

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
Substance name : Sulfamic Acid
CAS No : 5329-14-6
Product code : LC25420
Formula : H₃NO₃S
Synonyms : amidosulfonic acid / sulfamidic acid
BIG no : 10656

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Laboratory chemical
Chemical intermediate

1.3. Details of the supplier of the safety data sheet

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Corr. 1C H314
Eye Dam. 1 H318
Aquatic Acute 2 H401

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H314 - Causes severe skin burns and eye damage
H401 - Toxic to aquatic life

Precautionary statements (GHS-US) :

P260 - Do not breathe dust
P264 - Wash exposed skin thoroughly after handling
P273 - Avoid release to the environment
P280 - Wear protective gloves, eye protection, protective clothing
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to comply with local, state and federal regulations

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2.3. Other hazards

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type : Mono-constituent

Name	Product identifier	%	GHS-US classification
Sulfamic Acid (Main constituent)	(CAS No) 5329-14-6	100	Skin Corr. 1C, H314 Eye Dam. 1, H318 Aquatic Acute 2, H401

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
- First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service. Doctor: administration of corticoid spray.
- First-aid measures after skin contact : Wash immediately with lots of water. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Take victim to an ophthalmologist if irritation persists.
- First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Do not give chemical antidote.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : Dry/sore throat. Coughing. ON CONTINUOUS EXPOSURE/CONTACT: Respiratory difficulties. Corrosion of the upper respiratory tract.
- Symptoms/injuries after skin contact : Tingling/irritation of the skin. ON CONTINUOUS EXPOSURE/CONTACT: Caustic burns/corrosion of the skin.
- Symptoms/injuries after eye contact : Irritation of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Corrosion of the eye tissue.
- Symptoms/injuries after ingestion : Nausea. Vomiting. Abdominal pain. Diarrhoea.
- Chronic symptoms : No effects known.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Adapt extinguishing media to the environment.
- Unsuitable extinguishing media : No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard".
- Explosion hazard : INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".
- Reactivity : Decomposes slowly on exposure to water (moisture): release of corrosive products. This reaction is accelerated on exposure to temperature rise. Reacts on exposure to water (moisture) with (some) metals: release of highly flammable gases/vapours (hydrogen). On burning: release of toxic and corrosive gases/vapours (nitrous vapours, sulphur oxides). Reacts violently with (strong) oxidizers. Reacts exothermically with (some) bases.

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5.3. Advice for firefighters

- Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
- Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Dilute toxic gases with water spray. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.
- Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Gloves. Face-shield. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Dust cloud production: dust-tight suit.
- Emergency procedures : Mark the danger area. Prevent dust cloud formation. No naked flames. Wash contaminated clothes. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.
- Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection. Do not breathe dust.
- Emergency procedures : Stop release. Ventilate area.

6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

- For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the solid spill. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain. Knock down/dilute dust cloud with water spray.
- Methods for cleaning up : Prevent dust cloud formation. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Spill must not return in its original container. See "Material-handling" for suitable container materials. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Avoid raising dust. Keep away from naked flames/heat. Observe normal hygiene standards. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

7.2. Conditions for safe storage, including any incompatibilities

- Incompatible products : Strong bases. Strong oxidizers. Strong reducing agents.
- Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.
- Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases. halogens. water/moisture.
- Storage area : Store in a dry area. Meet the legal requirements.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. watertight. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: cardboard. plastics. MATERIAL TO AVOID: No data available.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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8.2. Exposure controls

Appropriate engineering controls	: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate general and local exhaust ventilation.
Materials for protective clothing	: GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: neoprene. PVC. nitrile rubber. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: No data available.
Hand protection	: Gloves.
Eye protection	: Face shield. In case of dust production: protective goggles.
Skin and body protection	: Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing.
Respiratory protection	: Dust production: dust mask with filter type P2.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid. Crystalline powder.
Molecular mass	: 97.10 g/mol
Colour	: Colourless or white.
Odour	: Odourless.
Odour threshold	: No data available
pH	: 1.2 (1 %)
pH solution	: 1 %
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 205 °C
Freezing point	: No data available
Boiling point	: Not applicable
Flash point	: Not applicable
Self ignition temperature	: No data available
Decomposition temperature	: 205 °C
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 2.1
Density	: 2120 kg/m ³
Solubility	: Decomposes on exposure to water. Water: 18 g/100ml
Log Pow	: 0.10 (Experimental value)
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

VOC content	: Not applicable
Other properties	: Substance has acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Decomposes slowly on exposure to water (moisture): release of corrosive products. This reaction is accelerated on exposure to temperature rise. Reacts on exposure to water (moisture) with (some) metals: release of highly flammable gases/vapours (hydrogen). On burning: release of toxic and corrosive gases/vapours (nitrous vapours, sulphur oxides). Reacts violently with (strong) oxidizers. Reacts exothermically with (some) bases.

10.2. Chemical stability

Unstable on exposure to moisture.

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10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Incompatible materials.

10.5. Incompatible materials

Strong bases. Strong oxidizers. Strong reducing agents.

10.6. Hazardous decomposition products

Sulfur compounds.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Sulfamic Acid (f)5329-14-6	
LD50 oral rat	3160 mg/kg bw/day (Rat)
LD50 dermal rat	> 2000 mg/kg bodyweight (Rat; Experimental value,Rat; Experimental value)

Skin corrosion/irritation : Causes severe skin burns and eye damage.

pH: 1.2 (1 %)

Serious eye damage/irritation : Causes serious eye damage.

pH: 1.2 (1 %)

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : Dry/sore throat. Coughing. ON CONTINUOUS EXPOSURE/CONTACT: Respiratory difficulties. Corrosion of the upper respiratory tract.

Symptoms/injuries after skin contact : Tingling/irritation of the skin. ON CONTINUOUS EXPOSURE/CONTACT: Caustic burns/corrosion of the skin.

Symptoms/injuries after eye contact : Irritation of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Corrosion of the eye tissue.

Symptoms/injuries after ingestion : Nausea. Vomiting. Abdominal pain. Diarrhoea.

Chronic symptoms : No effects known.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - air : TA-Luft Klasse 5.2.1.

Ecology - water : Harmful to fishes. Harmful to invertebrates (Daphnia). Harmful to algae. pH shift.

Sulfamic Acid (5329-14-6)	
LC50 fishes 1	> 14.2 mg/l (96 h; Pimephales promelas)
EC50 Daphnia 1	1.6 mg/l (48 h; Daphnia magna; GLP)
EC50 other aquatic organisms 1	>= 1000 mg/l (16 h; Pseudomonas putida)
LC50 fish 2	70.3 mg/l (96 h; Pimephales promelas)
Threshold limit algae 1	48 mg/l (72 h; Desmodesmus subspicatus; GLP)

12.2. Persistence and degradability

Sulfamic Acid (5329-14-6)	
Persistence and degradability	Biodegradability: not applicable. Biodegradability in soil: not applicable. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	Not applicable

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Sulfamic Acid (5329-14-6)	
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

Sulfamic Acid (5329-14-6)	
Log Pow	0.10 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

Sulfamic Acid (5329-14-6)	
Ecology - soil	Toxic to flora.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Remove for physico-chemical/biological treatment. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery.

Additional information : LWCA (the Netherlands): KGA category 06. Hazardous waste according to Directive 2008/98/EC.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN2967 Sulfamic acid, 8, III
UN-No.(DOT) : 2967
DOT NA no. : UN2967
DOT Proper Shipping Name : Sulfamic acid
Department of Transportation (DOT) Hazard Classes : 8 - Class 8 - Corrosive material 49 CFR 173.136
Hazard labels (DOT) : 8 - Corrosive substances



Packing group (DOT) : III - Minor Danger
DOT Special Provisions (49 CFR 172.102) : IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).
IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner.
T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2)
TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.

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DOT Packaging Exceptions (49 CFR 173.xxx)	: 154
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 213
DOT Packaging Bulk (49 CFR 173.xxx)	: 240
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 25 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 100 kg
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Additional information

Other information	: No supplementary information available.
State during transport (ADR-RID)	: as solid. Substance assigned to class 8 for its corrosion in water.

ADR

Transport document description	: UN 2967 Sulphamic acid, 8, III, (E)
Packing group (ADR)	: III
Class (ADR)	: 8 - Corrosive substances
Hazard identification number (Kemler No.)	: 80
Classification code (ADR)	: C2
Danger labels (ADR)	: 8 - Corrosive substances



Orange plates	:
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Tunnel restriction code	: E
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Transport by sea

UN-No. (IMDG)	: 2967
Class (IMDG)	: 8 - Corrosive substances
EmS-No. (1)	: F-A
EmS-No. (2)	: S-B

Air transport

UN-No.(IATA)	: 2967
Class (IATA)	: 8 - Corrosives
Packing group (IATA)	: III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

Sulfamic Acid (5329-14-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

15.2. International regulations

CANADA

Sulfamic Acid (5329-14-6)	
WHMIS Classification	Class E - Corrosive Material

EU-Regulations

No additional information available

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

Eye Irrit. 2 H319
Skin Irrit. 2 H315
Aquatic Chronic 3 H412
Full text of H-phrases: see section 16

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

Xi; R36/38
R52/53
Full text of R-phrases: see section 16

15.2.2. National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

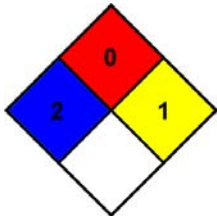
Full text of H-phrases: see section 16:

Aquatic Acute 2	Hazardous to the aquatic environment — AcuteHazard, Category 2
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Skin Corr. 1C	Skin corrosion/irritation, Category 1C
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H401	Toxic to aquatic life

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard

Physical : 1 Slight Hazard

Personal Protection : F

SDS US (GHS HazCom 2012)

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