**How to Prepare a Safety Data Sheet (SDS) for a Synthesized Chemical**

If synthesizing a hazardous chemical, the PI or manager must generate a Globally Harmonized System (GHS) compliant label and SDS before shipping or transporting the chemical away from the campus. Use the SDS template to make a GHS compliant SDS.

The SDS includes information such as the properties of each chemical; the physical, health, and environmental hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical. The person preparing the SDS must ensure the information accurately reflects the scientific evidence used in making the hazard determination.

SAFETY DATA SHEET

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| **Section 1: Identification** |
| **Product Name:**      **Chemical Name/Synonyms:**        |
| **Section 2: Hazard(s) Identification** |
| **See** [**https://www.sigmaaldrich.com/safety-center/globally-harmonized.html**](https://www.sigmaaldrich.com/safety-center/globally-harmonized.html) **for a list of hazard classifications, signal words, hazard statements, pictograms, precautionary statements, and a description of hazards.****Hazard Classification:**      **Signal Word(s):**      **Hazard Statements:**      **Pictograms:**       **Delete pictograms that don’t apply!** FlameGas cylinderExploding bombcorrosionSkullexclamation-markFlame over circleHealth hazardEnvironment**Precautionary Statements:**      **Description of other hazards:**       |
| **Section 3: Composition/ Information on Ingredients** |
|  |
| **Chemical Name** | **Synonym** | **CAS#** | **Conc.** |
|       |       |  |  |
|       |       |  |  |
|       |       |  |  |
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| **Section 4: First-Aid Measures** |
| *(a) Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion* *(b) Most important symptoms/effects, acute and delayed* *(c) Indication of immediate medical attention and special treatment needed, if necessary* **After skin contact:**      **After eye contact:**      **After inhalation:**      **After swallowing**:        |
| **Section 5: Fire-Fighting Measures** |
| *(a) Suitable (and unsuitable) extinguishing media* *(b) Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products)* *(c) Special protective equipment and precautions for fire-fighters* **Suitable extinguishing agents:**      **Special protective equipment for firefighters:**       |
| **Section 6: Accidental Release Measures** |
| *(a) Personal precautions, protective equipment, and emergency procedures* *(b) Methods and materials for containment and cleaning up* **Personal precautions:**      **Measures for environmental protection:**      **Measures for cleaning/collecting:**       |
| **Section 7: Handling and Storage** |
| *(a) Precautions for safe handling**(b) Conditions for safe storage, including any incompatibilities***Handling:**      **Storage:**       |
| **Section 8: Exposure Controls/Personal Protection** |
|  |
| **Chemical Name** | **OSHA PEL** | **OSHA PEL (ceiling)** | **ACGIH OEL (TWA)** | **ACGIH OEL (STEL)** |
|  |  |  |  |  |
|  |  |  |  |  |
| **General protective and hygienic measures:**      **Breathing equipment:**      **Protection of hands:**       **Eye protection:**       |
| **Section 9: Physical and Chemical Properties** |
| **Form:**      **Odor:**      **Odor threshold:**      **pH:**      **Melting point/melting range:**      **Boiling point/boiling range:**      **Flash point:**      **Evaporation rate:**      **Flammability:**      **Upper/lower flammability or explosive limits:**      **Auto ignition temperature:**      **Danger of explosion:**      **Vapor pressure:**      **Vapor density:**      **Relative density:**      **Solubility in/Miscibility with water:**       |
| **Section 10: Stability and Reactivity** |
| **Reactivity:**      **Chemical stability**:      **Conditions to avoid:**      **Incompatible materials:**      **Hazardous decomposition products:**        |
| **Section 11: Toxicological Information** |
| **Acute toxicity:**      **Potential routes of exposure/potential health effects****Skin:**      **Eye:**      **Inhalation:**      **Ingestion:**      **Carcinogenic effects:**      **Mutagenic effects:**      **Reproductive toxicity:**      **Sensitization:**      **Target organs:**       |
| **Section 12: Ecological Information (non-mandatory)** |
| **Ecotoxicity:**      **Mobility:**      **Biodegradation:**      **Bioaccumulation:**       |
| **Section 13: Disposal Considerations (non-mandatory)** |
| *Description of waste residues and information on their safe handling**and methods of disposal, including the disposal of any contaminated**packaging*        |
| **Section 14: Transport Information (non-mandatory)** |
| *(a) UN number* *(b) UN proper shipping name* *(c) Transport hazard class(es)* *(d) Packing group, if applicable* *(e) Environmental hazards (e.g., Marine pollutant (Yes/No));**(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)* *(g) 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* **DOT regulations:**      * **Hazard class:**
* **Land transport ADR/RID (cross-border):**
* **ADR/RID class:**
* **Maritime transport IMDG:**

**Air transport ICAO-TI and IATA-DGR:**      * **ICAO/IATA Class:**

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| **Section 15: Regulatory Information (non-mandatory)** |
| *Safety, health and environmental regulations specific for the product in question* **US Federal Regulations****SARA Section 355 (extremely hazardous substances):**      **SARA Section 313 (specific toxic chemical listings):**      **Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs):**      **TSCA (Toxic Substances Control Act):**       |
| **Section 16: Other Information** |
| *The date of preparation of the SDS or the last change to it***SDS date of preparation/update:**       |