

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product identifier:

Trade name: Sulphamic acid
Proper shipping name: Sulphamic acid
Chemical formula: $\text{H}_3\text{NO}_3\text{S}$
Index number: 016-026-00-0
CAS number: 5329-14-6
EC number: 226-218-8
REACH registration number: 01-2119488633-28-0002
Other means of identification: No data available

Relevant identified uses of the substance or mixture and uses advised against:

Relevant identified uses: Please refer to the annex for the registered uses under REACH.

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2. HAZARDS IDENTIFICATION

Classification according to Regulation (EC) No. 1272/2008 [CLP]:

Classification	Category	Exposure
Eye irritation	2	-
Skin irritation	2	-
Aquatic chronic	3	-

Classification according to Directive 67/548/EEC or 1999/45/EC:

R36/38: Irritating to eyes and skin.
R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Other adverse physicochemical, human health and environmental effects: No reliable data available.

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Label elements:

Labelling according to Regulation (EC) No. 1272/2008 [CLP]:



Signal word:

Warning

Hazard statements:

H319: Causes serious eye irritation.

H315: Causes skin irritation.

H412: Harmful to aquatic life with long lasting effects.

Prevention:

P264: Wash thoroughly after handling.

P273: Avoid release to the environment.

P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes: Remove contact lenses, present and easy to do. Continue rinsing.

P337+P313: If eye irritation persists: Get medical advice/attention.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P332+P313: If skin irritation occurs: Get medical advice/attention.

P362: Take off contaminated clothing and wash before reuse.

Disposal:

P501: Dispose of contents/container in accordance with local/ regional/ national/ international regulations.

Labelling accordance to Directive 1999/45/EC [DPD]:

Symbol:



IRRITANT

Indication of danger:

Xi

Risk phrases:

R36/38: irritating to eyes and skin.

R52/53: Harmful to aquatic organisms may cause long-term adverse effects in the aquatic environment.

Safety phrases:

S2: Keep out of the reach of children:

S25: Avoid contact with eyes.

S26: In case of contact with eyes, rinse with plenty of water and contact doctor or poisons information centre.

S28: After contact with skin, wash immediately with plenty of water.

S61: Avoid release to the environment. Refer to special instructions/ Safety Data Sheets.

Other hazards:

No reliable data available.

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3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances:

Name	CAS No.	Index No.	REACH No.	%wt/wt
Sulphamic acid	5329-14-6	016-026-00-0	01-2119488633-28-0002	≥99.8

Mixtures: Not applicable.

4. FIRST AID MEASURES

Description of first aid measures:

Inhalation:	Move victim to fresh air. If not breathing, give artificial respiration. Get medical attention.
Skin contact:	Immediately wash with plenty of water. Get medical attention if irritation occurs.
Eye contact:	Immediately flush eyes with running water for at least 20 minutes holding eyelids open. Get medical attention.
Ingestion:	Do not induce vomiting. Give 1-2 glasses of water to a conscious victim. Never give anything by mouth to an unconscious victim. Get medical attention.
Advice for the doctor:	Symptomatic treatment.

Most important symptoms and effects, both acute and delayed: Temporary redness, inflammation of skin and eyes.

Indication of any immediate medical attention and special treatment needed: No reliable data available.

5. FIRE-FIGHTING MEASURES

Extinguishing media:	Foam
	Dry chemical powder
	Carbon Dioxide
	Water spray or fog/ large fires only
	Sand

Special hazards arising from the substance or mixture:

Fire/explosion hazard:	Emits toxic fumes under fire conditions.
Main combustion gas:	SO ₂ , SO ₃ and NH ₃ .

Advice for firefighters:	Alert fire brigade and tell them location and nature of hazard.
	Wear breathing apparatus plus protective gloves.
	Prevent, by any means available, spillage from entering drains or water courses.
	Use water delivered as a fine spray to control fire and cool adjacent area.
	DO NOT approach containers suspected to be hot.
	Cool fire exposed containers with water spray from a protected location.
	If safe to do so, remove containers from path of fire.

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel: Wear suitable protective equipment.

For emergency responders: Remove ignition sources and provision of sufficient ventilation, evacuate the danger area and consult experts.

Environmental precautions: Take precautions to prevent entry into waterways, sewers or surface drainage systems.
Dispose according to local or international regulations.

Methods and material for containment and cleaning up: Use appropriate tools to put the spilled solid in suitable container for recovery or disposal.

Reference to other sections: Personal Protective Equipment advice is contained in Section 8 of the SDS.

7. HANDLING AND STORAGE

Precautions for safe handling: Eating, smoking and drinking in work areas is prohibited.
Wash hands after use.
Remove contaminated areas and equipment before eating.
Water is available around work areas for washing.
Keep air fresh in work areas.
Store in anti-corrosive containers.
Store in dry and cool places.
Do not store in the places without emergency water areas.
Lights and ventilation system are required anti-corrosion in storage areas.
Do not store or mix with cyanides, nitrates, sulphides, chlorine, hypochlorous acid or hypochlorites.
Keep in tightly closed and dry container.

Conditions for safe storage, including any incompatibilities:

Suitable container: Do not use aluminium or galvanised containers.
Check regularly for spills and leaks. Glass container is suitable for laboratory quantities.
Plastic pail.
Polyliner drum.
Drums and Jerri cans must be of the non-removable head type.
Where a can is to be used as an inner package, the can must have a screwed enclosure.
Check all containers are clearly labelled and free from leaks.

Storage incompatibility: Avoid reacting with cyanides, sulphides, chlorine, hypochlorous acid or hypochlorite.
Store separated from nitrates and nitric acid as Sulphamic acid can react violently with nitrates, sometimes explosive!

Specific end use(s): Apart from the uses mentioned in section 1, no other specific uses are stipulated.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:

Derived No Effects Level (DNEL)

Exposure pattern	Workers	General Population
Long term- dermal, systemic effects	10 mg/kg bw/day	5 mg/kg bw/day
Long term- inhalation, systemic effects	Not relevant	Not relevant
Long term- oral, systemic effects	Not applicable	5 mg/kg bw/day
Long term- dermal, local effects	No data available	No data available
Long term- inhalation, local effects	Not relevant	Not relevant

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.

Exposure controls:

Appropriate engineering controls use: Process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below recommended exposure limits.

General Personal Protection: Safety goggles or face shield, protective chemical resistant gloves, protective clothing.
Please refer to the exposure scenario annex for details.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Physical state:	Crystalline solid
Colour:	White
Odour:	Odourless
Odour threshold:	No data available
pH:	1.18 (10 g/l at 25°C, GESTIS)
Melting point:	205°C
Solidification point:	Not applicable
Boiling point:	Decomposes before boiling
Flash point:	Not applicable
Relat. Evapor. Rate comp. to butyl acetate:	No data available
Flammability (solid, gas):	Not applicable
Explosive limits:	Not applicable
Vapour pressure:	0.78 Pa at 20°C
Relative vapour density at 20°C:	No data available
Relative density:	2.15 g/cm ³ at 25°C
Solubility:	181.4 g/L at 20°C
Log Pow:	Not applicable
Self- ignition temperature:	Not applicable
Decomposition temperature:	209°C

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Viscosity, kinematic:	Not applicable
Viscosity, dynamic:	Not applicable
Explosive properties:	Not explosive
Oxidising properties:	Not oxidising
Other information:	No additional data available.

10. STABILITY AND REACTIVITY

Reactivity:	See section 7.
Chemical stability:	Stable under normal condition.
Possibility of hazardous reactions:	Sulphamic acid may react violently with nitrates and nitric acid, sometimes even leading to explosions – see section 7.
Conditions to avoid:	Avoid reacting with cyanides, nitrates, sulphides, chlorine, hypochlorous acid or hypochlorite,
Incompatible materials:	See section 7.
Hazardous decomposition products:	Thermal decomposition products SO ₂ , SO ₃ and NH ₃ .

11. TOXICOLOGICAL INFORMATION

Acute toxicity:	Acute oral toxicity (rat): LD ₅₀ (rat) >200mg/kg (OECD TG 401, GLP compliance, 1984). Acute dermal toxicity (rat): LD ₅₀ (rat) > 2000mg/kg (OECD Guideline 402, GLP compliance, 2010). Acute dermal toxicity: No data available
Repeated dose toxicity:	Oral: NOAEL (rat) = 10,000 ppm (OECD TG 408, 2000) Inhalation: No data available Dermal: No data available
Skin corrosion/irritation:	Skin irritation: Highly irritating (Fiche Toxicologique No.209.I.N.R.S Paris, 2000).
Serious eye damage/irritation:	Eye irritation (rabbit): moderately irritating (EPA OPPTS 870. 2400, non-GLP, 1974).
Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity:	No mutagenic potential in mammalian cell gene mutation test (OECD TG 476, GLP, 2010, Chinese hamster Ovary (CHO)).
Carcinogenicity:	No data available
Reproductive toxicity:	No data available
Specific target organ toxicity (single exposure):	No data available
Specific target organ toxicity (repeated exposure):	No data available
Aspiration hazard:	No data available

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12. ECOLOGICAL INFORMATION

Toxicity: LC₅₀ (96h, Pimephales promelas): 70.3 mg/L test mat. (meas. (geom. Mean)) (OECD TG 203, 1981).

Fish: EC₅₀ (24h, Daphnia magna): 71.6 mg/L test mat. (Nominal) (OECD TG 202, 2010).

Algae: ErC₅₀ (72h): 48 mg/L test mat. (Nominal) (OECD TG 201, 2010).

Micro-organisms: EC₅₀ (3h): > 200 mg/L test mat. (Nominal) (OECD TG 209, 2010).

Exposure Pattern:

Freshwater:	0.048 mg/L
Marine water:	0.0048 mg/L
Sewage treatment plants:	2 mg/L
Freshwater sediments:	0.173 mg/kg dwt
Marine water sediments:	0.0173 mg/kg dwt
Soil:	0.00638 mg/kg dwt

Persistence and degradability:

Half-life (DT₅₀) (OECD TG 111, 1973):

T_{1/2} (pH 1.14): >1000 - <10000 h at 50°C; Rate constants for hydrolysis = 5.81 E -4)

T_{1/2} (pH 1.8): >1000 - <10000 h at 50°C; Rate constants for hydrolysis = 1.28 E -4)

T_{1/2} (pH 2.5): >10000 - <100000 h at 50°C; Rate constants for hydrolysis = 4.58 E -5)

T_{1/2} (pH 1.3): >100 - <1000 h at 60°C; Rate constants for hydrolysis = 1.86m E -3)

T_{1/2} (pH 1.94): >100 - <1000 h at 60°C; Rate constants for hydrolysis = 5.46 E -4)

T_{1/2} (pH 2.2): >1000 - <10000 h at 60°C; Rate constants for hydrolysis = 3.02 E -4)

T_{1/2} (pH 1.44): >100 - <1000 h at 70°C; Rate constants for hydrolysis = 3.5 E -3)

T_{1/2} (pH 1.98): >100 - <1000 h at 70°C; Rate constants for hydrolysis = 1.4 E -3)

T_{1/2} (pH 2.5): >1000 - <10000 h at 70°C; Rate constants for hydrolysis = 4.18 E -4)

T_{1/2} (pH 1.05): ca. 100 h at 70°C; Rate constants for hydrolysis = 7.67 E -3)

The conclusion is that Sulphamic acid is stable in water at pH 4, 7 and 9 at 25°C, with a half-life greater than one year. Sulphamic acid is an inorganic substance, so the biodegradability criterion is not applicable.

Bioaccumulative potential: Not applicable. Sulphamic acid is an inorganic substance with the high water solubility and without heavy metal, which indicates it has no potential of bio-accumulation.

Mobility in soil: Not applicable.

Results of PBT and vPvB assessment: Sulphamic acid is inorganic. The PBT and vPvB criteria of Annex XIII to the regulation do not apply to it.

Other adverse effects: No data available.

13. DISPOSAL CONSIDERATIONS

Product disposal: Observe specific national regulation.

Contaminated packaging: Contaminated, empty containers must be disposed of as chemical waste.

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14. TRANSPORT INFORMATION

Labels required: CORROSIVE

Land transport (ADR/RID/GGVSE):

UN number: 2967

UN proper shipping name: Sulphamic Acid

Transport hazard class(es): 8

Packing group: III

Environmental hazard: No relevant data

Special precautions for user:

Hazard identification (kemler):	80
Classification code:	C2
Hazard label:	8
Special provisions:	None
Add limited quantity:	5kg

Air transport (ICAO-IATA/DGR):

UN number: 2967

UN proper shipping name: Sulphamic Acid

Transport hazard class(es): ICAC-IATA Class (Subrisk): 8

Packing group: III

Environmental hazard: No relevant data

Special precautions for user:

Special provisions Cargo only:	None
Packing instructions:	
Cargo only maximum Qty/Pack:	100kg. 864.
Passenger and Cargo packing instructions:	
Passenger and Cargo maximum Qty/Pack:	25kg. 860.
Passenger and Cargo Limited Quantity:	5kg
Packing instructions:	
Passenger and Cargo maximum Qty/Pack:	Y845

Sea transport (IMDG-Code/ GGVSee):

UN number: 2967

UN proper shipping name: Sulphamic Acid

Transport hazard class(es): 8

IMDG Subrisk: None

Packing group: III

Environmental hazard: No relevant data

Special precautions for user:

EMS Number:	F-A, S-B
Special provisions:	None
Limited Quantities:	5kg

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Inland waterways transport (ADNR/ River Rhine):

UN number:	2967
UN proper shipping name:	Sulphamic Acid
Transport hazard class(es):	8
ADNR label:	8
Packing group:	III
Environmental hazard:	No relevant data
Special precautions for user:	Classification code: C2
	Limited quantity: LQ24
	Equipment required: PP; EP
	Fire cones number: 0

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: No data available.

15. REGULATORY INFORMATION

EU-Regulations: This safety data sheet is in compliance with the following EU legislation and its adaptations – as far as applicable: 67/548/EEC, 1999/45/EC. Regulation (EC) no. 1272/2008, Regulation (EC) No 453/2010, 98/24/EC, 92/85/EEC, 94/33/EC, 91/689/EEC and 1999/13/EC.

International/ National regulations: No data available.

Chemical safety assessment: A Chemical Assessment has been carried out.

Note: The regulatory information given above only indicates the principal regulations specifically Applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Legal disclaimer: The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.