MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

MALLINCKRODT J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 202-483-7616

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

OXALIC ACID, AQUEOUS SOLUTION (5-10%)

1. Product Identification

Synonyms: Ethanedioic acid
CAS No: 144-62-7
Molecular Weight: 126.07
Chemical Formula: $C_2H_2O_4 \cdot 2H_2O$ in aqueous solution.
Product Codes: **J.T. Baker:** 4665
Mallinckrodt: H281, V602

2. Composition/Information on Ingredients

Ingredient	CAS No.	Percent	Hazardous
Oxalic Acid	144-62-7	5 - 10%	Yes
Water	7732-18-5	90 - 95%	No

3. Hazards Identification

Emergency Overview

POISON! DANGER! MAY BE FATAL IF SWALLOWED. CAUSES SEVERE IRRITATION AND BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE KIDNEY DAMAGE.

J.T. Baker SAF-T-DATA(tm) Ratings

(Provided here for your convenience)

Health:	Flammability:	Reactivity:	Contact:
2 - Moderate	0 - None	1 - Slight	3 - Severe (Corrosive)

Lab Protection Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: White (Corrosive)

Potential Health Effects

Oxalic acid is corrosive to tissue. When ingested, oxalic acid removes calcium from the blood. Kidney damage

can be expected as the calcium is removed from the blood in the form of calcium oxalate. The calcium oxalate then obstructs the kidney tubules.

Inhalation:

Inhalation of mist or vapor may cause irritation and burns to mucous membranes of the respiratory tract.

Ingestion:

Corrosive. Toxic. May cause burns of the mouth and esophagus, nausea, gastroenteritis and shock. Absorption can occur causing systemic poisoning. Symptoms may include headache, weak pulse, and muscle cramps. May cause kidney damage. Severe poisoning may be fatal. Estimated fatal dose of oxalic acid is 5-15 grams.

Skin Contact:

An irritant to the skin. May cause redness, pain, and burns to the skin. May be absorbed through the skin.

Eye Contact:

Splashes may cause severe irritation and possible eye damage.

Chronic Exposure:

Prolonged inhalation of mist may cause inflammation of upper respiratory tract. Skin contact may cause dermatitis. May cause kidney damage, dermatitis, cyanosis of the fingers, and possible ulceration.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems or impaired respiratory or kidney function may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.

Ingestion:

DO NOT INDUCE VOMITING! Give large quantities of limewater or milk to drink. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician, immediately. Wash clothing before reuse.

Eye Contact:

Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician immediately.

5. Fire Fighting Measures

Fire:

Not considered to be a fire hazard.

Explosion:

Not considered to be an explosion hazard.

Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such

as saw dust. Do not flush to sewer!
J. T. Baker NEUTRASORB® or TEAM® 'Low Na+' acid neutralizers are recommended for spills of this product.

7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Protect from freezing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

Oxalic acid:
-ACGIH Threshold Limit Value (TLV):
1 mg/m^3 (TWA), 2 mg/m^3 (STEL)
-OSHA Permissible Exposure Limit (PEL):
1 mg/m^3

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirator (NIOSH Approved)

If the exposure limit is exceeded, a half-face respirator with an organic vapor cartridge and dust/mist filter may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an organic vapor cartridge and dust/mist filter may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. This compound possibly exists in both particulate and vapor phase. If vapor concentration alone exceeds the exposure limit, use a supplied air respirator.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Clear, colorless solution.

Odor:
Odorless.

Solubility:
Soluble in water.

Specific Gravity:
5% (w/w) = 1.02 (17.5°C/4°C); 10% (w/w) = 1.04 (17.5°C/4°C)

pH:
No information found.

% Volatiles by volume @ 21°C (70°F):

Boiling Point:
101°C (214°F)

Melting Point:
-3°C (27°F)

Vapor Density (Air=1):
No information found.

Vapor Pressure (mm Hg):
No information found.

Evaporation Rate (BuAc=1):
No information found.

No information found.

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition. May also form formic acid.
Hazardous Polymerization:
Will not occur.
Incompatabilities:
Alkalis, chlorites, hypochlorites, oxidizing agents, furfuryl alcohol, and silver compounds.
Conditions to Avoid:
Incompatibles.

11. Toxicological Information

Oxalic acid [144-62-7]: Oral rat LD50: 7500 mg/Kg. Irritation data: Skin rabbit, Standard Draize: 500 mg/24 Hr (mild); Eye rabbit, Standard Draize: 250 ug/24 Hr (severe). Investigated as a reproductive effector.

Cancer Lists

	---NTP Carcinogen---		
Ingredient	**Known**	**Anticipated**	**IARC Category**
Oxalic Acid (144-62-7)	No	No	None
Water (7732-18-5)	No	No	None

12. Ecological Information

Environmental Fate:
No information found.
Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (OXALIC ACID)
Hazard Class: 8
UN/NA: UN3265 **Packing Group:** III
Information reported for product/size: 200L

International (Water, I.M.O.)

Proper Shipping Name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (OXALIC ACID)
Hazard Class: 8

UN/NA: UN3265 **Packing Group:** III

Information reported for product/size: 200L

15. Regulatory Information

Chemical Inventory Status

						---Canada---		
Ingredient	TSCA	EC	Japan	Australia	Korea	DSL	NDSL	Phil.
Oxalic Acid (144-62-7)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Water (7732-18-5)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Federal, State & International Regulations

	---SARA 302---		----------SARA 313----------			-RCRA-	-TSCA-
Ingredient	RQ	TPQ	List	Chemical Catg.	CERCLA	261.33	8(d)
Oxalic Acid (144-62-7)	No	No	No	No	No	No	No
Water (7732-18-5)	No	No	No	No	No	No	No

Chemical Weapons Convention: No **TSCA 12(b):** No **CDTA:** No

SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: No (Mixture / Liquid)

Australian Hazchem Code: 2R **Australian Poison Schedule:** None allocated.

WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings:

Health: 3 Flammability: 1 Reactivity: 0

Label Hazard Warning:

POISON! DANGER! MAY BE FATAL IF SWALLOWED. CAUSES SEVERE IRRITATION AND BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE KIDNEY DAMAGE.

Label Precautions:

Do not breathe vapor or mist.
Wash thoroughly after handling.
Do not get in eyes, on skin, or on clothing.
Use only with adequate ventilation.
Keep container closed.

Label First Aid:

If swallowed, DO NOT INDUCE VOMITING! Give large quantities of lime water or milk to drink. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases call a physician immediately.

Product Use:

Laboratory Reagent.

Revision Information:

MSDS Section(s) changed since last revision of document include: 14.

Disclaimer:

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