SAFETY DATA SHEET

1. Identification

Product Name  Oxalic acid, anhydrous
Cat No. : AC186430000; AC186430010; AC186430010LC; AC186430050; AC186432500
Synonyms Ethanedionic acid
Recommended Use Laboratory chemicals.
Uses advised against No Information available

Details of the supplier of the safety data sheet

Company Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information US call: 001-800-ACROS-01
Europe call: +32 14 57 52 11
Emergency Number US:001-201-796-7100 /
Europe: +32 14 57 52 99
CHEMTREC Tel. No.US:001-800-424-9300 /
Europe:001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to metals Category 1
Acute oral toxicity Category 4
Acute dermal toxicity Category 4
Serious Eye Damage/Eye Irritation Category 1
Specific target organ toxicity (single exposure) Category 3
Target Organs - Respiratory system.
Specific target organ toxicity - (repeated exposure) Category 2
Target Organs - Kidney, Liver.

Label Elements

Signal Word Danger

Hazard Statements
May be corrosive to metals
Harmful if swallowed
Harmful in contact with skin
Causes serious eye damage
May cause respiratory irritation
May cause damage to organs through prolonged or repeated exposure
Precautionary Statements

Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep only in original container

Response
Get medical attention/advice if you feel unwell

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell

Skin
IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse

Eyes
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

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

Spills
Absorb spillage to prevent material damage

Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up
Store in corrosive resistant polypropylene container with a resistant inliner
Store in a dry place

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

Hazards not otherwise classified (HNOC)
None identified

3. Composition / information on ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxalic acid</td>
<td>144-62-7</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

4. First-aid measures

General Advice
If symptoms persist, call a physician.

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Obtain medical attention.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.
Inhalation
Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion
Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Most important symptoms/effects
Causes eye burns.

Notes to Physician
Treat symptomatically

5. Fire-fighting measures

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

Unsuitable Extinguishing Media
No information available

Flash Point
> 93.4 °C / > 200.1 °F

Autoignition Temperature
No information available

Explosion Limits
Upper No data available
Lower No data available

Sensitivity to Mechanical Impact
No information available

Sensitivity to Static Discharge
No information available

Specific Hazards Arising from the Chemical
Corrosive Material. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
Carbon monoxide (CO) Carbon dioxide (CO₂)

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

Personal Precautions
Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation.

Environmental Precautions
Should not be released into the environment. See Section 12 for additional ecological information.

Methods for Containment and Clean Up
Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling
Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. To maintain product quality. Protect from moisture.

8. Exposure controls / personal protection

Exposure Guidelines
## 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
</table>
| Oxalic acid        | TWA: 1 mg/m³  
                      STEL: 2 mg/m³ | (Vacated) TWA: 1 mg/m³  
                      (Vacated) STEL: 2 mg/m³ | TWA: 1 mg/m³  
                      STEL: 2 mg/m³ |

**Legend**

ACGIH - American Conference of Governmental Industrial Hygienists  
OSHA - Occupational Safety and Health Administration  
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

### Physical State
- Powder Solid

### Appearance
- White

### Odor
- Odorless

### Odor Threshold
- No information available

### pH
- 1.3  
- 9 g/L

### Melting Point/Range
- 189 - 191 °C / 372.2 - 375.8 °F

### Boiling Point/Range
- No information available

### Flash Point
- > 93.4 °C / > 200.1 °F

### Evaporation Rate
- Not applicable

### Flash Point or explosive limits
- No information available

### Flammability (solid, gas)

#### Upper
- No data available

#### Lower
- No data available

### Vapor Pressure
- < 0.01 mmHg @ 20 °C

### Vapor Density
- Not applicable

### Relative Density
- 1.900

### Solubility
- Soluble in water

### Partition coefficient; n-octanol/water
- No data available

### Autoignition Temperature
- No information available

### Decomposition Temperature
- No information available

### Viscosity
- Not applicable

### Molecular Formula
- C₂H₂O₄

### Molecular Weight
- 90.04

## 10. Stability and reactivity

### Reactive Hazard
- No
Stability
Stable under normal conditions.

Conditions to Avoid

Incompatible Materials
Strong oxidizing agents, Strong bases, Metals, Acid chlorides

Hazardous Decomposition Products
Carbon monoxide (CO), Carbon dioxide (CO₂)

Hazardous Polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
None under normal processing.

11. Toxicological information

Acute Toxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral (Rat)</th>
<th>LD50 Dermal (Rat)</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxalic acid</td>
<td>375 mg/kg</td>
<td>20000 mg/kg</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Toxicologically Synergistic Products
No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation
Causes eye burns; Irritating to respiratory system and skin

Sensitization
No information available

Carcinogenicity
The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
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</thead>
<tbody>
<tr>
<td>Oxalic acid</td>
<td>144-62-7</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Mutagenic Effects
No information available

Reproductive Effects
Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects
Developmental effects have occurred in experimental animals.

Teratogenicity
Teratogenic effects have occurred in experimental animals.

STOT - single exposure
Respiratory system

STOT - repeated exposure
Kidney Liver

Aspiration hazard
No information available

Symptoms / effects, both acute and delayed
No information available

Endocrine Disruptor Information
No information available

Other Adverse Effects
See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxalic acid</td>
<td>Not listed</td>
<td>4000 mg/L LC50 24 h</td>
<td>Not listed</td>
<td>EC50 = 136.9 mg/L/48h</td>
</tr>
</tbody>
</table>

Persistence and Degradability
Soluble in water. Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation
No information available.
Mobility

Will likely be mobile in the environment due to its water solubility.

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxalic acid</td>
<td>-0.81</td>
</tr>
</tbody>
</table>

13. Disposal considerations

Waste Disposal Methods
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

<table>
<thead>
<tr>
<th>DOT</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-No</td>
<td>UN3261</td>
<td></td>
</tr>
<tr>
<td>Proper Shipping Name</td>
<td>CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.</td>
<td></td>
</tr>
<tr>
<td>Proper technical name</td>
<td>(OXALIC ACID)</td>
<td></td>
</tr>
<tr>
<td>Hazard Class</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Packing Group</td>
<td>III</td>
<td></td>
</tr>
<tr>
<td>TDG</td>
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<td></td>
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<tr>
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<td>UN3261</td>
<td></td>
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<tr>
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<td>8</td>
<td></td>
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<tr>
<td>Packing Group</td>
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<td></td>
</tr>
<tr>
<td>IATA</td>
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<tr>
<td>UN-No</td>
<td>UN3261</td>
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<tr>
<td>Proper Shipping Name</td>
<td>Corrosive solid, acidic, organic, n.o.s</td>
<td></td>
</tr>
<tr>
<td>Hazard Class</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Packing Group</td>
<td>III</td>
<td></td>
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<tr>
<td>IMDG/IMO</td>
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<tr>
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<td>III</td>
<td></td>
</tr>
</tbody>
</table>

15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxalic acid</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>205-634-3</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule.
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b)
Oxalic acid, anhydrous

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA 12(b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxalic acid</td>
<td>Section 4</td>
</tr>
</tbody>
</table>

SARA 313 Not applicable

SARA 311/312 Hazardous Categorization
- Acute Health Hazard: Yes
- Chronic Health Hazard: Yes
- Fire Hazard: Yes
- Sudden Release of Pressure Hazard: No
- Reactive Hazard: No

Clean Water Act Not applicable

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxalic acid</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation
- Reportable Quantity (RQ): N
- DOT Marine Pollutant: N
- DOT Severe Marine Pollutant: N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations
- Mexico - Grade: Slight risk, Grade 1
- Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class
- D1B Toxic materials
- E Corrosive material
- D2B Toxic materials

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com
Creation Date  22-Oct-2009
Revision Date  16-Jul-2015
Print Date  16-Jul-2015
Revision Summary  This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS