

GPS Safety Summary

Substance Name:

Tertiobutylmercaptan

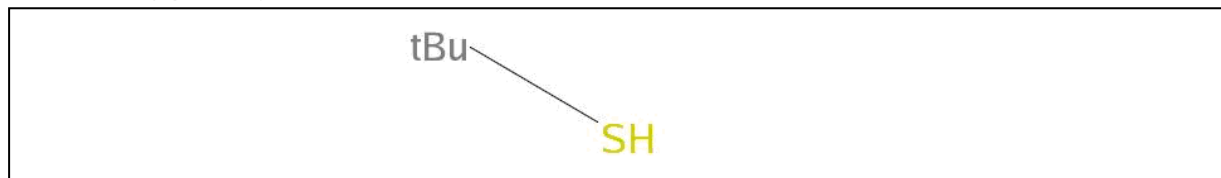
1. General Statement

Tertiobutylmercaptan is a colourless liquid with a characteristic odour and a very low odour threshold about 0,1 ppb. Products containing tertiobutylmercaptan are commercially available to industrial customers only.

Flammable, skin sensitizer and toxic to aquatic fauna with long lasting effects, this substance must be carefully handled and stored to preserve human health and environment.

2. Chemical Identity

Name: Tertiobutylmercaptan
Brand names: Tertiobutylmercaptan
Chemical name (IUPAC): 2-methylpropane-2-thiol
CAS number(s): 75-66-1
EC number (optional): 200-890-2
Molecular formula (optional): C₄H₁₀S
Structure (optional):



3. Use and applications

Tert-butylmercaptan is used in combination with other sulphur containing substances as an odorant in gaz. It can also be used as an intermediate in the synthesis of pharmaceuticals, of pesticides and of sulfides and polysulfides.

4. Physical / Chemical properties

Property	Value
Physical state (Liquid/solid/gaseous)	Liquid
Colour	Colourless
Odour	Mercaptans
Density	800 kg/m ³ at 20°C
Melting point	0°C at 1013 hPa
Boiling point	64°C at 1013 hPa

Flammability (optional) H statement in case classified	Flammable liquid
Explosive properties	Not explosive based on its structure
Oxidising properties	Not oxidising based on its structure
Self-ignition temperature	255°C at 1013 hPa
Vapour pressure	190 hPa at 20°C
Mol weight	90.18 g/mol
Water solubility	1.47 g/l at 20°C
Flash point	< -25°C (closed cup) at 1013 hPa
Octanol-water partition coefficient (LogKow)	2.14

5. Health Effects

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Low toxicity by oral/dermal/inhalation routes.
Irritation / corrosion Skin / eye/ respiratory tract	Slightly irritating for eyes. May cause transitory irritation to respiratory system at high vapour concentrations.
Sensitisation	Skin sensitizer.
Toxicity after repeated exposure Oral / inhalation / dermal	Inhalation studies performed with analogue substances did not suggest a significant systemic toxicity following repeated exposure.
Genotoxicity / Mutagenicity	No evidence of genetic toxicity.
Carcinogenicity	No evidence of carcinogenic toxicity.
Toxicity for reproduction	No evidence of toxicity for reproduction.

6. Environmental Effects

Effect Assessment	Result
Aquatic Toxicity	Toxic for aquatic invertebrates and harmful for fish and aquatic plants.

Fate and behaviour	Result
Biodegradation	Not readily biodegradable.
Bioaccumulation potential	Not expected to bioaccumulate (log P = 2.14).
PBT / vPvB conclusion	Not considered to be either PBT or vPvB.

Tert-butylmercaptan is not readily biodegradable, is not expected to bioaccumulate or adsorb to suspended solids and sediment in water. Structural analysis of Tert-butylmercaptan indicates that it is not expected to undergo hydrolysis in the environment and the physico-chemical properties indicate that the majority of the substance will ultimately be released into the atmosphere, where it will degrade through photolysis.

7. Exposure

7.1 Human health

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

The probability of exposure to workers is expected to be low because this product is manufactured in enclosed controlled environment and is transported in well sealed containers in order to avoid odour nuisance. Due to its low odor threshold leaks can be detected quickly and prolonged exposures can be avoided. However, workers may be exposed during (un)loading, mixing, sampling, analysis or maintenance operations and particularly in case of batch processes. The exposure must be kept as minimum as possible by the use of appropriate risk management measures as suitable collective and personal protective equipment, good industrial hygiene practices and risk communication through appropriate training of workers.

For more information about conditions recommended, refer to the extended safety data sheet.

7.2 Environment

Based on its physico-chemical properties, tertibutylmercaptan is water soluble, has a high potential for volatility, a low potential of bioaccumulation, is not readily biodegradable and is toxic to aquatic life.

Due to the potential of this substance to cause significant harm to aquatic environments, care should be taken to avoid releases of these products to sewage, drainage systems and water bodies. Spillage shall be quickly collected in the event of an accidental release. More information about release measures and accidental release measures are available in the extended safety data sheet.

8. Risk Management recommendations

Human health measures		
Organizational	Implement a good basic standard of occupational hygiene Ensure operatives are well informed of the hazards and trained to minimize exposures. Pay special attention to equipment because of sensitisation potential of the substance. Hygiene measures must be respected and incompatible materials must be clearly identified.	
Protection	Eye/Face protection:	Safety glasses
	Skin protection:	Combination with delayed penetration, protective suit
	Hand protection:	Gloves nitrile rubber. Glove thickness: 0.75 mm
	Respiratory protection:	In case of insufficient ventilation, wear a suitable respiratory equipment. In case of high concentrations or prolonged activity: Self contained Breathing Apparatus
Engineering controls	Ensure sufficient air exchange and/or exhaust in work area. Ensure that eyewash stations and safety showers are close to workstation locations.	

Environmental protective measures

This substance and all industrial releases that may contain the substance must be treated to avoid any exposure to the environment.

Eliminate by incineration in accordance with local and national regulations.

9. Regulatory Information / Classification and Labelling




9.1 Regulatory Information

This substance has been registered under:

- EU Regulation EC 1907/2006 (REACH)

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 eSDS. 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 CLP (EC) 1272/2008, implementation of the GHS in the European Union.

Classification	
According to REGULATION (EC) no 1272/2008:	
Flammable liquids cat. 2	(H225: Highly flammable liquid and vapour.)
Skin sensitisation cat. 1	(H317: May cause an allergic skin reaction.)
Chronic aquatic toxicity cat. 2	(H411: Toxic to aquatic life with long lasting effects.)
Signal Word	
Danger	
Pictogram	
— GHS03: Flame	
— GHS07: Exclamation mark	
— GHS09: Environment	
Labelling: hazard statement	
H225: Highly flammable liquid and vapour. H317: May cause an allergic skin reaction. H411: Toxic to aquatic life with long lasting effects.	
Additional classification according to Globally Harmonized System (GHS)	
Oral: Acute toxicity cat.5 (H303: May be harmful if swallowed) Acute aquatic toxicity cat.2 (H401: Toxic to aquatic life)	

10. Contact Information within Company

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

- Arkema web site : on the TBM 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: 2014/06/10
- Date of revision:

12. Disclaimer

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