

Section 1: Product & Company Information

Product Identifier: Sulfamic Acid

Other Means of Identification

Product Number: 110009

Recommended Use and Restrictions on Use

Recommended Use: Used as a Standard in alkalimetry, in acid cleaning, in nitrite removal, chlorine stabilization for swimming pools, cooling towers, and paper mills; as a catalyst for urea- formaldehyde resins and as a sulfonating agent.

Restrictions on Use: Not known.

Manufacturer / Importer / Supplier / Distributor Information

Company Name: CORECHEM Inc.

Address: 4320 Greenway Drive
Knoxville, TN 37918 USA

Information Telephone Number: 1-865-524-4239

Fax Number: 1-865-524-3375

Website: www.corecheminc.com

Contact Person: Regulatory Manager

E-mail: regulatory@corecheminc.com

Emergency Phone Number: Chemtrec® 1-800-424-9300 / Outside USA 1-703-527-3887 (monitored 24 hours/day)

Section 2: Hazards Identification

GHS Hazard Classification(s)

In accordance with OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

Physical Hazard(s)

Not classified.

Health Hazard(s)

Corrosion/Irritation, Skin - 2

(Corrosion) Damage/Irritation, Eye - 2A

Environmental Hazard(s)

Not classified.

Label Elements

Signal Word

WARNING

Hazard Symbol(s)



Hazard Statement(s)

H315: Causes skin Irritation.

H319: Causes serious eye Irritation.

Precautionary Statements

General

Not applicable.

Prevention

P264: Wash face, hands and any exposed skin thoroughly after handling.

P273: Avoid release to the environment.

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

Response

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

SAFETY DATA SHEET

Print Date: March 19, 2025

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321: Specific treatment (see supplemental first aid instructions on this label).
P332 + P313: If skin irritation occurs: Get medical advice/attention.
P337 + P313: If eye irritation persists: Get medical advice/attention.
P362: Take off contaminated clothing and wash before reuse.

Storage

P405: Store locked up

Disposal

P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC)

None known.

Section 3: Composition/Information on Ingredients

Substance

Chemical Identity ²	Common Name/Synonym(s)	CAS # ³	Weight %	Impurity or Stabilizing Additive
Sulfamic Acid	Amidosulfonic acid, amidosulfuric acid, sulphamic acid.	5329-14-6	>99.5%	No

- Information regarding the composition and the percent ranges of the mixtures ingredients are not presented as it Confidential Business Information (CBI). Where a medical emergency exists (as determined by medical professional), timely disclosure of CBI is assured. The information omitted pertains to only the names of the substances and the concentration in the mixture (product) and can only be requested by a doctor/physician or Local/State/Provincial or Federal Authority.
- Non-hazardous ingredients are not presented as to protect the proprietary formula of the product.
- "—"Indicates ingredient is a mixture and contains multiple ingredients or may have no identifying CAS number.

Section 4: First-Aid Measures

General Information

Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Inhalation

Remove exposed person to fresh air and support breathing as needed.

Skin Contact

Quickly remove contaminated clothing (if not stuck to skin) Rinse with flooding amounts of water for at least 15 minutes. For reddened or blistered skin, consult a physician.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

Ingestion

Never give anything by mouth to an unconscious or convulsing person. Contact a poison control center. Unless the poison control center advises otherwise, have the conscious and alert person drink 1 to 2 glasses of water to dilute. Do not induce vomiting because of the corrosive nature of sulfamic acid. Vomiting will worsen esophageal condition.

Most important symptoms/effects, acute and delayed

Symptoms

Causes severe skin and eye burns. Causes digestive tract burns. May cause redness and tearing of the eyes. Burning sensation.

Indication of immediate medical attention and special treatment needed

Hazards

No data available.

Treatment

Treatment is symptomatic and supportive. Treat as thermal burns. Severe inhalation exposures may result in delayed pulmonary edema; in these cases, consider close observation for 24 to 48 hours.

Section 5: Fire-Fighting Measures

General Fire Hazards

In case of fire and/or explosion do not breathe fumes. Emits toxic gases when heated.

Suitable (and Unsuitable) Extinguishing Media

Suitable Extinguishing Media

Use fire-extinguishing media appropriate for surrounding materials. Dry chemical, CO₂, alcohol-resistant foam or water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

Do not scatter spilled material with high pressure water streams.

Specific Hazards Arising from the Chemical

During fire, gases hazardous to health may be formed. Hazardous combustion products include Sulfur oxides, nitrogen oxides, and ammonia gas. Thermal decomposition can lead to release of irritating and toxic gases and vapors. Nitrogen oxides (NO_x). Oxides of sulfur.

Special Protective Equipment and Precautions for Firefighters

Special Fire-Fighting Equipment Procedures

Do not release runoff from fire control methods to sewers or waterways.

Special Protective Equipment for Fire-Fighters

Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive pressure mode.

Section 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Notify safety personnel. Isolate and ventilate area, deny entry, and stay upwind. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.

Methods and Materials for Containment and Clean-Up

Small spills: Do not sweep or otherwise disperse into the air. Carefully scoop up or vacuum (with appropriate filter) and place in a suitable container for disposal.

Large spills: Flush with plenty of water to containment area for later disposal. Do not release into sewer or waterways. Damp mop with dilute alkaline solution (Sodium Bicarbonate, sodium hydroxide, lime)

Notification Procedures

Prevent entry into waterways, sewer, basements or confined areas. Stop leak if you can do so without risk. Inform authorities if large amounts are involved.

Environmental Precautions

Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

Section 7: Handling and Storage

Precautions for Safe Handling

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

Conditions for Safe Storage, including any Incompatibilities

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8: Exposure Controls/Personal Protection

Control Parameters

Occupational Exposure Limits

The product does not contain any relevant quantities of hazardous materials with critical values that have to be monitored in the workplace.

Biological Limit Values

The product does not contain any relevant quantities of hazardous materials with assigned biological limit values.

Appropriate Engineering Controls

To prevent dispersion of dust into work area, enclose all processes where it is possible. Provide general or local exhaust ventilation systems to maintain airborne concentrations as low as possible. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source. Instruct employees on the proper use of PPE to prevent severe irritation and burns from contact.

Individual protection measures, such as personal protective equipment (PPE)

General Information

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

SAFETY DATA SHEET

Print Date: March 19, 2025

Eye/Face Protection

Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.

Skin Protection

Hand Protection

Wear appropriate chemical resistant gloves.

Other

Separate contaminated work clothes from street clothes. Launder before reuse. Remove sulfamic Acid from your shoes and clean personal protective equipment.

Respiratory Protection

Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 ECFRE1910.134) and if necessary, wear a MSHA/NIOSH-approved dust respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of enough oxygen. For emergency or non-routine operations. (cleaning spills, reactor vessels, or storage tanks) wear an SCBA. Warning! Air purifying respirators do not protect workers in oxygen deficient atmospheres. If respirators are used, OSHA requires a written respiratory protection program that includes at least: Medical certification, training, fit testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Hygiene Measures

Never eat, drink, or smoke in work areas. Practice good personal hygiene after using sulfamic acid, especially before eating, drinking, smoking, using the toilet or applying cosmetics.

Section 9: Physical and Chemical Properties

Appearance:

Physical State: Solid Crystalline Powder
Color: White

Odor:

Odorless

Odor Threshold:

No data available.

pH:

1.18 (25 °C) (1% solution)

Melting Point/Freezing Point:

205 °C (401 °F)

Specific Gravity (H₂O=1, at 4 °C)

2.15 g/cc

Initial Boiling Point and Boiling Range:

Decomposes @ 205 °C

Flash Point:

No data available.

Evaporation Rate (butyl acetate=1):

No data available.

Flammability (solid, gas):

No data available.

Upper/Lower Limit on Flammability or Explosive Limits

Flammability Limit – Upper: No data available.

Flammability Limit – Lower: No data available.

Explosive Limit – Upper: No data available.

Explosive Limit – Lower: No data available.

Vapor Pressure:

0.006 mm Hg at 68 ° F (20 °C)

Vapor Density (air =1):

3.3

Relative Density (water=1):

2.13 g/cc (20 °C)

Solubility(ies):

Solubility in water: 213 g/l at 20 °C

Solubility (other): Sparingly Soluble in ethanol and methanol, Slightly Soluble in acetone, Soluble in nitrogenous bases, (i.e. ammonia) and nitrogen containing organic solvents. (i.e. pyrrolidine, formamide, and dimethylformamide.) Insoluble in ether, carbon disulfide, and carbon tetrachloride.

Partition coefficient (n-octanol/water):

No data available.

Auto-Ignition Temperature:

No data available.

Decomposition Temperature:

209 °C (408.2 °F)

Viscosity:

No data available.

Other Information:

Molecular Weight: 97.09 g/mol

Formula: H₃NO₃S

Section 10: Stability and Reactivity

Reactivity

Contact with water results in slow hydrolysis which liberates toxic and/or flammable gases.

Chemical Stability

Sulfamic acid is stable when dry, but it slowly hydrolyzes in solution to form ammonium Bisulfate.

Possibility of Hazardous Reactions

Hazardous polymerization does not occur.

Conditions to Avoid

Exposure to incompatibles and dispersion of sulfamic acid particulates into the air. Heat, flames and sparks. Protect from moisture.

Incompatible Materials

Sulfamic Acid undergoes a violent or explosive reaction with chlorine, metal nitrates + heat, metal nitrites+ heat, and fuming nitric acid.

Hazardous Decomposition Products

Thermal decomposition may produce oxides of carbon and nitrogen. Oxides of sulfur. ammonia

Section 11: Toxicological Information

Information on routes of exposure

Ingestion: May cause burns of the gastrointestinal tract if swallowed. Nausea, vomiting and diarrhea.

Inhalation: Irritating to respiratory system.

Skin Contact: Causes skin burns.

Eye Contact: Causes serious eye damage. May cause redness, itching, and pain.

Information on Toxicological Effects

Acute Toxicity (List all possible routes of exposure)

Oral

Sulfamic Acid: LD50(Rat) 2140 mg/kg

Sulfamic Acid: LD50 (Mouse) 1312 mg/kg

Dermal

Sulfamic Acid: LD50(Rat) 2000 mg/kg

Inhalation

No data available.

Repeated Dose Toxicity

No data available.

Skin Corrosion/Irritation

Causes skin burns.

Serious Eye Damage/Eye Irritation

Causes serious eye damage.

Respiratory/Skin Sensitization

Not a skin sensitizer.

Carcinogenicity

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

US. National Toxicology Program (NTP) Report on Carcinogens

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Germ Cell Mutagenicity

In Vitro

No mutagenic components identified.

In Vivo

No mutagenic components identified.

Reproductive Toxicity

None known.

Specific Target Organ Toxicity – Single Exposure

None known.

Specific Target Organ Toxicity – Repeated Exposure

None known.

Aspiration Hazard

Not classified.

Other Effects

Redness. May cause redness and tearing of the eyes.

Section 12: Ecological Information

Ecotoxicity

Acute Hazards to the Aquatic Environment

Fish

Sulfamic Acid: LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): 70.3 mg/l

Aquatic Invertebrates

Sulfamic Acid: LC 50 (*Daphnia Magna*, 48 h): 71.6 mg/l

Toxicity to Aquatic Plants

Sulfamic Acid: LC 50 (Fathead minnow (*Desmodesmus subspicatus*), 72 h): 48 mg/l

Chronic Hazards to the Aquatic Environment

Fish

No data available.

Aquatic Invertebrates

No data available.

Toxicity to Aquatic Plants

No data available.

Persistence and Degradability

Biodegradation

There are no data on the degradability of this product.

BOD/COD Ratio

No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow)

Sulfamic Acid: 0.10

Mobility in Soil

No data available.

Other Adverse Effects

Harmful to aquatic life with long lasting effects.

Section 13: Disposal Considerations

Disposal Instructions

Dilute with water, neutralize with alkaline material (lime, sodium hydroxide, sodium bicarbonate) and flush to sewer with plenty of water. Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state and local regulations.

Contaminated Packaging

Since emptied containers retain product residue, follow label warnings even after container is emptied.

Section 14: Transportation Information

US Department of Transportation (DOT)

UN Number: UN2967

UN Proper Shipping Name: Sulfamic Acid

Technical Name: -

Hazard Class: 8

Subsidiary Hazard Risk: -

Packing Group: III

DOT Label/Placard Exemptions: Not determined

Special Provisions: IB8, IP3, T1, TP33

Packaging Exceptions: 49CFR 173.154

Packaging Non-Bulk: 49CFR 173.213

Packaging Bulk: 49CFR 173.240

Reportable Quantity (RQ): None
Marine Pollutant: No
Poison Inhalation Hazard: No
Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Emergency Response Guidebook (ERG) #: 154

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

Section 15: Regulatory Information

US Federal Regulations

Toxic Substance Control Act (TSCA), Chemical Substance Inventory, Section 8(b)

This product or ingredient(s) are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substance List (40 CFR 302.4)

No chemical(s) in this material are subject to the reporting requirements of CERCLA.

Clean Air Act (CAA), Section 112(r)

No chemical(s) in this material are subject to the reporting requirements of CAA.

Emergency Planning and Community Right-To-Know Act (EPCRA)

EPCRA 302 Extremely Hazardous Substance

No chemical(s) in this material are subject to the reporting requirements of SARA Title III, Section 302.

EPCRA 304 Emergency Response Notification

No chemical(s) in this material are subject to the reporting requirements of SARA Title III, Section 304.

EPCRA 311/312 Emergency and Hazardous Materials Reporting

Fire Hazard: No
Sudden Release of Pressure: No
Reactive: No
Acute (Immediate) Health Hazard: Yes
Chronic (Delayed) Health Hazard: No

EPCRA 313 Toxic Chemical Release Inventory (TRI) Reporting

This material does not contain any chemical(s) with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Important Note: Due to the changing nature of regulatory requirements, the information in this document should NOT be considered all-inclusive or authoritative. Users should make their own investigations to determine the suitability of the information for their particular purposes. International, Federal, State and Local regulations should be consulted to determine compliance with all required reporting requirements.

Section 16: Other Information

Hazardous Materials Identification System (HMIS®) Classification

Health Hazard: 2
Chronic Health Hazard: /
Flammability: 0
Physical Hazard: 0
Personal Protection: X

(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

National Fire Protection Association (NFPA 704) Rating

Health Hazard: 2
Fire Hazard: 0
Reactivity Hazard: 0
Special: N/A

(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

Prepared By: Regulatory Manager
Version #: 001
Issue Date: July 9, 2015
Last Revised By: Regulatory Assistant C

Last Revision Date: 7/6/2023
Current Revision: 03
Sections Revised: 2-6, 9, 11, 16

Key to Abbreviations and Acronyms

ATE - Acute Toxicity Estimate	ACGIH - American Conference of Industrial Hygienists
BCF - Bioconcentration Factor	AIHA - American Industrial Hygiene Association
EC50 - Effective concentration, 50%	BEI - Biological Exposure Indices
IDHL - Immediately Dangerous to Life and Health	CAS - Chemical Abstracts Service
Kg - Kilogram	DOT - US Department of Transportation
l - Liter	EPA - US Environmental Protection Agency
lb - Pound	GHS - Globally Harmonized System of Classification and Labelling of Chemicals
LC50 - Lethal Concentration, 50%	IARC - International Agency for Research on Cancer
LD50 - Lethal Dose, 50%	IATA - International Air Transport Association
mg - milligram	IBC - Intermediate Bulk Container
ml - milliliter	IMDG - International Maritime Dangerous Goods
N/A - Not Applicable	NIOSH - National Institute for Occupational Safety and Health
N/D - Not Determined	NTP - National Toxicology Program
PEL - Permissible Exposure Limit	OSHA - US Occupational Health and Safety Administration
REL - Recommended Exposure Limit	SARA - US EPA Superfund Amendments and Reauthorization Act
STEL - Short-term Exposure Limit	TSCA - US EPA Toxic Substances Control Act
TWA - Time weighted average	UN - United Nations

References

HSDB® - Hazardous Substances Data Bank

Disclaimer

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