SAFETY DATA SHEET

Sulphamic Acid

SECTION 01 - IDENTIFICATION

Product identifier	Sulphamic Acid
Other means of identification	Amidosulfonic Acid; Amidosulfuric Acid; Aminosulfonic Acid; Aminosulfuric Acid; Imidosulfonic Acid; Sulfamidic Acid
Recommended use of chemical	Specialty chemicals, water treatment, descaling, metal pickling, galvanising, use in sulphating and sulphating reactions, manufacture of artificial sweeteners
Supplier name	Ixom Operations Pty Limited trading as LogiChem
Supplier address	Lot 33 Bulong Road Parkeston-Kalgoorlie, Australia PO Box 878 Kalgoorlie WA 6433 Australia
Supplier phone	1800 033 111 / Int. +61 (0) 3 9663 2130
24 Hour emergency phone	1800 033 111

SECTION 02 – HAZARD(S) IDENTIFICATION

Classification	Skin Corrosion/Irritation - Category 2 Serious Eye Damage/Irritation - Category 2A Long-term Hazard To The Aquatic Environment - Category 3
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* **P264** - Wash 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 **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/ attention. **P337 / P313 -** If eye irritation persists: Get medical advice/attention. **P362** - Take off contaminated clothing and wash before reuse.

SECTION 03 – COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Components	Cas No:	Proportion % w/w
Sulphamic Acid	5329-14-6	99.5-100.0%

SECTION 04 – FIRST AID MEASURES

Description of necessary first aid measures	***Eye*** – Flush immediately with water for at least 20 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention. ***Ingestion*** - Give 3 glasses of milk or water if victim is conscious. Milk of magnesia may be used as a neutraliser. Call physician immediately. Do not induce vomiting. ***Inhalation*** – Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention. ***Skin*** - Remove contaminated clothing. Wash affected area with soap and water. Seek medical attention if irritation occurs or persists.
Medical attention / special treatment	Symptoms of poisoning may develop several hours following exposure; medical

	observation therefore necessary for at least 48 hours. Indication of any immediate medical attention and special treatment needed Symptoms of irritation to skin, eyes or lungs. Symptoms of exposure may include abdominal pain, vomiting, diarrhea, drop in blood pressure, burning sensation, shock.
Symptoms caused by exposure	Most important symptoms and effects, both acute and delayed: irritant effects, cough, shortness of breath. Inflammation of eye (redness, watering, itching, pain). Corneal damage. Skin inflammation (itching, scaling, reddening, pain, or occasionally, blistering). The following symptoms may occur: Pulmonary oedema; Lung irritation; Oesophagogastric injuries.

SECTION 05 – FIRE FIGHTING MEASURES

Suitable extinguishing media	Water, chemical foam, dry chemical, or carbon dioxide
Specific hazards arising from the chemical	May release sulphur dioxide, sulphur trioxide, nitrogen oxides, and ammonia gas when heated in a fire.
Special protective equipment & precautions for fire fighters	Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment. Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves) or chemical splash suit. Please note: Structural fire fighters uniform will provide limited protection.

SECTION 06 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE as listed in section 8. Stop or reduce leak if safe to do so.
Environmental precautions	Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local waste authority.
Methods and materials for containment and cleaning up.	Cover drains. Collect, bind, and pump off spills. Take up dry. Avoid generation of dusts. Ensure all waste is collected and treated via a waste water treatment plant. Dilute with plenty of water. Neutralize. Suitable material for diluting or neutralizing: Lime; Soda ash.

SECTION 07 – HANDLING AND STORAGE

Precautions for safe handling	Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure.
Conditions for Safe Storage (Including Any Incompatibles)	Store in a cool, dry, well-ventilated place. Keep container tightly closed, and away from incompatible materials as listed in section 10. Keep away from: Alkali, Cyanides, Oxidising Agents. Reacts violently with chlorine and fuming nitric acid causing explosion hazard. Reacts slowly with water to form ammonium bisulfate. Container type/packaging must comply with all applicable local legislation. Store in original packaging as approved by manufacturer. Suitable container/equipment material: Acid-resistant.

SECTION 08 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters – exposure standards, biological monitoring	The following exposure standard has been established by Safe Work Australia; DNEL/DMEL and PNEC values: DNELs (workplace): DNEL inhalation (8 h): 7.5 mg/m3 DNELs (consumer): DNEL oral: 1.06 mg/kg bw/day DNEL inhalation: 1.85 mg/m3 PNECs: PNEC aqua (freshwater): 0.3 mg/L PNEC sediment (freshwater): 0.3 mg/kg sediment dw

	PNEC aqua (marine water): 0.03 mg/L PNEC sediment (marine water): 0.03 mg/kg sediment dw NOTE: The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. Peak limitation is a ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes. These exposure standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.
Appropriate engineering controls	Use general or local mechanical exhaust ventilation to control dust and to meet TLV requirements. Mechanical ventilation (dilution or local exhaust), process or personnel enclosure, and control of process conditions. Supply sufficient replacement air to make up for air removed by exhaust systems.
Personal protective equipment (PPE)	***Clothing*** – Long-sleeved protective coveralls (AS3765/2210). ***Eyes*** – Wear goggles; Wear eye glasses with side protection according to EN 166 (AS1336/1337). ***Footwear*** – Wear safety footwear (AS3765/2210). ***Gloves*** – Wear gloves: NR (natural rubber, natural latex); CR (chloroprene, chloroprene rubber); NBR (nitrile rubber); Butyl rubber (AS2161). ***Other*** – Respirator: Filtering device with filter or ventilator filtering device of type: Half-face mask (EN 140): Filter-/apparatus type: P2 (AS1715/1716).

SECTION 09 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Solid white crystalline solid
Odour	Odourless
Odour threshold	Not available
pH	1.18 for a 1% solution
Melting point/freezing point	205°C / Not available
Specific gravity (water = 1)	2.13
Boiling point and boiling range	209°C decomposes
Flash point	Not available
Evaporation rate	Not available (close to 0)
Flammability	Not available
Upper/lower flammability or explosive limits	Not available
Vapour pressure (hPa @ 20°C)	Close to 0
Vapour density	Not available
Relative density	3.35
Solubility(ies) (water)	17.57% at 20°C
Partition coefficient: n-octanol/water	log Pow: 0.10
Auto-ignition temperature	Not available
Decomposition temperature	>=205°C
Viscosity	Not available
Specific heat value	Not available
Particle size	Not available
Volatile organic compounds content	Not available
% volatile	Not available
Saturated vapour concentration	Not available
Release of invisible flammable vapours	Not available

and gases	

SECTION 10 – STABILITY AND REACTIVITY

Reactivity	Reacts violently with bases and is corrosive. Reacts violently with chlorine and fuming nitric acid causing explosion hazard. Reaction with: Alkali; Amines; Ammonia; Chlorine; Hydrochloric acid; Sulfuric acid; Oxidising agents, strong; Nitrogen oxides (NOx).
Chemical stability	Stable under normal conditions.
Conditions to avoid	Strong heating.
Incompatible materials	Strong oxidizing agents. May discolour on exposure to light. In aqueous solution is a medium acid which reacts with bases, is corrosive, and hydrolises to ammonium bisulphate when temperature rises. Reacts violently with chlorine and nitric acid.
Hazardous decomposition products	Decomposition products include sulphur dioxide, sulphur trioxide, nitrogen oxides, and ammonia gas.

SECTION 11– TOXICOLOGICAL INFORMATION

Information on routes of exposure	***Eyes*** – Causes eye irritation. Inflammation of eye (redness, watering, itching, pain). Corneal damage. Irritating to eyes. The aerosol is corrosive to the eyes. Serious potential effects. ***Ingestion*** - Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract. Swallowing or vomiting of the product may result in aspiration hazard. ***Inhalation*** – Symptoms : cough, shortness of breath, irritation symptoms in the respiratory tract. The following symptoms may occur: Pulmonary oedema; Lung irritation; Oesophagogastric injuries. Irritating to lungs. The aerosol is corrosive to the respiratory tract. Serious potential effects. ***Skin*** - Irritating to skin. Skin inflammation (itching, scaling, reddening, pain, or occasionally, blistering). Irritating to skin. The aerosol is corrosive to the skin. Serious potential effects.
Symptoms related to exposure	Not available
Numerical measures of toxicity	LD50 (oral, rat) =3160 mg/kg Dermal (rabbit, 24 hours) = 500 mg produced severe irritation Eye (rabbit, 24 hours) = 250 µg produced severe irritation
Immediate, delayed and chronic health effects from exposure	Not available
Exposure levels	Not available
Interactive effects	Not available
Data limitations	Not available

SECTION 12– ECOLOGICAL INFORMATION

Ecotoxicity	Toxicity to fish LC50 pimephales promelas (fathead minnow): 70,3 mg/l/96h Toxicity to bacteria EC10 Pseudomonas putida: >= 1.000 mg/l/16h (IUCLID) Acute fish toxicity LC50 : 70 mg/L 96h Fathead minnow pH effects LC50 > 2000 mg/L 24h Guppy neutralised exposure LC50 : 670 mg/L Japanese barbell read-across : ammonium sulfamate LC50 : 203 mg/L 96h Catfish (fingerlings) read-across :ammonium sulfamate LC50 : 650 mg/L 96h Cherry salmon yamame trout (fingerlings) read-across :ammonium sulfamate Long-term fish toxicity LC50 : 630 mg/L 10d Japanes barbell read-across :ammonium sulfamate NOEC : 30 mg/L 7wk Rainbow trout read-across :ammonium sulfamate Acute algae toxicity IC50 >> 29 mg/L 72h Green algae neutralised exposure

	Sewage sludge studies EC10 > 1000 mg/L 16h Bacteria neutralised exposure EC10 > 1000 mg/L 24h Sludge neutralised exposure Other ecotoxicity studies LC50 : 680 mg/L 96h Caddisfly read-across :ammonium sulfamate LC50 : 560 mg/L 10d Caddisfly read-across :ammonium sulfamate LC50 : 2650 mg/L 96h Aquatic sowbug read-across :ammonium sulfamate
Persistence and degradability	Persistent
Bioaccumulative potential	(Lit.) Bioaccumulation is not expected (log Pow <1). Negligible.
Mobility in soil	High
Other adverse effects	Not available

SECTION 13 – DISPOSAL CONSIDERATIONS

Safe handling and disposal methods	Dispose of in accordance with all local, state and federal regulations. Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options.
Disposal of any contaminated packaging	All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.
Environmental regulations	Contact a specialist disposal company or the local waste regulator for advice. Incinerate at an approved site following all local regulations. This material may be suitable for approved landfill.

SECTION 14 – TRANSPORT INFORMATION

UN number	2967
Proper shipping name	Sulphamic Acid
Transport hazard class(es)	8 – Corrosive Substances
Subsidiary risk	Not applicable
Packaging group	III
Environmental hazards	Not available
Special precautions during transport	Not available
Hazchem code	2X

SECTION 15 – REGULATORY INFORMATION

AICS name	Sulfamic acid
Poisons Schedule number	6

SECTION 16 – OTHER INFORMATION

SDS creations date	03 March 2006
Most recent revision date	01 February 2018
Revision number	011 THIS ISSUE NUMBER REPLACES ALL ISSUES
Reason for revision	Annual Update
Contact person	Ixom 1800 033 111

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a

safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

END OF SDS