SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006 Version 2 Revision Date 19.12.2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Oxalic acid

Product Number : 5397
Brand : Better Equipped
Index-No. : 607-006-00-8
REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration or the annual tonnage does not require a registration.
CAS-No. : 144-62-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances
Uses advised against : Not for sale to the general public

1.3 Details of the supplier of the safety data sheet

Company : Better Equipped,
Wrenbury Business Park,
Wrenbury Road,
Wrenbury,
Nantwich, Cheshire,
CW5 8EB, UK

Telephone : +44 (0) 800 9707142
Fax : +44 (0) 800 066 4443
E-mail address : sales@betterequipped.co.uk

1.4 Emergency telephone number

Emergency Phone # : +44 (0) 1270 781238

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Dermal (Category 4), H312
Serious eye damage (Category 1), H318

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

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal word : Danger

Hazard statement(s)
H302 + H312 : Harmful if swallowed or in contact with skin.
H318 : Causes serious eye damage.
Precautionary statement(s)

P280 Wear protective gloves/ eye protection/ face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard Statements

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxalic acid</td>
<td>Acute Tox. 4; Eye Dam. 1; H302, H312, H318</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

Hazardous ingredients according to Regulation (EC) No 1272/2008

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

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice
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
Remove contaminated clothing. 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.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available
SECTION 5: Firefighting measures

5.1 Extinguishing media

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

Unsuitable extinguishing media
Tap water.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- 6.1.1 For non-emergency personnel
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

- 6.1.2 For emergency responders
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

7.1.2 Advice on general occupational hygiene:
- No smoking.
- Do not eat or drink.
- Wash hands after use.
- Remove contaminated clothing.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Moisture sensitive.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>ValueForm of exposure</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxalic acid</td>
<td>144-62-7</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Europe. Indicative occupational exposure limit values</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remarks Indicative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>UK. EH40 WEL - Workplace Exposure Limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>2 mg/m³</td>
<td>UK. EH40 WEL - Workplace Exposure Limits</td>
</tr>
</tbody>
</table>

8.1.2 Information on currently recommended monitoring procedures

For currently recommended monitoring procedures, see HSE series 'Methods for the Determination of Hazardous Substances' (MDHS)

8.1.3 The relevant DNELs and PNECs for the substance/s for the exposure scenarios:

DNEL's. The derived no- or minimum effect level (DN(M)EL) is the level of exposure above which a human should not be exposed to a substance. Please note that when more than one summary is provided, DN(M)EL values may refer to constituents of the substance and not to the substance as a whole.

Data for WORKERS

<table>
<thead>
<tr>
<th>INHALATION Exposure</th>
<th>Threshold</th>
<th>Most sensitive study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systemic Effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term:</td>
<td>(DNEL) 3.11 mg/m³</td>
<td>repeated dose toxicity</td>
</tr>
<tr>
<td>Acute /short term:</td>
<td>No hazard identified</td>
<td></td>
</tr>
<tr>
<td>Local Effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term:</td>
<td>No hazard identified</td>
<td></td>
</tr>
<tr>
<td>Acute /short term:</td>
<td>No hazard identified</td>
<td></td>
</tr>
<tr>
<td>DERMAL Exposure</td>
<td>Threshold</td>
<td>Most sensitive study</td>
</tr>
<tr>
<td>Systemic Effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term:</td>
<td>(DNEL) 882 µg/kg bw/day</td>
<td>repeated dose toxicity</td>
</tr>
<tr>
<td>Acute /short term:</td>
<td>No hazard identified</td>
<td></td>
</tr>
<tr>
<td>Local Effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term:</td>
<td>No hazard identified</td>
<td></td>
</tr>
<tr>
<td>Acute /short term:</td>
<td>No hazard identified</td>
<td></td>
</tr>
<tr>
<td>EYE Exposure</td>
<td>High hazard (no threshold derived)</td>
<td></td>
</tr>
</tbody>
</table>
## Data for the GENERAL POPULATION

<table>
<thead>
<tr>
<th>Exposition Type</th>
<th>Threshold</th>
<th>Most sensitive study</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INHALATION Exposure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Systemic Effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term:</td>
<td>(DNEL) 466 µg/m³</td>
<td>repeated dose toxicity</td>
</tr>
<tr>
<td>Acute /short term:</td>
<td>No hazard identified</td>
<td></td>
</tr>
<tr>
<td><strong>Local Effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term:</td>
<td>No hazard identified</td>
<td></td>
</tr>
<tr>
<td>Acute /short term:</td>
<td>No hazard identified</td>
<td></td>
</tr>
<tr>
<td><strong>DERMAL Exposure</strong></td>
<td>Threshold</td>
<td>Most sensitive study</td>
</tr>
<tr>
<td><strong>Systemic Effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term:</td>
<td>(DNEL) 315 µg/kg bw/day</td>
<td>repeated dose toxicity</td>
</tr>
<tr>
<td>Acute /short term:</td>
<td>No hazard identified</td>
<td></td>
</tr>
<tr>
<td><strong>Local Effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term:</td>
<td>No hazard identified</td>
<td></td>
</tr>
<tr>
<td>Acute /short term:</td>
<td>No hazard identified</td>
<td></td>
</tr>
<tr>
<td><strong>ORAL Exposure</strong></td>
<td>Threshold</td>
<td>Most sensitive study</td>
</tr>
<tr>
<td><strong>Systemic Effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term:</td>
<td>(DNEL) 315 µg/kg bw/day</td>
<td>repeated dose toxicity</td>
</tr>
<tr>
<td>Acute /short term:</td>
<td>No hazard identified</td>
<td></td>
</tr>
<tr>
<td><strong>EYE Exposure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No hazard identified</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PNEC’s. The Predicted No-Effect Concentration (PNEC) value is the concentration of a substance below which adverse effects in the environment are not expected to occur. Please note that when more than one summary is provided, PNEC values may refer to constituents of the substance and not to the substance as a whole.

### Hazard for Aquatic Organisms

<table>
<thead>
<tr>
<th>Environment Type</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshwater</td>
<td>160 µg/L (1)</td>
</tr>
<tr>
<td>Intermittent releases (freshwater)</td>
<td>-</td>
</tr>
<tr>
<td>Marine water</td>
<td>16 µg/L (1)</td>
</tr>
<tr>
<td>Intermittent releases (marine water)</td>
<td>-</td>
</tr>
<tr>
<td>Sewage treatment plant (STP)</td>
<td>1.55 g/L (1)</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Sediment (freshwater)</td>
<td>Insufficient data available (further information necessary) (1)</td>
</tr>
<tr>
<td>Sediment (marine water)</td>
<td>Insufficient data available (further information necessary) (1)</td>
</tr>
<tr>
<td><strong>Hazard for Air</strong></td>
<td></td>
</tr>
<tr>
<td>Air</td>
<td>No hazard identified (1)</td>
</tr>
<tr>
<td><strong>Hazard for Terrestrial Organism</strong></td>
<td></td>
</tr>
<tr>
<td>Soil</td>
<td>No exposure of soil expected (1)</td>
</tr>
<tr>
<td><strong>Hazard for Predators</strong></td>
<td></td>
</tr>
<tr>
<td>Secondary poisoning</td>
<td>No potential for bioaccumulation (1)</td>
</tr>
</tbody>
</table>

### 8.2 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. Use Local exhaust ventilation (LEV).

#### Personal protective equipment

**Eye/face protection**

Face shield and safety glasses 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.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

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: 480 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
Do not let product enter drains.

SECTION 9: Physical and chemical properties
9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>9.2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Appearance</td>
</tr>
<tr>
<td>b)</td>
<td>Odour</td>
</tr>
<tr>
<td>c)</td>
<td>Odour Threshold</td>
</tr>
<tr>
<td>d)</td>
<td>pH</td>
</tr>
<tr>
<td>e)</td>
<td>Melting point/freezing point</td>
</tr>
<tr>
<td>f)</td>
<td>Initial boiling point and boiling range</td>
</tr>
<tr>
<td>g)</td>
<td>Flash point</td>
</tr>
<tr>
<td>h)</td>
<td>Evaporation rate</td>
</tr>
<tr>
<td>i)</td>
<td>Flammability (solid, gas)</td>
</tr>
<tr>
<td>j)</td>
<td>Upper/lower flammability or explosive limits</td>
</tr>
<tr>
<td>k)</td>
<td>Vapour pressure</td>
</tr>
<tr>
<td>l)</td>
<td>Vapour density</td>
</tr>
<tr>
<td>m)</td>
<td>Relative density</td>
</tr>
<tr>
<td>n)</td>
<td>Water solubility</td>
</tr>
<tr>
<td>o)</td>
<td>Partition coefficient: n- octanol/water</td>
</tr>
<tr>
<td>p)</td>
<td>Auto-ignition temperature</td>
</tr>
<tr>
<td>q)</td>
<td>Decomposition temperature</td>
</tr>
<tr>
<td>r)</td>
<td>Viscosity</td>
</tr>
<tr>
<td>s)</td>
<td>Explosive properties</td>
</tr>
<tr>
<td>t)</td>
<td>Oxidizing properties</td>
</tr>
</tbody>
</table>

9.3 Other safety information

| Surface tension | 70.1 mN/m at 0.014 at 25 °C |

SECTION 10: Stability and reactivity

10.1 Reactivity
None based on the data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
None under normal processing

10.4 Conditions to avoid
Avoid moisture.

10.5 Incompatible materials
Metals, Alkali metals
10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - female - 1,080 mg/kg
LD50 Dermal - Rabbit - 20,000 mg/kg

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Risk of serious damage to eyes. - 24 h
(OECD Test Guideline 405)

Respiratory or skin sensitisation
- Mouse
Result: Does not cause skin sensitisation.

Germ cell mutagenicity
S. typhimurium
Result: negative

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.

Reproductive toxicity
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
Repeated dose - LOAEL: 150 mg/kg - OECD Test Guideline 407
toxicity
RTECS: RO2450000
Kidney injury may occur., Contact with eyes can cause:, Damage to the eyes.

SECTION 12: Ecological information

12.1 Toxicity
Toxicity to fish static test LC50 - Leuciscus idus melanotus - 160 mg/l - 48 h
Toxicity to daphnia and other aquatic invertebrates Immobilization EC50 - Daphnia magna (Water flea) - 162.2 mg/l - 48 h
(OECD Test Guideline 202)
12.2 **Persistence and degradability**  
Biodegradability aerobic - Exposure time 20 d  
Result: 89 % - Readily biodegradable.

12.3 **Bioaccumulative potential**  
No data available

12.4 **Mobility in soil**  
No data available

12.5 **Results of PBT and vPvB assessment**  
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 **Other adverse effects**  
No data available

**SECTION 13: Disposal considerations**

13.1 **Waste treatment methods**  
**Product**  
Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Unused product may be returned and reused, in addition to disposal.  
**Contaminated packaging**  
Dispose of as unused product.

**SECTION 14: Transport information**

14.1 **UN number**  
ADR/RID: -  
IMDG: -  
IATA: -

14.2 **UN proper shipping name**  
ADR/RID: Not dangerous goods  
IMDG: Not dangerous goods  
IATA: Not dangerous goods

14.3 **Transport hazard class(es)**  
ADR/RID: -  
IMDG: -  
IATA: -

14.4 **Packaging group**  
ADR/RID: -  
IMDG: -  
IATA: -

14.5 **Environmental hazards**  
ADR/RID: no  
IMDG Marine pollutant: no  
IATA: no

14.6 **Special precautions for user**  
No data available

14.7 **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**  
N/A

**SECTION 15: Regulatory information**

15.1 **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 **Chemical safety assessment**  
For this product a chemical safety assessment was not carried out
SECTION 16: Other information

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

H302  Harmful if swallowed.
H302 + H312  Harmful if swallowed or in contact with skin.
H312  Harmful in contact with skin.
H318  Causes serious eye damage.

Revisions made since previous version of data sheet:
The following sections of this data sheet have been updated:
1.1, 1.2, 4.1, 5.1, 6.1, 7.1, 8.1, 8.2, 11, 12, 13, 14.7, 16

We strongly recommend reading the entire data sheet for this chemical in preparation ahead of use.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Better Equipped and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.