

Material Safety Data Sheet

Product Trade Name: **CHEM ALUM DEOX 560**

ID: H241

*** Section 1 - Chemical Product and Company Identification ***

Product Trade Name: CHEM ALUM DEOX 560

Manufacturer Information

Heatbath Corporation

P.O. Box 51048

Indian Orchard, MA 01151-5048

Contact Phone: (413) 452-2000

8:00 AM – 5:00 PM

CHEMTREC Emergency Phone: (800) 424-9300
24 Hours

*** Section 2 - Composition / Information on Ingredients ***

CAS #	Component	Percent
007664-93-9	Sulfuric acid	10-30
010028-22-5	Ferric sulfate	10-30
007697-37-2	Nitric acid	1-10
001341-49-7	Ammonium bifluoride	1-10

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Iron salts (soluble), Fluorides (16984-48-8).

Additional Information:

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

*** Section 3 - Hazards Identification ***

Emergency Overview:

DANGER -- CORROSIVE! Contact with this material will cause burns to the skin, eyes and mucous membranes. Prolonged or repeated breathing may cause ulceration of nasal membranes. Following skin exposure to this product, the sensation of irritation or pain may be delayed. This product may cause methemoglobinemia characterized by a reduction in oxygen carrying capacity of the blood with symptoms including headache, dizziness, flushed face, fatigue, nausea, vomiting, drowsiness, stupor, tremors, uneven heart action, coma and rarely death.

Eye Contact:

This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.

Skin Contact:

Corrosive to the skin. Contact with the skin or mucous membranes may cause severe irritation and burns. Following skin exposure to this product, the sensation of irritation or pain may be delayed. Following skin exposure to this product, the sensation of irritation or pain may be delayed.

Skin Absorption:

A component in this product may be harmful or fatal if absorbed through the skin, especially if skin is damaged.

Ingestion:

This product may produce corrosive damage to the gastrointestinal tract if it is swallowed. Ingestion of small amounts of this product may result in potentially fatal hypocalcemia and systemic toxicity. Ingestion of large amounts of this product may result in fluoride poisoning including symptoms of calcification of the ligaments and severe bone changes making normal movements painful, mottling of the teeth, pulmonary fibrosis, anemia, anorexia, dental effects, and possibly death. This product may cause methemoglobinemia upon ingestion characterized by cyanosis, headache, dizziness, fatigue, nausea, vomiting, drowsiness, stupor, coma and rarely death.

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Inhalation:

Inhalation of mists of this product may cause severe irritation and burns to the respiratory tract. The repeated breathing of this material for years may cause fluorosis.

Medical Conditions Aggravated by Exposure:

Pre-existing eye, skin and respiratory disorders. Preexisting cardiovascular or bone marrow diseases.

* * * Section 4 - First Aid Measures * * *

Eye Contact:

In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.

Skin Contact:

Immediately take off all contaminated clothing. Flush with large amounts of water. Soak the affected area for one hour in an iced solution (0.13%) of Zephiran chloride (30 cc of 17% concentrate per gallon of iced distilled water.) GET MEDICAL ATTENTION IMMEDIATELY.

Ingestion:

If the material is swallowed, get immediate medical attention or advice -- Do not induce vomiting. Give one to two glasses of water or milk. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Inhalation:

If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.

First Aid: Notes to Physician

Ocular exposure to corrosive fluoride compounds has been treated with isotonic sodium chloride or magnesium chloride. Dermal exposure to corrosive fluoride compounds has been treated with calcium gluconate or calcium carbonate gel applied topically to the affected areas to relieve pain at the site of exposure. Treatment of hypocalcemia associated with corrosive fluoride compounds exposure may be corrected by intravenous calcium gluconate or calcium chloride. Treatment of hypomagnesemia may be corrected by intravenous magnesium sulfate. If cyanosis is severe, intravenous injection of methylene blue, 1 mg/kg body weight, may be of value.

* * * Section 5 - Fire Fighting Measures * * *

Flash Point: >225 °F (>107.2 °C)

Method Used: Estimated

Flammability Classification: Non-flammable

Upper Flammable Limit (UFL): Not applicable

Lower Flammable Limit (LFL): Not applicable

Fire & Explosion Hazards:

May react with metals to form flammable hydrogen gas. If evaporated to dryness, solid residue is an oxidizing agent and may cause spontaneous ignition of combustible materials.

Decomposition Products:

Decomposition of this product may yield oxides of sulfur and nitrogen. May liberate hydrogen fluoride
Decomposition of this product may yield ammonia gas.

Extinguishing Media:

Use any media suitable for the surrounding fires.

Fire-Fighting Instructions:

Firefighters should wear full protective clothing including self contained breathing apparatus.

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*** Section 6 - Accidental Release Measures ***

Containment and Clean up procedures must be conducted in accordance with all local, state, and federal regulations.

Containment Procedures:

Stop the flow of material, if this is without risk. Wear appropriate protective equipment and clothing during clean-up.

Clean-Up Procedures:

Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of collected material according to regulation.

*** Section 7 - Handling and Storage ***

Handling Procedures:

Do not get this material in your eyes, on your skin, or on your clothing. Do not inhale vapors or mists of this product. Wash thoroughly after handling. Do not take internally. For industrial use only. Use this product with adequate ventilation. Use caution when combining with water; DO NOT add water to acid, ALWAYS add acid to water while stirring to prevent release of heat, steam and fumes. Do not mix this product with material which contain AMINES. NITROSAMINE may be formed.

Storage Procedures:

Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Supplier recommends that this product be stored with a vented bung.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines:

A: General Product Information

Follow all applicable exposure limits.

B: Component Exposure Limits

Sulfuric acid (007664-93-9)

ACGIH: 1 mg/m³ TWA
3 mg/m³ STEL

OSHA: 1 mg/m³ TWA
NIOSH: 1 mg/m³ TWA

Ferric sulfate (010028-22-5)

ACGIH: as Fe: 1 mg/m³ TWA (related to Iron salts (soluble))
OSHA: as Fe: 1 mg/m³ TWA (related to Iron salts (soluble))
NIOSH: 1 mg/m³ TWA (related to Iron salts (soluble))

Nitric acid (007697-37-2)

ACGIH: 2 ppm TWA; 5.2 mg/m³ TWA
4 ppm STEL; 10 mg/m³ STEL
OSHA: 2 ppm TWA; 5 mg/m³ TWA
4 ppm STEL; 10 mg/m³ STEL

NIOSH: 2 ppm TWA; 5 mg/m³ TWA
4 ppm STEL; 10 mg/m³ STEL

Ammonium bifluoride (001341-49-7)

ACGIH: as F: 2.5 mg/m³ TWA (related to Fluorides)
OSHA: as F: 2.5 mg/m³ TWA (related to Fluorides)
NIOSH: as F: 2.5 mg/m³ TWA (related to Fluorides)

Engineering Controls:

Ventilation should effectively remove and prevent buildup of any vapor or mist generated from the handling of this product.

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PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face Protective Equipment:

Wear chemical goggles; face shield (if splashing is possible).

Skin Protection:

Use impervious gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended.

Respiratory Protection:

If ventilation is not sufficient to effectively prevent buildup of aerosols or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Personal Protective Equipment:

Eyewash fountains and emergency showers are required.

*** Section 9 - Physical & Chemical Properties ***

Physical State:	Liquid	Appearance:	Colorless
Odor:	Sharp acid	Vapor Pressure:	Not determined
Vapor Density:	Not determined	Boiling Point:	>225 °F (>107.2 °C)
Specific Gravity:	1.385	pH:	0.5
Viscosity:	Not determined	VOC:	Not applicable
Solubility Water:	Complete	Evaporation Rate:	Not determined
Percent Volatile:	Not applicable	Percent Solids:	43

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability:

Stable under normal conditions.

Conditions to Avoid:

None expected.

Incompatibility:

Avoid contact with organic materials, oils, greases, and any oxidizable materials. This material will react with glass, concrete, certain metals, silica containing materials, rubber, leather, and many organics. This product may react with strong alkalies. Adding water to this product may cause localized overheating and splattering.

Decomposition Products:

May liberate hydrogen fluoride. Ammonia, oxides of sulfur, and oxides of nitrogen.

Hazardous Polymerization:

Will not occur.

*** Section 11 - Toxicological Information ***

Acute Toxicity:

A: General Product Information

No information available for the product.

B: Component Analysis - LD50/LC50

Sulfuric acid (007664-93-9)

Inhalation LC50 Rat : 510 mg/m³/2H

Inhalation LC50 Mouse : 320 mg/m³/2H

Oral LD50 Rat : 2140 mg/kg

Nitric acid (007697-37-2)

Inhalation LC50 Rat : 67 ppm(NO₂)/4H

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Carcinogenicity:

A: General Product Information

No information available for the product.

B: Component Carcinogenicity

Sulfuric acid (007664-93-9)

ACGIH: (contained in strong inorganic acid mists): A2 - Suspected Human Carcinogen

IARC: Monograph 54; 1992 (occupation exposures to strong inorganic acid mists containing sulfuric acid) (Group 1 (carcinogenic to humans))

Ammonium bifluoride (001341-49-7)

ACGIH: As F: A4 - Not Classifiable as a Human Carcinogen (related to Fluorides)

Chronic Toxicity

Chronic exposure to fluoride compounds may result in fluorosis characterized by calcification of ligaments and severe bone changes which result in painful movements, mottling of the teeth, pulmonary fibrosis, anemia, anorexia, and weight loss.

Other Toxicological Information:

None available.

* * * Section 12 - Ecological Information * * *

Ecotoxicity:

A: General Product Information

No data available for this product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Environmental Fate:

No data available for this product.

* * * Section 13 - Disposal Considerations * * *

Wastes must be tested using methods described in 40 CFR Part 261. It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous wastes. State and local regulations may differ from Federal disposal regulations. Dispose of waste material according to Local, State, Federal and Provincial Environmental Regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information

Proper Shipping Name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Contains Nitric Acid, Sulfuric Acid)
Hazard Class	8
UN / NA Number	UN3264
Packing Group	II
Product RQ (lb)	--

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* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information

No additional information available.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Sulfuric acid (007664-93-9)

SARA 302: TPQ = 1000 pounds; RQ = 1000 pounds

SARA 313: acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size: form R reporting required for 1.0% de minimis concentration

CERCLA: final RQ = 1000 pounds (454 kg)

Ferric sulfate (010028-22-5)

CERCLA: final RQ = 1000 pounds (454 kg)

Nitric acid (007697-37-2)

SARA 302: TPQ = 1000 pounds; RQ = 1000 pounds

SARA 313: form R reporting required for 1.0% de minimis concentration

CERCLA: final RQ = 1000 pounds (454 kg)

Ammonium bifluoride (001341-49-7)

CERCLA: final RQ = 100 pounds (45.4 kg)

SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No Reactive: No

State Regulations

A: General Product Information

No additional information available.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Sulfuric acid	007664-93-9	Yes	Yes	Yes	Yes	Yes	Yes
Ferric sulfate (¹ related to Iron salts (soluble))	010028-22-5	Yes	No	Yes	Yes ¹	Yes	Yes
Nitric acid	007697-37-2	Yes	Yes	Yes	Yes	Yes	Yes
Ammonium bifluoride (¹ related to Fluorides)	001341-49-7	Yes	No	Yes	Yes ¹	Yes	Yes

Other Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Sulfuric acid	007664-93-9	Yes	Yes	Yes
Ferric sulfate	010028-22-5	Yes	Yes	Yes
Nitric acid	007697-37-2	Yes	Yes	Yes
Ammonium bifluoride	001341-49-7	Yes	Yes	Yes

C: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Sulfuric acid	007664-93-9	1% item 1485 (138)
Ferric sulfate	010028-22-5	1% item 882 (883) (related to Iron salts (soluble))
Nitric acid	007697-37-2	1% item 1146 (111)

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*** Section 16 - Other Information ***

NFPA Ratings: Health: 3 Fire: 0 Reactivity: 1 Other:

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

HMIS Ratings: Health: 3* Fire: 0 Reactivity: 1 Pers. Prot.:

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

MSDS Change History:

5/07/03: Rev.04; MSDS as issued by Chemtech Finishing Systems.

1/18/05: Chemtech Finishing Systems acquired by Heatbath Corporation.

3/30/05: Rev.05; Chemtech MSDS issued under new manufacturer: Heatbath Corporation.

Sec.1 - Manufacturer Information Updated

Sec.16 - MSDS Change History section added

Sec.16 - Contact Information Updated

Key/Legend:

ACGIH = American Conference of Governmental Industrial Hygienists	NFPA = National Fire Protection Association
CERCLA = Comprehensive Environmental Response, Compensation and Liability Act	NIOSH = National Institute for Occupational Safety and Health
EPA = Environmental Protection Agency	NTP = National Toxicology Program
HMIS = Hazardous Material Identification System	OSHA = Occupational Safety and Health Administration
IARC = International Agency for Research on Cancer	SARA = Superfund Amendments and Reauthorization Act
MSHA = Mine Safety and Health Administration	TSCA = Toxic Substance Control Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Heatbath Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

Contact: Jeff Szotek

Contact Phone: (413) 452-2000

This is the end of MSDS for CHEM ALUM DEOX 560.