

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 14.02.2006
Supersedes edition of 15.03.2005

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No.: 816144
Product name: Oxalic acid anhydrous for synthesis

Use of the substance/preparation

Chemical for synthesis

Company/undertaking identification

Company: Merck Schuchardt OHG * 85662 Hohenbrunn * Germany *
Tel: +49 8102/802-0
Emergency telephone No.: Please contact the regional Merck representation
in your country.

2. Composition/information on ingredients

Synonyms

Ethanedioic acid dihydrate

CAS-No.:	144-62-7	EC-Index-No.:	607-006-00-8
M:	90.03 g/mol	EC-No.:	205-634-3
Formula Hill:	C ₂ H ₂ O ₄		
Chemical formula:	HOOC-COOH		

3. Hazards identification

Harmful in contact with skin and if swallowed.

4. First aid measures

After inhalation: fresh air.
After skin contact: wash off with plenty of water. Remove contaminated clothing. Call in physician.
After eye contact: rinse out with plenty of water with the eyelid held wide open.
After swallowing: immediately make victim drink plenty of water. Call in physician.

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5. Fire-fighting measures

Suitable extinguishing media:
Water, CO₂, foam, powder.

Special risks:
Combustible. Development of hazardous combustion gases or vapours possible in the event of fire.

Special protective equipment for fire fighting:
Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Other information:
Prevent fire-fighting water from entering surface water or groundwater.

6. Accidental release measures

Person-related precautionary measures:
Avoid substance contact. Avoid generation of dusts; do not inhale dusts. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:
Do not allow to enter sewerage system.

Procedures for cleaning / absorption:
Take up dry. Forward for disposal. Clean up affected area. Avoid generation of dusts.

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. Dry. At +15°C to +25°C.

8. Exposure controls/personal protection

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory protection: required when dusts are generated.

Eye protection: required

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Hand protection:

In full contact:

Glove material: nitrile rubber
Layer thickness: 0.11 mm
Breakthrough time: > 480 Min.

In splash contact:

Glove material: nitrile rubber
Layer thickness: 0.11 mm
Breakthrough time: > 480 Min.

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 741 Dermatril® L (full contact), 741 Dermatril® L (splash contact). The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Industrial hygiene:

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

9. Physical and chemical properties

Form:	solid			
Colour:	white			
Odour:	odourless			
pH value at 100 g/l H ₂ O	(20 °C)	~ 1		
Melting point		189 °C		(decomposition)
Boiling point		not available		
Ignition temperature		not available		
Flash point		not available		
Explosion limits	lower	not available		
	upper	not available		
Vapour pressure	(50 °C)	21.5 hPa		
Density	(20 °C)	1.9 g/cm ³		
Bulk density		~ 750 kg/m ³		
Solubility in water	(25 °C)	220 g/l		(experimental)
Thermal decomposition		> 157 °C		
log Pow	(30 °C)	-0.81		(IUCLID)

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10. Stability and reactivity

Conditions to be avoided

Heating (decomposition).

Substances to be avoided

Risk of explosion with: chlorates, sodium hypochlorite, strong oxidizing agents, silver.

Exothermic reaction with: bases, ammonia, mercury.

Hazardous decomposition products

no information available

Further information

sensitive to moisture.

11. Toxicological information

Acute toxicity

LD₅₀ (dermal, rabbit): 20000 mg/kg (IUCLID).

LD₅₀ (oral, rat): 375 mg/kg (External MSDS).

Specific symptoms in animal studies:

Eye irritation test (rabbit): Severe irritations (RTECS).

The literature data available to us do not conform with the labelling prescribed by the EC. The EC has dossiers which have not been published.

Subacute to chronic toxicity

Bacterial mutagenicity: Ames test: negative. (Lit.)

Further toxicological information

After inhalation: Irritations of the mucous membranes, coughing, and dyspnoea.

After skin contact: Danger of skin absorption. tissue damage

After swallowing: irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract. Rapid absorption. (gastrointestinal tract, skin).

After absorption: agitation, spasms, nausea, vomiting, cardiovascular failure, collapse. disturbed electrolyte balance.

Secondary products cause: Damage of: kidneys.

Other notes:

The following applies to oxalates in general: nausea and vomiting after swallowing. Mucosal irritations, coughing, and dyspnoea after inhalation. Systemic effect: drop in the blood calcium level, toxic effect on kidneys, cardiovascular disorders.

Further data

The product should be handled with the care usual when dealing with chemicals.

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12. Ecological information

Biologic degradation:
Biodegradation: 40 % /5 d (IUCLID).
Biodegradable.

Behavior in environmental compartments:
Distribution: log Pow: -0.81 (30 °C) (IUCLID).
No bioaccumulation is to be expected (log Pow <1).

Ecotoxic effects:
Biological effects:
Fish toxicity: *Lidus* LC₅₀: 160 mg/l /48 h (External MSDS).
Daphnia toxicity: *Daphnia magna* EC₅₀: 137 mg/l /48 h (ECOTOX Database).

Further ecologic data:
BOD₅: 0.16 g/g (IUCLID)
TOD: 0.18 g/g (calculated) (own results)
COD: 0.18 g/g (IUCLID)

Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

14. Transport information

Road & Rail ADR, RID

UN 3261 AETZENDER SAURER ORGANISCHER FESTER STOFF, N.A.G. (OXALSAEURE), 8, II

Inland waterway ADN, ADNR not tested

Sea IMDG-Code

UN 3261 CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (OXALIC ACID), 8, II
Ems F-A S-B

Air CAO, PAX

UN 3261 CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (OXALIC ACID), 8, II

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

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15. Regulatory information

Labelling according to EC Directives

Symbol:	Xn	Harmful
R-phrases:	21/22	Harmful in contact with skin and if swallowed.
S-phrases:	24/25	Avoid contact with skin and eyes.
EC-No.:	205-634-3	EC label

Reduced labelling (1999/45/EC, Art. 10, 4)

Symbol:	Xn	Harmful
R-phrases:	21/22	Harmful in contact with skin and if swallowed.
S-phrases:	---	

16. Other information

Reason for alteration

General update.

Regional representation:

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.