

1. IDENTIFICATION

Product Name	Sulphamic Acid
Other Names	Aminosulfonic acid; Sulphamidic acid
Uses	Manufacture of sodium cyclamate, manufacture of flame retardants, descaling, acid cleaning, nitrite removal, anodizing metals and electroplating.
Chemical Family	No Data Available
Chemical Formula	H3NO3S
Chemical Name	Sulfamic acid
Product Description	Inorganic acid.

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Suite 13A.03, Menara Summit Persiaran Kewajipan USJ1 47600 UEP Subang Jaya Selangor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Australia – Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
National Poison Centre	Malaysia	+60-4-6536-999
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)

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Globally Harmonised System

Hazard Classification Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard Categories Skin Corrosion/Irritation - Category 2
Serious Eye Damage/Irritation - Category 2
Long-term Hazard To The Aquatic Environment - Category 3

Pictograms



Signal Word Warning

Hazard Statements

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long lasting effects.

Precautionary Statements

Prevention	P273	Avoid release to the environment.	
	P280	Wear protective gloves/eye protection/face protection.	
	Response	P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P332 + P313	If skin irritation occurs: Get medical advice.
		P337 + P313	If eye irritation persists: Get medical advice.
Disposal	P362 + P364	Take off contaminated clothing and wash it before reuse.	
	P501	Dispose of contents/container in accordance with local / regional / national / international regulations.	

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification Hazardous according to the criteria of Safe Work Australia under Model WHS Regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Sulfamic acid	H3NO3S	5329-14-6	<=100 %

4. FIRST AID MEASURES**Description of necessary measures according to routes of exposure**

Swallowed	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. Never give anything by mouth to an unconscious person.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue flushing until advised to stop by a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor, or for at least 15 minutes.
Skin	IF ON SKIN (or hair): Remove and isolate contaminated clothing and shoes. Immediately wash skin and hair with plenty of mild soap and water, followed by warm water rinse. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse. *For minor skin contact, avoid spreading material on unaffected skin.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention. Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult.
Advice to Doctor	Treat symptomatically. Keep victim calm and warm. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. *Most important symptoms and effects, both acute and delayed: Causes skin irritation. Causes serious eye irritation.
Medical Conditions Aggravated by Exposure	No information available.

5. FIRE FIGHTING MEASURES

General Measures	Move containers from fire area if you can do it without risk. Cool containers with water spray until well after fire is out. Do not get water inside containers!
Flammability Conditions	Non-combustible; substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
Extinguishing Media	If material is involved in a fire, use dry chemical, Carbon dioxide (CO ₂), foam or water spray for extinction. Dike fire-control water for later disposal; do not scatter the material.
Fire and Explosion Hazard	Decomposes on heating, emitting toxic fumes.
Hazardous Products of Combustion	Fire or heat will produce irritating, corrosive and/or toxic gases, including Nitrogen oxides (NO _x), Sulphur oxides.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may be corrosive and/or toxic and cause pollution.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing - It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	2X

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation - Ventilate enclosed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material. Avoid generating dust. Avoid
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	breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Carefully shovel or sweep up spilled for disposal material and place in suitable container (see SECTION 13).
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.
Decontamination	After cleaning, flush away traces with water.
Environmental Precautionary Measures	Spillages and decontamination runoff should be prevented from entering drains and watercourses. If contamination of sewers or waterways has occurred, advise local emergency services.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher ground. *Large spill: Immediately contact Police or Fire Brigade; Consider initial downwind evacuation of areas within at least 250 m.
Personal Precautionary Measures	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Minimise dust generation and accumulation. Avoid breathing dust/aerosols and contact with eyes, skin and clothing. Do not ingest. Wear protective gloves/eye protection/face protection (see SECTION 8). Avoid release to the environment.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed when not in use - check regularly for spills. Avoid exposure to moisture. Keep away from heat and sources of ignition - No smoking. Keep away from foodstuffs and incompatible materials (see SECTION 10).
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product. For dusts from solid substances without specific occupational exposure standards: - Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m ³ (measured as inhalable dust). - New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m ³ ; TWA = 3 mg/m ³ (respirable dust).
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Protection Equipment	- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Dust mask/particulate respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses with side-shields or chemical goggles. - Hand protection: Handle with gloves. Recommended: Impervious gloves, e.g. Nitrile rubber. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Impervious clothing; Overalls, safety shoes/boots.
Special Hazards Precautions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
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Appearance	Crystals
Odour	Odourless
Colour	White
pH	1.18 1% solution @ 25°C
Vapour Pressure	0.0078 hPa (@ No Data Available)
Relative Vapour Density	3.35
Boiling Point	Decomposes
Melting Point	205 °C
Freezing Point	No Data Available
Solubility	213 g/L 20°C
Specific Gravity	2.13 g/cm ³
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	approx 1.3 kg/m ³
Corrosion Rate	No Data Available
Decomposition Temperature	>=209 °C
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	log Pow: 0.10
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	No information available.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Non-combustible; substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
Reactions That Release Gases or Vapours	Decomposes on heating, emitting toxic fumes, including Nitrogen oxides (NO _x), Sulphur oxides.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information Attacks metals in the presence of moisture.

Chemical Stability	Stable under recommended storage conditions.
Conditions to Avoid	Avoid generating dust. Avoid exposure to moisture.
Materials to Avoid	Incompatible/reactive with strong oxidising agents, strong bases.
Hazardous Decomposition Products	Decomposes on heating, emitting toxic fumes, including Nitrogen oxides (NO _x), Sulphur oxides.
Hazardous Polymerisation	Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	<p>Information on toxicological effects:</p> <ul style="list-style-type: none"> - Acute toxicity: Not classified (Based on available data, the classification criteria are not met). - Skin corrosion/irritation: Causes skin irritation. Irritating (Human). - Eye damage/irritation: Causes serious eye irritation. Irritating (Rabbit) [OECD Guideline 405]. - Respiratory/skin sensitisation: Not classified (Based on available data, the classification criteria are not met). - Germ cell mutagenicity: Not classified (Based on available data, the classification criteria are not met). - Carcinogenicity: Not classified (Based on available data, the classification criteria are not met). - Reproductive toxicity: Not classified (Based on available data, the classification criteria are not met). - STOT (single exposure): Not classified (Based on available data, the classification criteria are not met). - STOT (repeated exposure): Not classified (Based on available data, the classification criteria are not met). - Aspiration toxicity: Not classified (Based on available data, the classification criteria are not met). <p>Information on likely routes of exposure:</p> <ul style="list-style-type: none"> - Ingestion: Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract. - Eye contact: Causes serious eye irritation. - Skin contact: Causes skin irritation. - Inhalation: Breathing in dust may result in respiratory irritation (mucous membranes). Inhalation may provoke spasm, inflammation and edema of the bronchi, inflammation and edema of the larynx; may cause chemical pneumonitis. <p>Chronic effects: No information available.</p>
Acute	
Ingestion	<p>Acute toxicity (Oral):</p> <ul style="list-style-type: none"> - LD50, Rat: 2,065 mg/kg [OECD Guideline 401].
Other	<p>Acute toxicity (Dermal):</p> <ul style="list-style-type: none"> - LD50, Rat: >2,000 mg/kg [OECD Guideline 402; Supplier's SDS].
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	<p>Aquatic toxicity:</p> <ul style="list-style-type: none"> - LC50, Fish (Pimephales promelas): 70.3 mg/l (96 h) [OECD Test Guideline 203]. - EC50, Crustacea (Daphnia magna): 71.6 mg/l (48 h) [OECD Guideline 202]. - EC50, Algae (Desmodesmus subspicatus): 48 mg/l (72 h) [OECD Guideline 201].
Persistence/Degradability	No information available.
Mobility	No information available.
Environmental Fate	Harmful to aquatic life with long lasting effects - Avoid release to the environment.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container in accordance with local/regional/national regulations.
Special Precautions for Land Fill	Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	SULPHAMIC ACID
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
EPG	154 Substances - Toxic and/or Corrosive (Non-Combustible)
UN Number	2967
Hazchem	2X
Pack Group	III
Special Provision	No Data Available

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	SULPHAMIC ACID
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
EPG	154 Substances - Toxic and/or Corrosive (Non-Combustible)
UN Number	2967
Hazchem	2X
Pack Group	III
Special Provision	No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	SULPHAMIC ACID
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
EPG	154 Substances - Toxic and/or Corrosive (Non-Combustible)
UN Number	2967
Hazchem	2X
Pack Group	III
Special Provision	No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name	SULPHAMIC ACID
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available

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ERG 154 Substances - Toxic and/or Corrosive (Non-Combustible)
UN Number 2967
Hazchem 2X
Pack Group III
Special Provision No Data Available

Sea Transport

IMDG Code

Proper Shipping Name SULPHAMIC ACID
Class 8 Corrosive Substances
Subsidiary Risk(s) No Data Available
UN Number 2967
Hazchem 2X
Pack Group III
Special Provision No Data Available
EMS F-A, S-B
Marine Pollutant No

Air Transport

IATA DGR

Proper Shipping Name SULPHAMIC ACID
Class 8 Corrosive Substances
Subsidiary Risk(s) No Data Available
UN Number 2967
Hazchem 2X
Pack Group III
Special Provision No Data Available

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information SULFAMIC ACID
Poisons Schedule (Aust) 6

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code HSR001549

National/Regional Inventories

SAFETY DATA SHEET SULPHAMIC ACID REVISION 5, DATE 25 APR 2023

Australia (AIIIC)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Listed
China (IECSC)	Listed
Europe (EINECS)	226-218-8
Europe (REACH)	Listed
Japan (ENCS/METI)	Listed
Korea (KECI)	Listed
Malaysia (List of Classified Substances)	Listed
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Listed
Taiwan (TCSI)	Listed
USA (TSCA)	Listed
Mexico (INSQ)	Not Determined

16. OTHER INFORMATION

Related Product Codes	SUACID0800, SUACID1000, SUACID1001, SUACID1002, SUACID1003, SUACID1004, SUACID1005, SUACID1006, SUACID1007, SUACID1008, SUACID1009, SUACID1010, SUACID1011, SUACID1012, SUACID1013, SUACID1014, SUACID1800, SUACID1801, SUACID1802, SUACID1803, SUACID1804, SUACID1805, SUACID1806, SUACID1807, SUACID1808, SUACID1809, SUACID1810, SUACID1811, SUACID1812, SUACID1813, SUACID1814, SUACID1815, SUACID1816, SUACID1817, SUACID1818, SUACID1850, SUACID1900, SUACID1901, SUACID1950, SUACID2000, SUACID2001, SUACID2002, SUACID2003, SUACID2004, SUACID2005, SUACID2006, SUACID2007, SUACID2009, SUACID2050, SUACID2100, SUACID2150, SUACID2500, SUACID2550, SUACID2600, SUACID2650, SUACID2800, SUACID2850, SUACID3000, SUACID3100, SUACID3300, SUACID3500, SUACID3501, SUACID3550, SUACID3600, SUACID3700, SUACID3800, SUACID3825, SUACID3850, SUACID3900, SUACID3910, SUACID3920, SUACID4000, SUACID4001, SUACID4500, SUACID4800, SUACID5000, SUACID5500, SUACID5525, SUACID5550, SUACID5560, SUACID6000, SUACID6001, SUACID6100, SUACID6150, SUACID6200, SUACID6500, SUACID6501, SUACID6502, SUACID6503, SUACID6504, SUACID6505, SUACID6506, SUACID6507, SUACID6508, SUACID6509, SUACID6510, SUACID6511, SUACID6512, SUACID6513, SUACID6514, SUACID6515, SUACID6516, SUACID6517, SUACID6518, SUACID6519, SUACID6520, SUACID6521, SUACID6522, SUACID6523, SUACID7000, SUACID7001, SUACID7100, SUACID7200, SUACID7300, SUACID7400, SUACID7500, SUACID7600, SUACID8000, SUACID8025, SUACID8050, SUACID8055, SUACID8100, SUACID8500, SUACID9000, SUACID9050, SUACID9300, SUACID9500, SUACID9550
Revision	5
Revision Date	25 Apr 2023
Key/Legend	<p>< Less Than > Greater Than</p> <p>AICS Australian Inventory of Chemical Substances atm Atmosphere CAS Chemical Abstracts Service (Registry Number) cm² Square Centimetres CO₂ Carbon Dioxide COD Chemical Oxygen Demand deg C (°C) Degrees Celcius EPA (New Zealand) Environmental Protection Authority of New Zealand deg F (°F) Degrees Fahrenheit g Grams</p>

g/cm³ Grams per Cubic Centimetre

g/l Grams per Litre

HSNO Hazardous Substance and New Organism

IDLH Immediately Dangerous to Life and Health

immiscible Liquids are insoluble in each other.

inHg Inch of Mercury

inH₂O Inch of Water

K Kelvin

kg Kilogram

kg/m³ Kilograms per Cubic Metre

lb Pound

LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.

LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

ltr or **L** Litre

m³ Cubic Metre

mbar Millibar

mg Milligram

mg/24H Milligrams per 24 Hours

mg/kg Milligrams per Kilogram

mg/m³ Milligrams per Cubic Metre

Misc or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre

mmH₂O Millimetres of Water

mPa.s Millipascals per Second

N/A Not Applicable

NIOSH National Institute for Occupational Safety and Health

NOHSC National Occupational Health and Safety Commission

OECD Organisation for Economic Co-operation and Development

Oz Ounce

PEL Permissible Exposure Limit

Pa Pascal

ppb Parts per Billion

ppm Parts per Million

ppm/2h Parts per Million per 2 Hours

ppm/6h Parts per Million per 6 Hours

psi Pounds per Square Inch

R Rankine

RCP Reciprocal Calculation Procedure

STEL Short Term Exposure Limit

TLV Threshold Limit Value

tne Tonne

TWA Time Weighted Average

ug/24H Micrograms per 24 Hours

UN United Nations

wt Weight