

GPS Safety Summary

Substance Name:

Octane-1-thiol

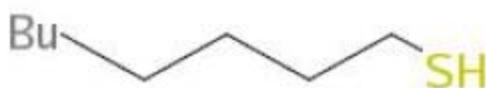
1. General Statement

Octane-1-thiol is a colourless liquid organic compound, with a characteristic odour. It is used as a chemical intermediate under strictly controlled conditions. Products containing octane-1-thiol are commercially available to industrial customers only.

Causing skin sensitization and very toxic to the aquatic life with long lasting effects, this substance must be carefully handled and stored to preserve human health and environment.

2. Chemical Identity

Name: Octane-1-thiol
Brand name: n-Octylmercaptan (NOM)
Chemical name (IUPAC): Octane-1-thiol
CAS number(s): 111-88-6
EC number: 203-918-1
Molecular formula: C₈H₁₈S
Structure:



3. Use and applications

NOM has a variety of applications as intermediate in the chemical, pharmaceutical, agrochemical and biocides synthesis. It is used as a chemical reactant in the manufacture of antioxidants for polyolefins. It can also be used in radical polymerization processes, such as in acrylic polymer manufacture.

In organic synthesis, NOM performs in all the standard reactions of primary mercaptans, including addition on double bonds, reaction with aldehydes or ketones to give thioacetals (mercaptals) and thioacetals and formation of metal-mercaptide salts.

4. Physical / Chemical properties

Property	Value
Physical state	Liquid at 20°C and 1013 hPa
Colour	Colourless
Odour	Stinging, characteristic
Density	0.84 at 20°C

Vapour pressure	60 Pa at 25°C
Freezing / boiling points	-49°C / 199°C at 1013hPa
Flammability	Combustible liquid
Flash point	69°C at 1013 hPa
Self-ignition temperature	207-217°C at 995 hPa
Explosive properties	Not explosive due to chemical structure
Oxidizing properties	Not oxidising due to chemical structure
Water solubility	19.4 mg/L at 25°C
Octanol-water partition coefficient (Log K _{ow})	4.21 at 20°C

5. Health Effects

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Of low toxicity by oral, dermal and inhalation routes.
Irritation / corrosion Skin / eye/ respiratory tract	Slightly irritating to the skin and eyes. Not irritating for the respiratory tract.
Sensitisation	Skin sensitizer.
Toxicity after repeated exposure Oral / inhalation / dermal	An oral study with the substance and inhalation studies with an analogue substance did not suggest a significant systemic toxicity following repeated exposure.
Genotoxicity / Mutagenicity	Not genotoxic.
Carcinogenicity	No data available.
Reproductive / Developmental Toxicity	Studies with the substance and with an analogue substance did not suggest toxic effects on the fertility and the development.

6. Environmental Effects

Effect Assessment	Result
Aquatic Toxicity	Very toxic to aquatic organisms.

Fate and behaviour	Result
Biodegradation	Data with an analogue substance suggest that the substance is not readily biodegradable.
Bioaccumulation potential	Bioaccumulation is unlikely.
PBT / vPvB conclusion	As the substance is registered as an isolated intermediate, the data is not required.

7. Exposure

7.1 Human health

The most likely route of human exposure (workers) to octane-1-thiol is through inhalation and/or to a much lesser extent dermal contact. In industrial settings, ingestion is not an anticipated route of exposures.

The substance is industrially manufactured and used almost entirely within closed systems, under strictly controlled conditions, thus occupational exposure is not expected under normal conditions of manufacturing and use.

Procedures, controls, collective and personal risk management measures are in place, which limit the occupational exposure. Workers who might accidentally come into contact with the undiluted substance should follow the safety measures recommended in the Safety Data Sheet.

When used under strictly controlled conditions as recommended in the Safety Data Sheet, exposure is negligible and thus risks acceptable.

7.2 Environment

Based on its physico-chemical properties, octane-1-thiol is not soluble in water and is expected to volatilise rapidly from the aquatic compartment. It is not readily biodegradable and is expected to strongly adsorb on soil and sediment particles. It has a low potential for bioaccumulation.

Octane-1-thiol is industrially manufactured and used in closed systems and consumed when used as an intermediate; Releases to the environment are not expected under normal conditions of manufacturing and use.

Procedures, controls and risk management measures are in place, which limit the environmental exposure.

When used under strictly controlled conditions as recommended in the Safety Data sheet, there are no releases of NOM to the environment and thus risks are acceptable.

More information about release measures and accidental release measures are available in the safety data sheet.

8. Risk Management recommendations

Human health measures		
Organizational	Implement high standards of occupational hygiene. Hygiene measures must be respected and incompatible materials must be clearly identified. Ensure operatives are well informed of the hazards and trained to minimize exposures. Maintain clear and up-to-date handling procedures and control their application. Collect the latest available Safety Data Sheet. Handle and store according to the indications of the Safety Data Sheet.	
	Eye/Face protection:	Safety glasses
	Skin protection:	Protective suit
	Hand protection:	Gloves (synthetic rubber, plastic materials)
Respiratory protection:	In case of insufficient ventilation, wear suitable respiratory equipment.	

Engineering controls	<p>Manufacture and use in rigorously contained (closed) systems. Ensure sufficient air exchange and/or exhaust in work area. Use material of high integrity for loading and unloading. Routine monitoring and inspections for leaks to reduce fugitive emissions. Investigate engineering techniques to reduce exposures. Ensure that eyewash stations and safety showers are close to workstation locations.</p>
Environmental protective measures	
<p>Do not release into the environment. Do not let product enter drains. Use techniques to minimize emissions (incineration or any treatment to minimize level of release). For recovery, pump into a labelled inert emergency tank. Absorb the remainder with an inert absorbent material. Destroy by oxidation with dilute solutions of hydrogen peroxide or sodium hypochlorite or by incineration in accordance with local and national regulations.</p>	

9. Regulatory Information / Classification and Labelling

9.1 Regulatory Information



This substance has been registered under:

- EU Regulation EC 1907/2006 (REACH)

This substance is listed on inventories in the USA, in Australia, in New Zealand, in Canada, in Japan, in Korea, in Philippines and in China.

9.2 Classification and labelling

Under GHS substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and the safety data sheet. GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use. Substances registered for REACH are classified according to CLP (EC) 1272/2008, implementation of the GHS in the European Union.

Classification	
<p>According to REGULATION (EC) no 1272/2008:</p> <ul style="list-style-type: none"> — Skin sensitization cat. 1B — Acute aquatic toxicity cat. 1 – M factor = 10 — Chronic aquatic toxicity cat. 1 – M factor = 10 	
Signal Word	
Warning	
Pictogram	
— GHS07: Exclamation mark	
— GHS09: Environment	

Hazard statement
<ul style="list-style-type: none"> – H317: May cause an allergic skin reaction – H410: Very toxic to aquatic life with long lasting effects
Additional classification according to Globally Harmonized System (GHS)
Flammable liquids: Category 4; H227: Combustible liquid Acute oral toxicity: Category 5; H303: May be harmful if swallowed Skin irritation: Category 3; H316: Causes mild skin irritation

10. Contact Information within Company

For further information on this substance or product safety summary in general, please contact:

- Arkema web site : on the product page, an actualised contact name is provided
<http://www.arkema.com>
- **ICCA portal where the GPS Safety Summary is posted:**
<http://www.icca-chem.org/en/Home/ICCA-initiatives/global-product-strategy/>

11. Date of Issues / Revision

- Date of issue: 2014/12/15
- Date of revision:

12. Disclaimer

The information contained in this paper is intended as advice only and whilst the information is provided in utmost good faith and has been based on the best information currently available, is to be relied upon at the user's own risk.

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