To Our Customers:

The attached Safety Data Sheet (SDS) was prepared by the vendor of the product you purchased through one of our divisions. We used the manufacturer's electronic document directly or scanned a paper copy and generated a file for our automated SDS delivery system.

All statements, technical information, and recommendations contained therein are solely that of the manufacturer of the product. We at Zep Inc. did not verify the accuracy and completeness of the statements and do not warrantee or guarantee the information. We provide vendor SDSs to assist our customers in their compliance efforts. The attached document is in compliance with one of the respective country regulatory requirements noted below:

The OSHA Hazard Communication Standard (in the United States)
The Hazardous Products Regulations (in Canada)

We made every effort to deliver all of the information prepared by the manufacturer. We cannot anticipate all conditions under which this information will be used. If you have any questions about the statements on the SDS, please contact the company shown on the document.

Zep Inc. assumes no liability or responsibility for loss or damage resulting from the improper use or handling of this product, from incompatible product combinations, or from the failure to follow instructions, warnings, and advisories in the manufacturer's product label and Safety Data Sheet.

Sincerely,

Product Stewardship Team
Zep Inc.

SAMIRIAN CHEMICALS INC.

Safety Data Sheet

Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	**Sulfamic Acid**	Catalog Code(s)	SLS2068. SLS3490
Contact Information:	SAMIRIAN CHEMICALS, INC 1999 S. BASCOM AVE., SUITE #515 CAMPBELL, CA95008	CAS#	5329-14-6
		RTECS	WO5950000
		TSCA	8(b) inventory: Sulfamic acid
Commercial Name(s)	-	CI#	Not Available
Synonym	Amidosulfonic acid/ sulfamidic acid		
Chemical Name	Not Available	IN CASE OF EMERGENCY CHEMTREC (24 hr) 800-424-9300	
Chemical Family	Not Available		
Chemical Formula	NH_2SO_3H		

Section 2: Hazard Identification

Classification (GHS-US)	Skin Corr. 1C	H314
	Eye Dam. 1	H318
	Aquatic Acute 2	H401
	Full text of H-phrases: see section 16	
Hazard pictograms (GHS-US)	 *Corrosive*  *Irritant*	
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 person to fresh air and keep 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/doctor | P363 - Wash contaminated clothing before reuse |P405 - Store locked up| P501 - Dispose of contents/container to comply with local, state and federal regulations	

Section 3: Composition or information on ingredients

substance type	Mono-constituent	
Name	CAS#	% by weight
Sulfamic acid	5329-14-6	100

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Section 4. 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 labored 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.

Section 5. Fire and Explosion Data

Flammability of the Product	Non-flammable.
Auto-Ignition Temperature	Not applicable
Flash Points	Not applicable
Flammable Limits	Not applicable
Products of Combustion	Not available
Fire Hazards in Presence of Various Substances	Not applicable
Explosion Hazards in Presence of Substances	Risks of explosion of the product in presence of mechanical impact: Not available Risks of explosion of the product in presence of static discharge: Not available
Fire Fighting Media and Instructions	Adapt extinguishing media to the environment Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighborhood 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.
Special Remarks on Fire Hazards	Not available.
Special Remarks on Explosion Hazards	Material in powder form is capable of creating a dust explosion.

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Section 6. Accidental Release Measures

For non-emergency personnel :	
Protective equipment	Gloves. Face-shield. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Dust cloud production: dust-tight suit. See "Material-Handling" to select protective clothing.
Emergency procedures	Mark the danger area. Prevent dust cloud formation, e.g. by wetting. 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 neighborhood close doors and windows.
For emergency personnel :	
Protective equipment	Equip cleanup crew with proper protection. Do not breathe dust.
Emergency procedures	Ventilate area. Stop release.
Environmental precautions	Stop release. Ventilate area.
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/vapor 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.

Section 7. Handling and Storage

Precautions	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.
Storage	Store in a dry area. Meet the legal requirements. KEEP SUBSTANCE AWAY FROM: heat sources, oxidizing agents. strong acids. (strong) bases. halogens. water/moisture.

Section 8. Exposure Controls/ Personal Protection

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.
Personal Protection	Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent.
Personal Protection in Case of spill	Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult specialist BEFORE handling this product.
Exposure Limits	Not available

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Section 9. Physical and Chemical Properties

Physical state and appearance	Solid.
Molecular Weight	97.09 g/mole
pH (1% soln/water)	1 [Acidic.]
Boiling Point	Not Available
Melting Point	Decomposes. (205°C or 401°F)
Critical Temperature	Not available.
Specific Gravity	2.15 (Water = 1)
Vapor Pressure	Not applicable.
Vapor Density	Not available.
Volatility	Not available
Odor Threshold	Not available
Water/Oil Dist. Coeff.	Not available.
Ionicity (in Water)	Not available.
Dispersion Properties	See solubility in water.
Odor	Not available
Taste	Not available.
Color	Not available
Solubility	Soluble in cold water.

Section 10. Stability and Reactivity Data

Stability	The product is stable
Instability Temperature	Not available
Conditions of Instability	Not available
Incompatibility with various substances	Not available
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	Not available
Special Remarks on Corrosivity	Not available
Polymerization	Not occur

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Section 11. Toxicological Information

Routes of Entry	Eye contact. Inhalation. Ingestion. Dermal contact.
Toxicity to Animals	Acute oral toxicity (LD50): 3160 mg/kg [Rat].
Chronic Effects on Humans	The substance is toxic to lungs, mucous membranes.
Other Toxic Effects on Humans	Extremely hazardous in case of skin contact (corrosive irritant), of ingestion, of inhalation. Very hazardous in case of skin contact (sensitizer). Hazardous in case of skin contact (permeate)
Special Remarks on Toxicity to Animals	Not available
Special Remarks on Chronic Effects on Humans	Not available
Special Remarks on other Toxic Effects on Humans	No available

Section 12. Ecological Information

Ecotoxicity	Hazardous to the aquatic environment - Acute Hazard Category 2
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The products of degradation are as toxic as the original product.
Special Remarks on the Products of Biodegradation	Not available.

Section 13. Disposal Considerations

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.

Section 14. Transport Information

In accordance with DOT Transport document description	UN2967 Sulfamic acid, 8, III
UN-No.(DOT)	UN2967
Proper Shipping Name (DOT)	Sulfamic acid
Transport hazard class(es) (DOT)	8 - Class 8 - Corrosive material 49 CFR 173.136
Hazard labels (DOT)	8 - Corrosive

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Packing group (DOT)	III - Minor Danger
DOT Packaging Non Bulk (49 CFR 173.xxx)	213
DOT Packaging Bulk (49 CFR 173.xxx)	240
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.
DOT Packaging Exceptions (49 CFR 173.xxx)	154
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 Storage Location	A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Section 15. Other Regulatory Information

Federal and State Regulations :	TSCA 8(b) inventory: sulfamic acid
Other Regulations	OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
Other Classification	
WHMIS (Canada):	Class E: Corrosive solid.
DSCL(EEC)	R35 - Causes severe burns. R43- May cause sensitization by skin contact
HMIS (USA.):	Health Hazard : 3 - Major injury likely unless prompt action is taken and medical treatment is given
	Fire Hazard : 0 - Materials that will not burn
	Reactivity : 1 - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.
	Personal Protection : j
National Fire Protection Association (U.S.A.):	Health : 3
	Flammability : 0
	Reactivity : 1
	Specific hazard :

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Section 16. Other Information

Aquatic Acute 2	Hazardous to the aquatic environment - Acute Hazard 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
Last Revision Date	06 / 12 / 2015