

Material Safety Data Sheet

Oxalic Acid Anhydrous For Synthesis



Section 1. Product and Company Identification

Product name	: Oxalic Acid Anhydrous For Synthesis
Product code	: 8.16144
Synonym	: Ethanedioic acid dihydrate
Material uses	: Other non-specified industry: Analytical reagent.
Manufacturer	: EMD Chemicals Inc. P.O. Box 70 480 Democrat Road Gibbstown, NJ 08027 856-423-6300 Technical Service Monday - Friday: 8:00 - 5:00 PM
Validation date	: 12/14/2007.
Print date	:
In case of emergency	: 800-424-9300 CHEMTREC (USA) 613-996-6666 CANUTEC (Canada) 24 Hours/Day: 7 Days/Week

Section 2. Hazards Identification

Physical state	: Solid.
Odor	: Odorless.
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	: DANGER! MAY BE FATAL IF SWALLOWED. CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE DAMAGE TO THE FOLLOWING ORGANS: KIDNEYS, MUCOUS MEMBRANES, GASTROINTESTINAL TRACT, RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA, NOSE, SINUSES, THROAT. Do not ingest. Do not get in eyes or on skin or clothing. Do not breathe dust. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Eyes	: Corrosive to eyes.
Skin	: Toxic in contact with skin. Corrosive to the skin.
Inhalation	: Toxic by inhalation. Corrosive to the respiratory system.
Ingestion	: Very toxic if swallowed. May cause burns to mouth, throat and stomach.
Carcinogenic effects	: No known significant effects or critical hazards.
Mutagenic effects	: No known significant effects or critical hazards.
Teratogenicity / Reproductive toxicity	: No known significant effects or critical hazards.
Medical conditions aggravated by over-exposure	: Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated or prolonged exposure to the substance can produce target organs damage.

See toxicological information (section 11)

Section 3. Composition/Information on Ingredients

United States

Name

CAS number

% by Weight

Oxalic Acid anhydrous

144-62-7 100

Section 4. First Aid Measures

- Eye contact** : Get medical attention immediately. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician.
- Skin contact** : Get medical attention immediately. Flush contaminated skin with plenty of water. Continue to rinse for at least 10 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing or wear gloves. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Inhalation** : Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Ingestion** : Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing or wear gloves.

Section 5. Fire Fighting Measures

- Flammability of the product** : No specific hazard.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Not available.
- Special protective equipment 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.
- Special remarks on explosion hazards** : Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapors possible in the event of fire.

Section 6. Accidental Release Measures

- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, vacuum or carefully scoop up spilled material and place in an appropriate container for disposal by incineration. Avoid creating dusty conditions and prevent wind dispersal.

Section 7. Handling and Storage

- Handling** : Do not ingest. Do not get in eyes or on skin or clothing. Keep container closed. Use only with adequate ventilation. Do not breathe dust. Wash thoroughly after handling.

- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area.
- Additional information** : Store at +15° to +25°C. (59° to 77° F)

Section 8. Exposure Controls/Personal Protection

Product name

Exposure limits

United States

- Oxalic Acid anhydrous
- ACGIH TLV (United States, 2002).**
STEL: 2 mg/m³ 15 minute/minutes.
TWA: 1 mg/m³ 8 hour/hours.
- NIOSH REL (United States, 2001).**
STEL: 2 mg/m³ 15 minute/minutes.
TWA: 1 mg/m³ 10 hour/hours.
- OSHA PEL (United States, 1974).**
TWA: 1 mg/m³ 8 hour/hours.
- OSHA PEL 1989 (United States, 1989).**
STEL: 2 mg/m³ 15 minute/minutes.
TWA: 1 mg/m³ 8 hour/hours.
- ACGIH TLV (United States, 1/2007).**
STEL: 2 mg/m³ 15 minute/minutes.
TWA: 1 mg/m³ 8 hour/hours.
- NIOSH REL (United States, 12/2001).**
STEL: 2 mg/m³ 15 minute/minutes.
TWA: 1 mg/m³ 10 hour/hours.
- OSHA PEL (United States, 11/2006).**
TWA: 1 mg/m³ 8 hour/hours.
- OSHA PEL 1989 (United States, 3/1989).**
STEL: 2 mg/m³ 15 minute/minutes.
TWA: 1 mg/m³ 8 hour/hours.

Consult local authorities for acceptable exposure limits.

- Engineering measures** : Use only with adequate ventilation. If user operations generate dust, fumes, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection

- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
Recommended: face shield , safety glasses with side-shields
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Body: Recommended: chemical-resistant protective suit and gloves
- Respiratory** : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Recommended: Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Vapor respirator or self-contained breathing apparatus (SCBA).
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: nitrile rubber
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9. Physical and Chemical Properties

- Physical state** : Solid.
- Color** : White.
- Odor** : Odorless.
- Molecular weight** : 90.04 g/mole

Molecular formula	: C2-H2-O4
pH	: 1 (Conc. (% w/w): 0.1) [Acidic.]
Boiling/condensation point	: 148.9°C (300°F)
Melting/freezing point	: 101.7°C (215.1°F)
Relative density	: 1.9 (Water = 1)
Vapor density	: 4.3 (Air = 1)

Section 10. Stability and Reactivity

Stability and reactivity	: The product is stable.
Conditions of instability	: Heating (decomposition)
Incompatibility with various substances	: Heating (decomposition) Risk of explosion with: chlorates, sodium hypochlorite, strong oxidizing agents, silver, salts of oxyhalogenic acids. Exothermic reaction with: bases, ammonia, mercury.
Hazardous polymerization	: Will not occur.
Conditions of reactivity	: Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapors possible in the event of fire.

Section 11. Toxicological Information

Toxicity data

United States

Product/ingredient name	Test	Result	Route	Species
Oxalic Acid	LD50	375 mg/kg	Oral	Rat
anhydrous	LD50	20000	Dermal	Rabbit
	LDLo	mg/kg	Oral	woman
		600 mg/kg		

Chronic effects on humans : May cause damage to the following organs: kidneys, mucous membranes, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea, nose/sinuses, throat.

Other toxic effects on humans : Very hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation (lung irritant).

Specific effects

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.

Sensitization

Ingestion : May cause burns to mouth, throat and stomach.

Inhalation : Corrosive to the respiratory system.

Eyes : Corrosive to eyes.

Skin : Corrosive to the skin.

Section 12. Ecological Information

Ecotoxicity data

United States

Product/ingredient name	Species	Period	Result
Oxalic Acid anhydrous	Daphnia magna (EC50)	48 hour/hours	136.9 mg/l

Environmental precautions : No known significant effects or critical hazards.

Products of degradation : These products are carbon oxides (CO, CO₂) and water.

Toxicity of the products of biodegradation : The products of degradation are less toxic than the product itself.

Section 13. Disposal Considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. 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.


RCRA classification : Code: (C)

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport Information

Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
DOT Classification	un3261	Corrosive Solid, Acidic, Organic, N.O.S (Oxalic Acid)	8	II		Not available.

PG* : Packing group

Section 15. Regulatory Information

United States

HCS Classification : Highly toxic material
Corrosive material
Target organ effects

U.S. Federal regulations : TSCA 8(b) inventory: Listed

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Oxalic Acid anhydrous
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Oxalic Acid anhydrous: Immediate (acute) health hazard, Delayed (chronic) health hazard
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

State regulations : Pennsylvania RTK: Oxalic Acid anhydrous: (generic environmental hazard)
Massachusetts RTK: Oxalic Acid anhydrous
New Jersey: Oxalic Acid anhydrous

Canada

WHMIS (Canada) : Class D-1B: Material causing immediate and serious toxic effects (Toxic).
Class E: Corrosive material

CEPA DSL/CEPA NDSL : CEPA DSL: Oxalic Acid anhydrous

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

EU regulations

Hazard symbol/symbols :



Risk phrases : R22- Harmful if swallowed.
Safety phrases : S2- Keep out of the reach of children.

International regulations

International lists : Australia (NICNAS): Oxalic Acid anhydrous
China: Oxalic Acid anhydrous
Germany water class: Oxalic Acid anhydrous
Japan (METI): Oxalic Acid anhydrous
Korea (TCCL): Oxalic Acid anhydrous
Philippines (RA6969): Oxalic Acid anhydrous

Section 16. Other Information

Label requirements : DANGER!

MAY BE FATAL IF SWALLOWED.
CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS.
HARMFUL IF INHALED OR ABSORBED THROUGH SKIN.
MAY CAUSE DAMAGE TO THE FOLLOWING ORGANS: KIDNEYS, MUCOUS
MEMBRANES, GASTROINTESTINAL TRACT, RESPIRATORY TRACT, SKIN,
CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA, NOSE, SINUSES,
THROAT.

National Fire : 1 **Flammability**
Protection **Health** 3 0 **Instability**
Association (U.S.A.) **Special**

Notice to reader

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