SAFETY DATA SHEET

Sulfamic Acid 99%

SECTION 1: IDENTIFICATION

Product identifier used on a label:	Sulfamic Acid 99%
CAS-No.:	5329-14-6
Synonyms:	Sulphamic Acid, Amidosulfonic acid
Recommended use of the chemical and restrictions on use:	Acidifying agent, cleaner, descaler, rust remover.
Chemical family:	Acid
Chemical formula:	NH_2SO_3H
Name, address and phone # of supplier:	Aqua Bond Inc. 440 Passmore Ave. Toronto, ON, M1V 5J8 (416) 754-7211
24 Hr. Emergency phone #:	**CANUTEC (613) 996-6666**

SECTION 2: HAZARDS IDENTIFICATION

Classification of the chemical: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification: GHS Classification

Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Short-term (acute) aquatic hazard (Category 3), H402
Long-term (chronic) aquatic hazard (Category 3), H412

Label elements:



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/ eye protection/ face protection.

Response
P302 + P352 IF ON SKIN: Wash with plenty of 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 + P364 Take off contaminated clothing and wash it before reuse.

Disposal
P501 Dispose of contents/ container to an approved waste disposal plant.

Other Hazards: Not available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient name	Synonyms	CAS Number	Concentration (wt. %)
Sulfamic acid	Sulphamic Acid, Amidosulfonic acid	5329-14-6	≥ 99 %

SECTION 4: FIRST-AID MEASURES
Description of first aid measures:

Inhalation: Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Treat symptomatically. Consult a physician.

Skin contact: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

Eye contact: After eye contact: rinse out with plenty of water. Consult a physician.

Ingestion: Do Not Induce Vomiting. Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed: No data available.
Indication of any immediate medical attention and special treatment needed: No data available.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media:	Use media appropriate for the surrounding fire.
Suitable:	Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable:	Not data available.
Flash point:	Not data available.
Autoignition Temperature:	Not data available.
Specific hazards arising from the substance:	Nitrogen oxides (NOx), Sulfur oxides
Hazardous thermal decomposition products:	Nitrogen oxides (NOx), Sulfur oxides
Special protective equipment and precautions for fire-fighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only.
Environmental precautions:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Methods and materials for containment and cleaning up:	Sweep or scoop up and dispose as hazardous waste. Wear protective eyeware, gloves, and clothing. Always obey local regulations. If necessary use trained response staff or contractor.
Special spill response procedures:	In case of transportation accident, contact CHEMTREC at 1-800-424-9300.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling:	Use personal protective equipment as required. Container must be kept tightly closed. Avoid generation and spreading of dust. Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Do not ingest.
Conditions for safe storage:	Keep container tightly closed in a dry and well-ventilated place.
Incompatible materials:	Strong oxidizing agents, strong bases

Hazardous decomposition products:	Decomposition may cause formation of Nitrogen oxides (NOx), Sulfur oxides.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Ingredient	**Exposure limits**
Sulfamic acid	No data available.

Engineering controls: Ensure adequate ventilation, especially in confined areas. Handle in accordance with good industrial hygiene and safety practice.

Individual protection measures:

Eye Protection: Use chemical safety goggles and / or a full face shield where splashing is possible. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Maintain eye wash fountain and quick-drench facilities in work area.

Skin Protection: Wear appropriate protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Handle with gloves. Gloves must be inspected prior to use.

Respiratory protection: For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hygiene Measures: When using, do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. For environmental protection remove and wash all contaminated protective equipment before re-use. Wear suitable gloves and eye/face protection.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White powder
Odour:	No data available
Odour threshold:	No data available
pH:	1.5 at 10 g/L at 20 °C
Melting point/Freezing point:	215-225 °C

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Initial boiling point/boiling range:	No data available
Flash point:	No data available
Evaporation rate:	No data available
Flammability (solid; gas) :	No data available
Lower flammable/explosive limit:	No data available
Upper flammable/explosive limit:	No data available
Vapour pressure:	0.008hPa (0.006 mm Hg) at 20°C 0.025hPa (0.019 mm Hg) at 100°C
Vapour density:	No data available.
Relative Density:	2.151 g/cm^3 at 25 °C
Solubility:	Soluble in water, 213 g/L at 20 °C
Partition coefficient (n-octanol/water) :	No data available
Auto-ignition temperature:	No data available.
Decomposition temperature:	209 °C
Viscosity:	No data available.

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	No data available.
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	
Incompatible materials:	Strong oxidizing agents, Strong bases.
Hazardous decomposition products:	Fire may cause formation of Nitrogen oxides, Sulfur oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicity data

Acute toxicity:

LD50 Oral - Rat - 3,160 mg/kg
(OECD Test Guideline 401)

LD50 Oral - Mouse - 1,312 mg/kg
Remarks: Behavioral: Excitement. Behavioral: Altered sleep time (including change in righting reflex).

LD50 Oral - Guinea pig - 1,050 mg/kg
Remarks: Behavioral: Excitement. Behavioral: Altered sleep time (including change in righting reflex).

Skin corrosion/irritation
Skin – Rabbit, Result: Moderate skin irritation,(OECD Test Guideline 404)

	Skin – Human, Result: Mild skin irritation, Serious eye damage/eye irritation
	Eyes – Rabbit, Result: Moderate eye irritation, (OECD Test Guideline 405)
Information on the likely routes of exposure:	Skin, eye, inhalation, ingestion
Potential health effects (acute):	No data available.
Target organ effects:	No data available.
Carcinogenicity:	IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. ACGIH: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
Potential chronic health effects:	No data available.
Teratogenicity:	No data available.
Developmental effects:	No data available.
Fertility effects:	No data available.
Irritation/corrosion:	No data available.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity: Sulfamic Acid

Toxicity to fish	Static test LC50 - Pimephales promelas (fathead minnow) - 70.3 mg/l - 96 h. (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	ethanedioic acid, dehydrate: 48 h EC50 Daphnia: 137 mg/l
Toxicity to microorganisms:	No data available.
Bioaccumulation:	No data available.
Biodegradation:	No data available.
Abiotic Degradation:	No data available.
Mobility in soil, water:	No data available.
Other adverse effects:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life with long lasting effects.
Persistence and degradability:	Not readily biodegradable.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal methods:	The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Do not flush to sewers.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.
If not otherwise specified: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

DOT (US)
UN number: 2967
Class: 8
Packing group: III
Proper shipping name: Sulfamic acid

IMDG
UN number: 2967
Class: 8
Packing group: III
EMS-No: F-A, S-B
Proper shipping name: SULPHAMIC ACID

IATA
UN number: 2967
Class: 8
Packing group: III
Proper shipping name: Sulphamic acid
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.

SECTION 15: REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

SECTION 16: OTHER INFORMATION

Revision date: January 24, 2020
UN = United Nations

Disclaimer

While the information and recommendations set forth are believed to be accurate as of data hereof, Aqua Bond Inc., makes no warranty with respect thereto and disclaims all liability from reliance thereon.