

ANNEXURE 11**Gap analysis for Safety Data Sheets**

GHS	SA Requirement	GHS Compliance
<p>Information must be presented using the following 16 headings in the order given below :</p> <ol style="list-style-type: none"> 1. Identification 2. Hazard(s) identification 3. Composition / information on ingredients 4. First-aid measures 5. Fire-fighting measures 6. Accidental release measures 7. Handling and storage 8. Exposure controls/ personal protection 9. Physical and chemical properties 10. Stability and reactivity 11. Toxicological information 12. Ecological information 13. Disposal considerations 14. Transport information 15. Regulatory information 16. Other information. 	<p>Information must be presented using the following 16 headings in the order given below (based on ISO 11014-1:1994):</p> <ol style="list-style-type: none"> 1. Product and company identification 2. Composition / information on ingredients 3. Hazard(s) identification 4. First-aid measures 5. Fire-fighting measures 6. Accidental release measures 7. Handling and storage 8. Exposure controls/ personal protection 9. Physical and chemical properties 10. Stability and reactivity 11. Toxicological information 12. Ecological information 13. Disposal considerations 14. Transport information 15. Regulatory information 16. Other information. 	<p>Non-compliant</p> <p>The first three headings are similar but not identical; the order of headings 2 and 3 are reversed.</p>

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<p>1. Identification of the substance or mixture and of the supplier</p> <ul style="list-style-type: none"> • 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 	<p>1. Product and company identification</p> <ul style="list-style-type: none"> • Product name as used on the label • The supplier <ul style="list-style-type: none"> ○ product code ○ Name ○ Address ○ Telephone number – normal & emergency ○ Telex/telefax number 	<p>Non-compliant</p> <p>Terminology differs, i.e. substance or mixture versus product.</p> <p>Product identification, recommended use and restrictions on use are dealt with in later sections.</p>
<p>2. Hazard(s) identification</p> <ul style="list-style-type: none"> • GHS classification of the substance/mixture and any national or 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. 	<p>3. Hazard(s) Identification</p> <ul style="list-style-type: none"> • The most important hazards and adverse human health effects • Environmental effects • Physical and chemical hazards • Where appropriate, specific hazards • Main symptoms • The classification of the product and the classification system used. • An emergency overview. 	<p>Non-compliant</p> <p>Does not specifically require GHS label elements or other hazards that do not result in classification.</p> <p>MSDSs do not include secondary hazards such as blast fumes.</p>

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<p>3. Composition/information on ingredients</p> <p><u>Substance</u></p> <ul style="list-style-type: none"> • Chemical identity • Common name, synonyms, etc. • CAS number, EC number, etc. • Impurities and stabilising additives which are themselves classified and which contribute to the classification of the substance. <p><u>Mixture</u></p> <ul style="list-style-type: none"> • 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. • For information on ingredients, the competent authorities rules for CBI take priority over the rules for product identification 	<p>2. Composition/information on ingredients:</p> <p><u>Substance</u></p> <ul style="list-style-type: none"> • The common chemical name/generic name/synonyms • Chemical Abstract Registry Number (CAS Number) • Ingredients contributing to the hazard <p><u>Preparations</u></p> <ul style="list-style-type: none"> • Information about the chemical nature (not the full composition) • Components/impurities contributing to hazard, with their chemical generic name & concentration/range of concentrations • Classification and hazard labelling • Classification system used 	<p>Non-compliant</p> <p><u>Substances</u></p> <p>Chemical identity not specified in this section for MSDS</p> <p>SDS more specific, ingredients including impurities and stabilising additives</p> <p><u>Mixtures/Preparations</u></p> <p>MSDS has more explicit requirements</p> <p>MSDS requirements do not state position on CBI</p>
<p>4. First aid measures</p> <ul style="list-style-type: none"> • Description of necessary measures, subdivided according to the different routes of exposure, i.e. inhalation, skin and eye contact and ingestion. • Most important symptoms/effects, acute and delayed. • Indication of immediate medical attention and special treatment needed, if necessary. 	<p>4. First aid measures</p> <ul style="list-style-type: none"> • First aid measures to be taken; which actions have to be avoided; Information shall be readily understandable by first-aider/victim. • Information shall be subdivided by exposure route: <ul style="list-style-type: none"> ○ Inhalation ○ Skin contact ○ Eye contact, and ○ Ingestion. 	<p>Compliant</p>

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	<ul style="list-style-type: none"> • Brief description of most important symptoms and effects (also see later section). • Advice for the protection of first-aiders <p>Notes to physician</p>	
<p>5. Fire-fighting measures</p> <ul style="list-style-type: none"> • Suitable (and unsuitable) extinguishing media. • Specific hazards arising from the chemical (e.g. nature of any hazardous combustion products). • Special protective equipment and precautions for fire-fighters 	<p>5. Fire-fighting measures</p> <ul style="list-style-type: none"> • Suitable and unsuitable extinguishing media. • Specific hazards with regard to fire-fighting measures • Specific measures for fire-fighting • Special equipment for the protective fire-fighters 	Compliant
<p>6. Accidental release measures</p> <ul style="list-style-type: none"> • Personal precautions, protective equipment and emergency procedures. • Environmental precautions. • Methods and materials for containment and cleaning up 	<p>6. Accidental release measures</p> <ul style="list-style-type: none"> • Personal precautions • Environmental precautions. • Methods of cleaning up, i.e. recovery, neutralisation and disposal 	<p>Partially compliant</p> <p>Does not specify protective equipment and emergency procedures; or, methods and materials for containment</p>
<p>7. Handling and storage</p> <ul style="list-style-type: none"> • Precautions for safe handling. • Conditions for safe storage, including any incompatibilities 	<p>7. Handling and storage</p> <p><u>Handling</u></p> <ul style="list-style-type: none"> • Appropriate technical measures (prevention of user exposure; prevention of fire and explosion) • Precautions for safe handling (ventilation, and prevention of aerosol and dust generation) • Safe handling advice (avoidance of incompatible materials). <p><u>Storage</u></p>	<p>Compliant</p> <p>MSDS requirements more explicit in terms of handling and storage</p>

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	<ul style="list-style-type: none"> • Appropriate technical measures and storage conditions (suitable, to be avoided including separation from incompatible products) • Information regarding safe packaging materials both recommended and not suitable. 	
<p>8. Exposure controls/personal protection</p> <ul style="list-style-type: none"> • Control parameters e.g. occupational exposure limit values or biological limit values. • Appropriate engineering controls. • Individual protection measures, such as personal protective equipment 	<p>8. Exposure controls/personal protection</p> <ul style="list-style-type: none"> • Give engineering measures to reduce exposure • Specific control parameters, i.e. limit values/biological standards (with dated references) • Recommended monitoring procedures (with references) • Recommendations on appropriate personal protective equipment for protection of respiratory system, hands, eyes, skin and body. What kind of protection and material. • Special precautions for products which only become hazardous when present in large amounts or high concentrations, or at elevated temperature or pressure. • If required, special hygiene measures. 	<p>Compliant</p> <p>MSDS requirements more explicit about individual protection measures</p>

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<p>9. Physical and chemical properties</p> <ul style="list-style-type: none"> • Appearance (physical state, colour etc). • 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 	<p>9. Physical and chemical properties</p> <ul style="list-style-type: none"> • This section shall include chemical product information on appearance, i.e. physical state, form, colour and odour. • Where applicable information on the following will be provided: <ul style="list-style-type: none"> ○ pH, with indication of concentration ○ Specific temperatures / temperature ranges at which changes in physical state occur (e.g. boiling point/boiling range) ○ Decomposition temperature ○ Flash point ○ Auto-ignition temperature ○ Explosion properties ○ Vapour pressure. ○ Vapour density. ○ Density. ○ Solubility, with indication of the solvents ○ Octanol / water partition coefficient ○ Other data relevant to the safe use of the chemical product such as radio-activity / bulk density ○ Units shall be expressed in accordance with the SI system; other units may also be given in addition to the SI units. ○ Where appropriate, the method used in the determination of a property must be identified. 	<p>Partially Compliant</p> <p>MSDS requirement 'where applicable' may be misleading</p> <p>MSDS requirement does not require: flammability (solid, gas); upper/lower flammability or explosive limits.</p>
<p>10. Stability and Reactivity</p> <ul style="list-style-type: none"> • Chemical stability. • Possibility of hazardous reactions. • Conditions to avoid (e.g. static discharge, shock or vibration). • Incompatible materials. • Hazardous decomposition products 	<p>10. Stability and Reactivity</p> <ul style="list-style-type: none"> • Stability of the product and possible hazardous reactions occurring under specific conditions • Information on: <ul style="list-style-type: none"> ○ Conditions to avoid ○ Materials to avoid ○ Hazardous decomposition products, in addition 	<p>Compliant</p>

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	to CO, CO ₂ and H ₂ O. • Consideration to the intended use and reasonably foreseen misuse	
<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:</p> <ul style="list-style-type: none"> • 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 (such as acute toxicity estimates). 	<p>11. Toxicological Information</p> <ul style="list-style-type: none"> • Concise but complete and comprehensible description of the various toxicological (health) effects and the available data used to identify those effects, including: <ul style="list-style-type: none"> ○ Acute toxicity ○ Local effects ○ Sensitisation ○ Chronic toxicity ○ Long-term toxicity • Distinction shall be made between effects due to single exposure, repeated exposure and continues exposure. Immediate and delayed effects shall be mentioned separately. • Specific effects should include: <ul style="list-style-type: none"> • Carcinogenicity • Mutagenicity, and • Reproduction toxicity. • Information should be specified according to different exposure routes: <ul style="list-style-type: none"> ○ Inhalation ○ Skin contact ○ Eye contact ○ Ingestion • Additional results or data from scientific experiments, with reference to the source of information, may be given. 	<p>Non-compliant</p> <p>MSDS requirements do not include:</p> <ul style="list-style-type: none"> • 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 (such as acute toxicity estimates).

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<p>12. Ecological Information</p> <ul style="list-style-type: none"> • Eco-toxicity (aquatic and terrestrial, where available) • Persistence and degradability. • Bio-accumulative potential. • Mobility in soil. • Other adverse effects 	<p>12. Ecological Information</p> <ul style="list-style-type: none"> • Information on possible environmental effects, behaviour and fate, such as: <ul style="list-style-type: none"> ○ Mobility ○ Persistence/degradability ○ Bio-accumulation ○ Excepted behaviour in the environment / possible environmental impact / eco-toxicity • Additional results or data from scientific experiments with reference to the source of information, maybe given. • Any ecological limit values may be indicated. 	Compliant
<p>13. Disposal Considerations</p> <p>Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.</p>	<p>13. Disposal Considerations</p> <ul style="list-style-type: none"> • Recommended methods for safe and environmentally preferred disposal • Methods of disposal apply not only to the product / waste residue, but also to any contaminated packaging • Local disposal regulations. 	Compliant

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<p>14. Transport Information</p> <ul style="list-style-type: none"> • UN number • UN Proper shipping name • Transport Hazard class(es) • Packing group, if applicable • Marine pollutant (Yes/No) • 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 	<p>14. Transport Information</p> <ul style="list-style-type: none"> • Information on codes and classifications according to international regulations for transport, differentiated by mode of transport, such as: <ul style="list-style-type: none"> ○ Land, railroad/road (such as RID/ARD, NDOT49CFR) ○ Inland waterways (such as ADNR) ○ Sea (IMDG) ○ Air (ICAO-TI, IATA-DGR) • UN classification number • Any additional regulations • Specific precautionary transport measures and conditions 	Compliant
<p>15. Regulatory Information</p> <p>Safety, health and environmental regulations specific for the product in question.</p>	<p>15. Regulatory Information</p> <ul style="list-style-type: none"> • Regulations specifically applicable to the product • Hazard and safety information as written on the label • Draw attention to local regulations 	Partially compliant MSDS not explicit about environmental requirements
<p>16. Other Information</p> <p>Including: Information on Preparation and Revision of the SDSs</p>	<p>16. Other Information</p> <ul style="list-style-type: none"> • Any further information which may be important from a safety point of view but not specifically relevant to previous headings. For instance, special training needs, and the recommended use and possible restrictions of the product. • Literature references. 	Non Compliant MSDS requirements do not specify information on preparation and revision of the MSDS