential. Mobility in soil. Other adverse effects.	No present requirements.
13. Disposal considerations	Description of waste residues and information on their safe handling and methods of disposal, in line with MARPOL requirements.	Description of waste residues and information on their safe handling and methods of disposal, including any contaminated packaging.	Description of waste residues and information on their safe handling and methods of disposal, including any contaminated packaging.	No present requirements, See section 7.
14. Transport information	UN number. UN Proper shipping name. Transport Hazard class(es). Special precautions which a user needs to be aware of or needs to comply with in connection with transport (e.g., heating and carriage temperatures)	UN number. UN Proper shipping name. Transport Hazard class(es). Packing group, if applicable. Marine pollutant (Y/N). Special precautions which a user needs to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises.	UN number. UN Proper shipping name. Transport Hazard class(es). Packing group, if applicable. Marine pollutant (Y/N). Special precautions which a user needs to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises.	No present requirements.
15. Regulatory information	Safety, health and environmental regulations specific for the product in question.	Safety, health and environmental regulations specific for the product in question.	Safety, health and environmental regulations specific for the product in question.	No present requirements.

16. Other information	Version No. Date of issue. Issuing source.	Other information including information on preparation and revision of the SDS.	Other information including information on preparation and revision of the SDS.	Date of preparation of MSDS or date of last change.
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1. Globally Harmonized System of Classification and Labelling of Chemicals (GHS), United Nations, 2005.
 2. ISO 11014-1:2003 DRAFT Safety Data Sheet for Chemical Products.
 3. U.S. DOL, OSHA, 29 CFR 1910.1200, HAZCOM
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