



HazTech Systems, Inc.

SAFETY DATA SHEET

Revision number: 2
Revision date: 06/22/2015

1. IDENTIFICATION

Product name: Ammonium oxalate (mixture)
Product code: RE2316
Synonyms: Oil of Vitriol, Hydrogen Sulfate, Dihydrogen Sulfate
CAS: 1336-21-6/6153-56-6
RTECS # Not available
CI#: Not available
Recommended use: Laboratory chemicals, Manufacture of substances
Uses advised against: No information available

Company:

HazTech Systems, Inc.
3919 Bootjack Lane
Mariposa, CA 95338 U.S.A.
Telephone:
1-800-543-5487 / 1-209-966-8088
Fax:
1-209-966-8089
e-mail:
sales@hazcat.com
www.hazcat.com

Chemical Emergencies:

HazTech Systems, Inc. (8:00am - 5:00pm) PST
1-800-543-5487
Transportation Emergencies:
Chemtrec 24-Hour
1-800-424-9300 (U.S.A.)
1-703-527-3887 (International)

2. HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity , Oral (Category 4), H302
Acute toxicity , Dermal (Category 4), H312
Skin corrosion (Category 1), H314
Serious eye damage (Category 1), H318
Acute aquatic toxicity (Category 1), H400

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H302 + H312

Harmful if swallowed or in contact with skin.

H314

Causes severe skin burns and eye damage.

H318

Causes serious eye damage.

H400

Very toxic to aquatic life.

Precautionary statement(s)

P264

Wash skin thoroughly after handling.

P270

Do not eat, drink or smoke when using this product.

P273

Avoid release to the environment.

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P312 + P330

IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.

P305 + P351 + P338 + P310

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

P363

Wash contaminated clothing before reuse.

P501

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

2. HAZARDS IDENTIFICATION

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
 P363 Wash contaminated clothing before reuse.
 P501 Dispose of contents / container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS - Lachrymator.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Synonyms : Ammonia aqueous
Ammonia water

Formula : H₅NO

Molecular weight : 35.05 g/mol

Hazardous components

Component	Classification	Concentration
Ammonium hydroxide		
CAS -No. 1336 -21 -6	Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; Aquatic Acute 1; H302, H314, H318, H400	>= 50 - < 70 %
EC-No. 215 -647 -6		
Index -No. 007 -001 -01 -2		

Substances

Synonyms : Ethanedioic acid

Formula : C₂H₂O₄ · 2H₂O

Molecular weight : 126.07 g/mol

CAS -No. : 6153 -56 -6

EC-No. : 205 -634 -3

Index -No. : 607 -006 -00 -8

Hazardous components

Component	Classification	Concentration
Oxalic acid dihydrate		
	Acute Tox. 4; Eye Dam. 1; H302 + H312, H318	<= 100 %

No components need to be disclosed according to the applicable regulations.

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

Description of first aid measures

General advice

Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

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

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture

Nitrogen oxides (NOx), Carbon oxides

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

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

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

hygroscopic

Storage class (TRGS 510): Non Combustible Solids

Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components with workplace control parameters

Component	CAS -No.	Value	Control parameters	Basis
Ammonium hydroxide	1336 -21 -6	TWA	25.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Eye damage		
		TWA	25.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye damage		
		STEL	35.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye damage		
		STEL	35.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye damage		
		TWA	25.000000 ppm 18.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Often used in an aqueous solution.		
		TWA	25.000000 ppm 18.000000 mg/m3	USA. NIOSH Recommended Exposure Limits

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Component	CAS -No.	Value	Control parameters	Basis
		Often used in an aqueous solution.		
Ammonium hydroxide	1336 -21 -6	ST	35.000000 ppm 27.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Often used in an aqueous solution.		
		ST	35.000000 ppm 27.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Often used in an aqueous solution.		

Components with workplace control parameters

Component	CAS -No.	Value	Control parameters	Basis
Oxalic acid dihydrate	6153 -56 -6	TWA	1 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Eye irritation Skin irritation Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC)		
		TWA	1.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye irritation Skin irritation		
		STEL	2 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye irritation Skin irritation Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC)		
		STEL	2.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye irritation Skin irritation		
		TWA	1.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z -1 Limits for Air Contaminants
		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	2.000000 mg/m3	USA. NIOSH Recommended Exposure Limits

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material : Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time : 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material : Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time : 240 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

- | | |
|---|--|
| a) Appearance | Form : liquid, clear
Colour : colourless |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | 11.7 at 20 °C (68 °F) |
| e) Melting point/freezing point | -60 °C (-76 °F) |
| f) Initial boiling point and boiling range | 38 - 100 °C (100 - 212 °F) at 1,013 hPa (760 mmHg) |
| g) Flash point | Not applicable |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | Upper explosion limit : 27 %(V)
Lower explosion limit : 16 %(V) |
| k) Vapour pressure | 153 hPa (115 mmHg) at 20 °C (68 °F) |
| l) Vapour density | 1.21 - (Air = 1.0) |
| m) Relative density | 0.9 g/mL at 25 °C (77 °F) |
| n) Water solubility | No data available |
| o) Partition coefficient: n - octanol/water | No data available |
| p) Auto-ignition temperature | No data available |

9. PHYSICAL AND CHEMICAL PROPERTIES

- q) Decomposition temperature No data available
r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties No data available

Other safety information

Relative vapour density 1.21 - (Air = 1.0)

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

Avoid moisture.

Incompatible materials

Bases, Metals, Acid chlorides, Alkali metals, Copper, Iron, Zinc

Hazardous decomposition products

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 1,080 mg/kg

Inhalation : No data available

No data available

Skin corrosion/irritation

Skin - Rabbit

Result : Mild skin irritation

Serious eye damage/eye irritation

Eyes - Rabbit

Result : Risk of serious damage to eyes.

(OECD Test Guideline 405)

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

Result : Not mutagenic in Ames Test

Histidine reversion (Ames)

Carcinogenicity

IARC: No component 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 component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

Possible risk of congenital malformation in the fetus.

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS : Not available

Effects due to ingestion may include:, Nausea, Vomiting, Local irritation

Inhalation may provoke the following symptoms:, Cough, Shortness of breath

Kidney injury may occur., Cardiovascular effects.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish LC50 - Leuciscus idus (Golden orfe) - 160 mg/l - 48 h
 Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 137 mg/l - 48 h

Persistence and degradability

Biodegradability

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

Ammonium hydroxide

DOT (US)

UN number: 2672 Class: 8 Packing group: III
 Proper shipping name : Ammonia solution
 Reportable Quantity (RQ): 1621 lbs
 Poison Inhalation Hazard : No

IMDG

UN number : 2672 Class: 8 Packing group: III EMS-No: F-A,S-B
 Proper shipping name : AMMONIA SOLUTION
 Marine pollutant:yes

IATA

UN number: 2672 Class: 8 Packing group: III
 Proper shipping name : Ammonia solution

Oxalic acid

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS -No.	Revision Date
Ammonium hydroxide	1336 -21 -6	2007 -03 -01

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right To Know Components

	CAS -No.	Revision Date
Ammonium hydroxide	1336 -21 -6	2007 -03 -01
	CAS -No.	Revision Date
Oxalic acid dihydrate	6153 -56 -6	1993 -04 -24

Pennsylvania Right To Know Components

	CAS -No.	Revision Date
Ammonium hydroxide	1336 -21 -6	2007 -03 -01
Water	7732 -18 -5	
	CAS -No.	Revision Date
Oxalic acid dihydrate	6153 -56 -6	1993 -04 -24

15. REGULATORY INFORMATION

New Jersey Right To Know Components

	CAS -No.	Revision Date
Ammonium hydroxide	1336 -21 -6	2007 -03 -01
Water	7732 -18 -5	
	CAS -No.	Revision Date
Oxalic acid dihydrate	6153 -56 -6	1993 -04 -24

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Eye Dam.	Serious eye damage
H302 + H312	Harmful if swallowed or in contact with skin
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.
Skin Corr.	Skin corrosion

HMIS Rating

Health hazard :	3
Chronic Health Hazard :	
Flammability :	0
Physical Hazard :	0

NFPA Rating

Health hazard :	3
Fire Hazard :	0
Reactivity Hazard :	0

Revision Date: 06/22/2015

Prepared by: HazTech Systems, Inc.

This information is based on HazTech Systems, Inc.'s, current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.