

GPS Safety Summary

Substance Name:

Reaction mass of nitrosylsulfuric acid and sulfuric acid

1. General Statement

The substance "Reaction mass of nitrosylsulfuric acid and sulfuric acid" is produced to be used as an intermediate in the manufacture of other substances. It is manufactured and handled in industrial settings exclusively.

2. Chemical Identity

Name: Reaction mass of nitrosylsulfuric acid and sulfuric acid
Chemical name (IUPAC): Reaction mass of nitrosylsulfuric acid and sulfuric acid
CAS numbers: 7782-78-7 / 7664-93-9
List number: 913-747-0

3. Use and applications

The substance "Reaction mass of nitrosylsulfuric acid and sulfuric acid" is used exclusively in industrial settings as an intermediate in the manufacture of other substances.

4. Physical / Chemical properties

The substance is an acid liquid with the following physicochemical properties:

Property	Value
Physical state	Liquid
Colour	Colourless, milky
Odour	None
Density	1.985 g/cm ³ at 20°C
Melting range	-9.55°C to 21.95°C 1013 hPa
Boiling point	The substance decomposes before boiling.
Flash point - Flammability	Not relevant as the substance is inorganic.
Self-ignition temperature	No self ignition temperature up to 600°C.
Explosive properties	No mechanical sensitivity. No data on thermal sensitivity.
Oxidizing properties	Oxidizing liquid. H272: May intensify fire; oxidiser.
Vapour pressure	< 1 mbar at 34.8°C

Water solubility	Not applicable: in the presence of water, the product quickly hydrolyses.
Octanol-water partition coefficient (LogKow)	Not relevant as the substance is inorganic.

5. Health Effects

In water, nitrosylsulfuric acid (HNO₅S) decomposes at ambient temperature into sulfuric acid (H₂O₄S) and nitrous acid (HNO₂). Nitrous acid is also not stable in water at ambient temperature and decomposes into nitric oxide (NO) and nitrate ion (NO₃⁻).

That is the reason why the assessment of the toxicity of nitrosylsulfuric acid is based on the toxicological properties of its breakdown products in water: sulfuric acid and nitrate ions.

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	<i>Inhalation:</i> Based on its composition, severely irritant to respiratory system. <i>Dermal:</i> No data. <i>Oral:</i> Based on its composition, slightly harmful by ingestion.
Irritation / corrosion Skin / eye/ respiratory tract	Based on its composition and its by-products, severely irritant to respiratory system and classified as corrosive to skin and eye.
Sensitisation	Not relevant as the substance is corrosive.
Toxicity after repeated exposure Oral / inhalation / dermal	Based on its composition and its by-products, not expected to cause adverse effects after repeated exposure. Based on the available studies, there is clearly no potential for systemic toxicity and the effects seen in these studies are essentially a consequence of the local corrosivity/irritancy.
Genotoxicity / Mutagenicity	Based on data on its breakdown products, not expected to cause adverse genetic effects.
Carcinogenicity	No data.
Reproductive / Developmental Toxicity	Based on its composition, not expected to cause adverse effects on reproduction. No data available.

6. Environmental Effects

Due to a quick hydrolysis, the toxicity of the Reaction mass of nitrosylsulfuric acid and sulfuric acid was assessed through its breakdown product sulphuric acid. Toxicity was observed only on fish, the substance is thus considered as harmful for fish. The PBT assessment is not relevant because the substance is inorganic.

Effect Assessment	Result
Aquatic Toxicity	Based on data on sulfuric acid : harmful to fish.

Fate and behaviour	Result
(Bio)degradation potential	In the presence of water, the product quickly hydrolyses.
Bioaccumulation potential	Not relevant as the substance is inorganic.
PBT / vPvB conclusion	Not relevant.

7. Exposure

7.1 Human health

General population will not come in contact with the substance as it is manufactured and used exclusively in industrial settings under strictly controlled conditions.

Worker exposure in facilities manufacturing or using the substance is not expected as worker activities are undertaken under strictly controlled conditions. Nevertheless if workers are exposed, during handling, loading, mixing, sampling or maintenance operations, they should follow the recommended safety measures in the extended Safety Data Sheet (e-SDS).

7.2 Environment

The manufacture and the use of the reaction mass of nitrosylsulfuric acid and sulfuric acid is under strictly controlled conditions and thus no exposure to the environment is expected. Nevertheless, if released to water, the substance will quickly hydrolyze into sulfuric acid and nitrate ions the final breakdown products.

8. Risk Management recommendations

Human health measures		
Organizational	Implement good basic standards of occupational hygiene. Ensure operatives are well informed of the hazards and trained to minimise exposures. Refer to the latest available extended safety data sheet (eSDS).	
	Engineering controls	
Protection	Eye/Face protection:	Safety glasses with side-shields.
	Skin protection:	Combination with delayed penetration, incombustible.
	Hand protection:	Nitrile rubber gloves, thickness: 0,75 mm
	Respiratory protection:	On line apparatus
Environment protective measures		
On-site waste water treatment is required. Do not release into the environment. Do not let product enter drains. Dam up with inert material. Destroy absorbed product in accordance with local and national regulations. Use techniques to minimize emissions (incineration or any treatment to minimize level of release).		

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 e-SDS. 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: <ul style="list-style-type: none">– Oxidizing liquid; Category 2; May intensify fire; oxidiser– Skin corrosion; Category 1A; Causes severe skin burns and eye damage– Serious eye damage; Category 1; Causes serious eye damage	
Pictogram	
– GHS03: Flame over circle	
– GHS05: Corrosion	
Hazard statement	
<ul style="list-style-type: none">– H272: May intensify fire; oxidiser.– H314: Causes severe skin burns and eye damage.	
Additional Classification according Global Harmonized System (GHS)	
– Aquatic Acute, Category 3 : Harmful to aquatic life	

10. Contact Information within Company

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

- arkema.reach-dpt1@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: 2013/11/30
- Date of revision:

12. Disclaimer

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