

GPS Safety Summary

Substance Name:

Thioacetic Acid

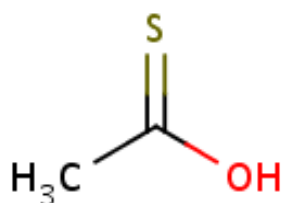
1. General Statement

Thioacetic acid is a slightly yellow liquid organic compound, with a pungent odour. It is used as a chemical intermediate for synthesis of pharmaceuticals and other substances under strictly controlled conditions. Products containing thioacetic acid are available to industrial workers only and then not sold to the general public.

Stable at cold temperature (5°C), highly flammable product, toxic if swallowed, causing serious eye damage and skin sensitization, this substance must be carefully handled and stored to preserve human health and environment.

2. Chemical Identity

Name:	Thioacetic Acid
Brand names:	Thioacetic Acid
Chemical name (IUPAC):	Ethanethioic S-acid
CAS number(s):	507-09-5
EC number:	208-063-8
Molecular formula:	C ₂ H ₄ OS
Structure:	



3. Use and applications

Thioacetic acid gives radical reactions with olefins. These reactions lead to thio acetates which are hydrolysed to produce mercaptans:

- TAA is used to manufacture various pharmaceutical compounds: spironolac-tone (diuretic) or captopril (antihypertension).
- TAA is used to manufacture cysteine
- TAA is used in analytical chemistry to separate heavy metals.

4. Physical / Chemical properties

Property	Value
Physical state	Liquid at 20°C and 1013 hPa
Colour	Colourless, light yellow
Odour	Pungent
Density	1.064 at 20°C
Vapour pressure	67.19 hPa at 20°C
Freezing / boiling points	-75°C / 87°C at 1013hPa
Flammability	Highly flammable liquid and vapour
Flash point	18°C (closed cup)
Self-ignition temperature	/
Explosive properties	Not explosive due to chemical structure
Oxidizing properties	Not oxidising due to chemical structure
Water solubility	Slightly soluble
Octanol-water partition coefficient (Log K _{ow})	0.14 (calculated)

5. Health Effects

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Toxic by ingestion and slightly harmful by dermal contact
Irritation / corrosion Skin / eye/ respiratory tract	Slightly irritating for the skin. Severely irritating for the eyes
Sensitisation	Strong skin sensitiser
Toxicity after repeated exposure Oral / inhalation / dermal	This information is not available
Genotoxicity / Mutagenicity	Not genotoxic
Carcinogenicity	This information is not available
Reproductive / Developmental Toxicology	This information is not available

6. Environmental Effects

Effect Assessment	Result
Aquatic Toxicity	Toxic to aquatic organisms

Fate and behaviour	Result
Biodegradation	Readily biodegradable
Bioaccumulation potential	Bioaccumulation is unlikely
PBT / vPvB conclusion	Not considered to be either PBT or vPvB

7. Exposure

7.1 Human health

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

The probability of exposure to workers is expected to be minimal because on manufacturing, formulation and application site, enclosed strictly controlled conditions are used and the product is transported in well sealed containers at reduced temperature.

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

7.2 Environment

Based on its physico-chemical properties, thioacetic acid is soluble in water and is not expected to volatilise significantly from the aquatic compartment. It is readily biodegradable and has a low potential for bioaccumulation.

Thioacetic acid is industrially manufactured and used in strictly controlled conditions in a batch process, with treatment of any emission for removal of TAA before any release to the environment.

Procedures, controls and risk management measures are in place to prevent any environmental release.

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

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.
Protection	Eye/Face protection: Safety glasses with side-shields
	Skin protection: At the workplace: combination with delayed penetration Intervention at incident: acid resistant clothing, boots
	Hand protection: Nitrile rubber gloves, thickness: 0.85 mm
	Respiratory protection: Self contained breathing apparatus

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 and rinse with water. Destroy 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 US, Japan, China, Korea, Philippines, New-Zeland, Australia, Canada.

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"> – Flammable liquids, cat. 2 – Acute toxicity (oral), cat. 3 – Serious eye damage, cat. 1 – Skin sensitization, cat. 1A 	
Signal Word	
– Danger	
Pictogram	
– GHS02: Flame	
– GHS06: Skull and crossbones	

<ul style="list-style-type: none"> – GHS05: Corrosion 	
Hazard statement	
<ul style="list-style-type: none"> – H225 : Highly flammable liquid and vapour – H301: Toxic if swallowed – H318: Causes serious eye damage – H317: May cause an allergic skin reaction 	
Additional classification according to Globally Harmonized System (GHS)	
<ul style="list-style-type: none"> – Skin irritation, cat.3 (H316 : Causes mild skin irritation) – 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 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: 2014/11/30
- 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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