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

1.1 Product identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>CITRIC ACID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>MI11350</td>
</tr>
<tr>
<td>Norway Pr. no.</td>
<td>76247</td>
</tr>
<tr>
<td>Denmark Pr. no.</td>
<td>701692</td>
</tr>
</tbody>
</table>

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

Recommended Use: pH modifier
Uses advised against: Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to (EC) No. 1272/2008

Health hazards
Serious eye damage/eye irritation Category 2

Environmental hazards Not classified
Physical Hazards Not classified

2.2 Label elements
Signal word
WARNING

Hazard statements
H319 - Causes serious eye irritation

Precautionary Statements - EU (§28, 1272/2008)
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/ protective clothing/ 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
P337 + P313 - If eye irritation persists: Get medical advice/ attention
P501 - Dispose of contents/container in accordance with local regulations.

- 

- 

Contains
Citric acid, monohydrate

2.3 Other data
Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
 Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>EC-No.</th>
<th>CAS-No</th>
<th>Weight % - range</th>
<th>Classification (67/548)</th>
<th>Classification (Reg. 1272/2008)</th>
<th>REACH registration number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid, monohydrate</td>
<td></td>
<td>5949-29-1</td>
<td>100</td>
<td>Xi; R36</td>
<td>Eye Irrit. 2 (H319)</td>
<td>No data available</td>
</tr>
</tbody>
</table>

3.2 Mixtures
Not Applicable
4. First aid measures

4.1 First-Aid Measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation persists.

Eye contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention immediately if symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media Water Fog, Alcohol Foam, CO₂, Dry Chemical.

Extinguishing media which shall not be used for safety reasons None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards Dust may form explosive mixture in air.

Hazardous combustion products Fire or high temperatures create; Carbon oxides (COₓ).

5.3 Advice for firefighters

Special protective equipment for fire-fighters As in any fire, wear self-contained breathing apparatus and full protective gear.
**6. Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. If spilled, take caution, as material can cause surfaces to become very slippery.

**6.2 Environmental precautions**

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**

Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

**6.3 Methods and materials for containment and cleaning up**

**Methods for containment**

Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**

Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

**6.4 Reference to other sections**

See section 13 for more information.

---

**7. Handling and storage**

**7.1 Precautions for safe handling**

**Handling**

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Remove all sources of ignition. If spilled, take caution, as material can cause surfaces to become very slippery.

**Hygiene measures**

Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing.

**7.2 Conditions for safe storage, including any incompatibilities**

**Technical measures/precautions**

Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Keep away from heat, sparks, and flame.

**Storage precautions**

Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid contact with: Strong oxidizing agents, Strong alkalies. Protect from moisture.

**Storage class**

Chemical storage.

**Packaging material**

Use specially constructed containers only.

**7.3 Specific end uses**

See Section 1.2.

---

**8. Exposure controls/personal protection**
8.1 Control parameters

Exposure limits

NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
No biological limit allocated

<table>
<thead>
<tr>
<th>Component</th>
<th>EU OEL</th>
<th>Austria</th>
<th>Australia</th>
<th>Denmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid, monohydrate</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Malaysia</th>
<th>France</th>
<th>Germany</th>
<th>Hungary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid, monohydrate</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>New Zealand</th>
<th>Italy</th>
<th>Netherlands</th>
<th>Norway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid, monohydrate</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Poland</th>
<th>Portugal</th>
<th>Romania</th>
<th>Russia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid, monohydrate</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Spain</th>
<th>Switzerland</th>
<th>Turkey</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid, monohydrate</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure

Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

**Eye protection**

It is good practice to wear Safety Glasses with Side-shields when handling any chemical. Repeated or prolonged contact; Use protective gloves made of:; Butyl, PVC, Frequent change is advisable.

**Hand protection**

Respirator must be worn if exposed to dust. Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Respiratory protection**

Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Crystalline Dust</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>pH @ dilution</td>
<td>1.6</td>
<td>@ 100 g/l</td>
</tr>
<tr>
<td>Melting/freezing point</td>
<td>153 °C / 307.4 °F</td>
<td></td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate (BuAc =1)</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not Applicable</td>
<td></td>
</tr>
<tr>
<td>Flammability Limits in Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Specific gravity</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Bulk density</td>
<td>900 kg/m³</td>
<td></td>
</tr>
<tr>
<td>Relative density</td>
<td>1.542 g/cm³</td>
<td>@ 20°C.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Soluble in water</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>1010 °C / 1850 °F</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Log Pow</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not Applicable</td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>None known.</td>
<td></td>
</tr>
</tbody>
</table>

9.2 Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pour point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>VOC content(%)</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>

10. Stability and reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability
Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Strong oxidizing agents. Strong alkalies.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation May cause irritation of respiratory tract.
Eye contact Causes serious eye irritation.
Skin contact Prolonged contact may cause redness and irritation.
Ingestion Ingestion may cause stomach discomfort.
Unknown acute toxicity Not Applicable.

LD50 Oral

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid, monohydrate</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of exposure None known.

Routes of entry No route of entry noted.
Specific target organ toxicity (single exposure) Not classified
Specific target organ toxicity (repeated exposure) Not classified.
Aspiration hazard No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Listed on PLONOR list of OSPAR

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

<table>
<thead>
<tr>
<th>Component</th>
<th>Toxicity to fish</th>
<th>Toxicity to algae</th>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid, monohydrate</td>
<td>1516 mg/L LC50 (Lepomis macrochirus) = 96 h</td>
<td>No information available</td>
<td>120 mg/L EC50 (Daphnia magna) = 72 h</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility in soil

Mobility
Soluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.
12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products
Dispose of in accordance with local regulations.

Contaminated packaging
Empty containers should be taken for local recycling, recovery or waste disposal.

EWC Waste disposal No.
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 01 99. Waste Code: 7134 organic acids.

14. Transport information

14.1 UN Number
Not regulated

14.2 Proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG Hazard class Not regulated
ICAO Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG Packing group Not regulated
ICAO Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Germany, Water Endangering Classes (VwVwS)
Water endangering class = 1

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No Poisons Schedule number allocated


This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.


Safe Work Australia.
Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)

The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA) Complies
European Union (EINECS and ELINCS) Complies
Canada (DSL) Complies
Philippines (PICCS) Complies
Japan (ENCS) Complies
China (IECSC) Complies
Australia (AICS) Complies
Korean (KECL) Complies
New Zealand (NZIoC) Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report
No information available

16. Other information

Prepared by Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes date: 28/Feb/2013
Revision date: 27/Jul/2015
Version: 7

The following sections have been revised: This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3
R36 - Irritating to eyes

Full text of H-Statements referred to under sections 2 and 3
H319 - Causes serious eye irritation

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier’s own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer’s sole remedies are as stated in separate agreement between the parties.