



## SAFETY DATA SHEET CITRIC ACID

### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1. Product identifier

**Product name** CITRIC ACID

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

**Identified uses** Oil well drilling fluid additive. pH modifier.

#### 1.3. Details of the supplier of the safety data sheet

**Supplier** M-I SWACO  
A Schlumberger Company  
Woodlands Drive  
Kirkhill Industrial Estate  
Dyce, Aberdeen AB21 0GW  
Scotland UK  
T=+44(0)1224-246600  
F=+11(0)1224-246699  
Email - MISDS@slb.com

#### 1.4. Emergency telephone number

(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.

#### National Emergency Telephone Number

+31 (0)30-2748888 Only for the purpose of informing medical personnel in cases of acute intoxications in the Netherlands.

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the substance or mixture

##### Classification (EC 1272/2008)

Physical and Chemical Hazards	Not classified.
Human health	Eye Irrit. 2 - H319
Environment	Not classified.

##### Classification (1999/45/EEC)

Xi;R36.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

#### 2.2. Label elements

##### Label In Accordance With (EC) No. 1272/2008



**Signal Word** Warning

##### Hazard Statements

H319	Causes serious eye irritation.
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##### Precautionary Statements

P337+313	If eye irritation persists: Get medical advice/attention.
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##### Supplementary Precautionary Statements

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P264	Wash contaminated skin thoroughly after handling.

**CITRIC ACID**

P305+351+338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**2.3. Other hazards**

Not Classified as PBT/vPvB by current EU criteria.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS****3.2. Mixtures**

CITRIC ACID MONOHYDRATE		60-100%
CAS-No.: 5949-29-1	EC No.:	
Classification (EC 1272/2008) Eye Irrit. 2 - H319	Classification (67/548/EEC) Xi;R36.	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

**Composition Comments**

The data shown is in accordance with the latest EC Directives.

**SECTION 4: FIRST AID MEASURES****4.1. Description of first aid measures****Inhalation**

Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Get medical attention if any discomfort continues.

**Ingestion**

Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. Get medical attention if any discomfort continues.

**Skin contact**

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

**Eye contact**

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

**4.2. Most important symptoms and effects, both acute and delayed****General information**

The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop as described the casualty should be transferred to hospital as soon as possible. For further information, please refer to section 11.

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat Symptomatically.

**SECTION 5: FIREFIGHTING MEASURES****5.1. Extinguishing media****Extinguishing media**

Water spray, foam, dry powder or carbon dioxide.

**5.2. Special hazards arising from the substance or mixture****Hazardous combustion products**

Fire or high temperatures create: Irritating gases/vapours/fumes of: Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

**Unusual Fire & Explosion Hazards**

High concentrations of dust may form explosive mixture with air.

**5.3. Advice for firefighters****Special Fire Fighting Procedures**

Containers close to fire should be removed immediately or cooled with water.

**Protective equipment for fire-fighters**

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

## CITRIC ACID

**SECTION 6: ACCIDENTAL RELEASE MEASURES****6.1. Personal precautions, protective equipment and emergency procedures**

Wear protective clothing as described in Section 8 of this safety data sheet.

**6.2. Environmental precautions**

Do not allow to enter drains, sewers or watercourses.

**6.3. Methods and material for containment and cleaning up**

Avoid generation and spreading of dust. Remove spillage with vacuum cleaner. If not possible, collect spillage with shovel, broom or the like. Flush with plenty of water to clean spillage area. Do not let washing down water contaminate ponds or waterways.

**6.4. Reference to other sections**

For waste disposal, see section 13.

**SECTION 7: HANDLING AND STORAGE****7.1. Precautions for safe handling**

Avoid inhalation of dust and contact with skin and eyes. Avoid handling which leads to dust formation.

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

Store in tightly closed original container in a dry, cool and well-ventilated place. Store separated from: Alkalis. Oxidising material.

**Storage Class**

Chemical storage.

**7.3. Specific end use(s)**

The identified uses for this product are detailed in Section 1.2.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1. Control parameters****Ingredient Comments**

NUI = Nuisance dust, WEL TWA 4mg/m3 Respirable Dust, 10 mg/m3 Total Dust.

**8.2. Exposure controls****Protective equipment****Process conditions**

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**

Provide adequate general and local exhaust ventilation.

**Respiratory equipment**

No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists. Wear mask supplied with: Dust filter P2 (for fine dust).

**Hand protection**

For prolonged or repeated skin contact use suitable protective gloves. Butyl rubber. Polyvinyl chloride (PVC).

**Eye protection**

Wear approved safety goggles.

**Other Protection**

Wear appropriate clothing to prevent any possibility of skin contact. Provide eyewash station.

## CITRIC ACID

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**9.1. Information on basic physical and chemical properties**

<b>Appearance</b>	Crystals or crystalline
<b>Colour</b>	White.
<b>Odour</b>	Odourless.
<b>Solubility</b>	Soluble in water.
<b>Melting point (°C)</b>	153°C
<b>Relative density</b>	1.542g/cm <sup>3</sup> @ 20°C
<b>Bulk Density</b>	900 kg/m <sup>3</sup>
<b>pH-Value, Diluted Solution</b>	1.6 @ 100g/l
<b>Solubility Value (G/100G H<sub>2</sub>O@20°C)</b>	60
<b>Auto Ignition Temperature (°C)</b>	1010°C

**9.2. Other information**

Not relevant

## SECTION 10: STABILITY AND REACTIVITY

**10.1. Reactivity**

Violent reaction with: Strong alkalis. Strong oxidising agents.

**10.2. Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3. Possibility of hazardous reactions**

Not known.

**10.4. Conditions to avoid**

None known.

**10.5. Incompatible materials****Materials To Avoid**

Strong alkalis. Strong oxidising agents.

**10.6. Hazardous decomposition products**

Fire or high temperatures create: Irritating gases/vapours/fumes of: Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

## SECTION 11: TOXICOLOGICAL INFORMATION

**11.1. Information on toxicological effects****Toxic Dose 1 - LD 50**

5040 mg/kg (oral-mouse)

**Toxic Dose 2 - LD 50**

3000 mg/kg (oral rat)

**Acute toxicity:****Acute Toxicity (Oral LD50)**

> 7000 mg/kg Rabbit

**ATE (Oral)**

3000 mg/kg

**Aspiration hazard:**

Not anticipated to present an aspiration hazard based on chemical structure.

**Inhalation**

Dust may irritate respiratory system or lungs

**CITRIC ACID****Ingestion**

May irritate and cause stomach pain, vomiting and diarrhoea.

**Skin contact**

Skin irritation is not anticipated when used normally.

**Eye contact**

Causes serious eye irritation. Particles in the eyes may cause irritation and smarting.

**Route of entry**

No route of entry noted.

**Target Organs**

No specific target organs noted

**SECTION 12: ECOLOGICAL INFORMATION****Ecotoxicity**

Contact M-I SWACO's QHSE Department for ecological information at env@miswaco.slb.com.

**12.1. Toxicity****Acute Fish Toxicity**

Not considered toxic to fish.

**LC 50, 96 Hrs, Fish mg/l** 440 - 760

**12.2. Persistence and degradability****Degradability**

There are no data on the degradability of this product.

**12.3. Bioaccumulative potential****Bioaccumulative potential**

No data available on bioaccumulation.

**12.4. Mobility in soil****Mobility:**

The product is soluble in water.

**12.5. Results of PBT and vPvB assessment**

This product does not contain any PBT or vPvB substances.

**12.6. Other adverse effects**

None known.

**SECTION 13: DISPOSAL CONSIDERATIONS****13.1. Waste treatment methods**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

**Waste Class**

EWC-code: 06 01 06. 7134. Organic acids.

**SECTION 14: TRANSPORT INFORMATION****General**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

**14.1. UN number**

Not applicable.

**14.2. UN proper shipping name**

Not applicable.

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**14.3. Transport hazard class(es)**

Not applicable.

**14.4. Packing group**

Not applicable.

**14.5. Environmental hazards****Environmentally Hazardous Substance/Marine Pollutant**

No.

**14.6. Special precautions for user**

Not applicable.

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable. Please contact MISDS@slb.com for info regarding transport in Bulk.

**SECTION 15: REGULATORY INFORMATION****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Uk Regulatory References**

Chemicals (Hazard Information & Packaging) Regulations. Control of Substances Hazardous to Health Regulations 2002 (as amended) Workplace Exposure Limits EH40.

**EU Legislation**

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

**National Regulations**

In accordance with Dutch Mining Regulation 9.2 and ARBO regulation Chapter 4.

**Water hazard classification**

WGK 1

**15.2. Chemical Safety Assessment****International Chemical Inventories**

Contact REACH@miswaco.slb.com for REACH information. Complies with the following national/regional chemical inventory requirements: Australia (AICS), Canada (DSL / NDSL), China (IECSC), Europe (EINECS / ELINCS), Japan (METI / ENCS), Korea (TCCL / ECL), New Zealand (NZIoC), Phillipines (PICCS), United States (TSCA).

**SECTION 16: OTHER INFORMATION****Information Sources**

Product information provided by the commercial vendor(s). Material Safety Data Sheet, Misc. manufacturers. LOLI. European Chemicals Bureau - ESIS (European Chemical Substances Information).

**Revision Comments**

General revision.

**Issued By** Sarah Malone

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**Revision** 6

**Supersedes date** 14-Mar-08

**SDS No.** 11350

**Signature** Laura McDonald

**Signature 2** Sandra McWilliam

**Risk Phrases In Full**

R36 Irritating to eyes.

**Hazard Statements In Full**

H319 Causes serious eye irritation.

**CITRIC ACID****Disclaimer**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to the