

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 22.03.2019

Version 1.3

**SECTION 1. Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Catalogue No. 218683

Product name MCA-1

REACH Registration Number This product is a mixture. REACH Registration Number see section 3.

**1.2 Relevant identified uses of the substance or mixture and uses advised against**Identified uses Chemical production  
For additional information on uses please refer to the Merck Chemicals portal ([www.merckgroup.com](http://www.merckgroup.com)).**1.3 Details of the supplier of the safety data sheet**

Company Merck KGaA \* 64271 Darmstadt \* Germany \* Phone: +49 6151 72-0

Responsible Department LS-QHC \* e-mail: [prodsafe@merckgroup.com](mailto:prodsafe@merckgroup.com)**1.4 Emergency telephone number Please contact the regional Merck representation in your country.****SECTION 2. Hazards identification****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Corrosive to metals, Category 1, H290

Skin corrosion, Category 1B, H314

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

**2.2 Label elements****Labelling (REGULATION (EC) No 1272/2008)***Hazard pictograms**Signal word*

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Danger

## *Hazard statements*

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

## *Precautionary statements*

### Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

### Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

## **Reduced labelling (≤125 ml)**

### *Hazard pictograms*



### *Signal word*

Danger

### *Hazard statements*

H314 Causes severe skin burns and eye damage.

### *Precautionary statements*

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Contains: sodium hydroxide

## **2.3 Other hazards**

None known.

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## **SECTION 3. Composition/information on ingredients**

Chemical nature

Aqueous solution of inorganic and organic compounds.

### **3.1 Substance**

Not applicable

### **3.2 Mixture**

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## Hazardous components (REGULATION (EC) No 1272/2008)

*Chemical name (Concentration)*

CAS-No.	Registration number	Classification
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Tetrasodium (1-hydroxyethylidene)bisphosphonate ( $\geq 3\%$ - $< 10\%$ )		
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3794-83-0	*)	
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Acute toxicity, Category 4, H302

Eye irritation, Category 2, H319

sodium hydroxide ( $\geq 2\%$  -  $< 5\%$ )

*PBT/vPvB: Not applicable for inorganic substances*

1310-73-2	01-2119457892-27-XXXX	
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Corrosive to metals, Category 1, H290

Skin corrosion, Category 1A, H314

\*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

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## SECTION 4. First aid measures

### 4.1 Description of first aid measures

*General advice*

First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

### 4.2 Most important symptoms and effects, both acute and delayed

Risk of blindness!

Irritation and corrosion, Cough, Shortness of breath  
collapse, death

### 4.3 Indication of any immediate medical attention and special treatment needed

No information available.

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## SECTION 5. Firefighting measures

### 5.1 Extinguishing media

*Suitable extinguishing media*

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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## *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

### **5.2 Special hazards arising from the substance or mixture**

Not combustible.

Ambient fire may liberate hazardous vapours.

### **5.3 Advice for firefighters**

#### *Special protective equipment for firefighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### *Further information*

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## **SECTION 6. Accidental release measures**

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

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

### **6.2 Environmental precautions**

Do not let product enter drains.

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

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® OH<sup>-</sup>, Merck Art. No. 101596). Dispose of properly. Clean up affected area.

### **6.4 Reference to other sections**

Indications about waste treatment see section 13.

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## **SECTION 7. Handling and storage**

### **7.1 Precautions for safe handling**

#### *Advice on safe handling*

Observe label precautions.

#### *Hygiene measures*

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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

#### *Requirements for storage areas and containers*

No metal containers.

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## *Storage conditions*

Tightly closed.

Recommended storage temperature see product label.

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

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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## **SECTION 8. Exposure controls/personal protection**

### **8.1 Control parameters**

Contains no substances with occupational exposure limit values.

#### **Derived No Effect Level (DNEL)**

*sodium hydroxide (1310-73-2)*

Worker DNEL, longterm	Local effects	inhalation	1 mg/m <sup>3</sup>
Consumer DNEL, longterm	Local effects	inhalation	1 mg/m <sup>3</sup>

#### **Predicted No Effect Concentration (PNEC)**

*sodium hydroxide (1310-73-2)*

PNEC no data available

### **8.2 Exposure controls**

#### **Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

#### **Individual protection measures**

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

##### *Eye/face protection*

Tightly fitting safety goggles

##### *Hand protection*

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatrill® L (full contact), KCL 741 Dermatrill® L (splash contact).

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This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. 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](http://www.kcl.de)).

*Other protective equipment*  
protective clothing

*Respiratory protection*  
required when vapours/aerosols are generated.  
Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances  
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.  
These measures have to be properly documented.

## **Environmental exposure controls**

Do not let product enter drains.

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## **SECTION 9. Physical and chemical properties**

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

Form	liquid
Colour	colourless
Odour	odourless
Odour Threshold	Not applicable
pH	ca. 13 at 20 °C
Melting point	No information available.
Boiling point	No information available.
Flash point	Not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapour pressure	No information available.
Relative vapour density	No information available.

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Density	ca.1,20 g/cm <sup>3</sup> at 20 °C
Relative density	No information available.
Water solubility	at 20 °C soluble
Partition coefficient: n-octanol/water	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none

## 9.2 Other data

Corrosion	May be corrosive to metals.
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## SECTION 10. Stability and reactivity

### 10.1 Reactivity

See section 10.3

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with:

Metals, Light metals

Possible formation of:

Hydrogen

Violent reactions possible with:

Nitriles, ammonium compounds, Cyanides, magnesium, organic nitro compounds, organic combustible substances, phenols, powdered alkaline earth metals, acids

### 10.4 Conditions to avoid

no information available

### 10.5 Incompatible materials

Aluminium, various plastics, brass, Metals, metal alloys, Zinc, Tin, Light metals, glass, quartzes/silicate ceramics, animal/vegetable tissues  
Metals

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## 10.6 Hazardous decomposition products

in the event of fire: See section 5.

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## SECTION 11. Toxicological information

### 11.1 Information on toxicological effects

#### Mixture

*Acute oral toxicity*

Acute toxicity estimate: > 2.000 mg/kg

Calculation method

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

*Acute inhalation toxicity*

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

*Acute dermal toxicity*

This information is not available.

*Skin irritation*

Necrosis

Mixture causes burns.

*Eye irritation*

Risk of blindness!

Mixture causes serious eye damage.

Necrosis

*Sensitisation*

This information is not available.

*Germ cell mutagenicity*

This information is not available.

*Carcinogenicity*

This information is not available.

*Reproductive toxicity*

This information is not available.

*Teratogenicity*

This information is not available.

*Specific target organ toxicity - single exposure*

This information is not available.

*Specific target organ toxicity - repeated exposure*

This information is not available.

*Aspiration hazard*

This information is not available.

### 11.2 Further information

After absorption:



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Systemic effects:  
Cough, Shortness of breath, collapse, death  
Other dangerous properties can not be excluded.  
Handle in accordance with good industrial hygiene and safety practice.

## Components

### *Tetrasodium (1-hydroxyethylidene)bisphosphonate*

#### *Acute oral toxicity*

LD50 Rat: 940 mg/kg  
OECD Test Guideline 401

#### *Acute dermal toxicity*

LD50 Rabbit: > 5.000 mg/kg  
OECD Test Guideline 402

#### *Skin irritation*

Rabbit  
Result: No skin irritation  
OECD Test Guideline 404

#### *Eye irritation*

Rabbit  
Result: irritating  
OECD Test Guideline 405

### *sodium hydroxide*

#### *Skin irritation*

Rabbit  
Result: Causes burns.

(External MSDS)

#### *Eye irritation*

Rabbit  
Result: Irreversible effects on the eye

(ECHA)

#### *Sensitisation*

Patch test: human  
Result: negative

(ECHA)

#### *Germ cell mutagenicity*

##### *Genotoxicity in vitro*

Mutagenicity (mammal cell test): micronucleus.  
Result: negative

(Lit.)

#### Ames test

Result: negative

(IUCLID)

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## SECTION 12. Ecological information

### Mixture

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## 12.1 Toxicity

No information available.

## 12.2 Persistence and degradability

No information available.

## 12.3 Bioaccumulative potential

No information available.

## 12.4 Mobility in soil

No information available.

## 12.5 Results of PBT and vPvB assessment

Substance(s) in the mixture do(es) not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII, or a PBT/vPvB assessment was not conducted.

## 12.6 Other adverse effects

*Additional ecological information*

Harmful effect due to pH shift. Death of fish possible. Does not cause biological oxygen deficit. Neutralisation possible in waste water treatment plants.  
Discharge into the environment must be avoided.

## Components

*Tetrasodium (1-hydroxyethylidene)bisphosphonate*

*Toxicity to fish*

flow-through test LC50 Oncorhynchus mykiss (rainbow trout): 195 mg/l; 96 h

Analytical monitoring: yes

OECD Test Guideline 204

The value is given in analogy to the following substances: 1-hydroxyethane-1,1-diphosphonic acid

*Toxicity to daphnia and other aquatic invertebrates*

static test EC50 Daphnia magna (Water flea): 527 mg/l; 48 h

OECD Test Guideline 202

The value is given in analogy to the following substances: 1-hydroxyethane-1,1-diphosphonic acid

*Toxicity to fish (Chronic toxicity)*

flow-through test NOEC Oncorhynchus mykiss (rainbow trout): 60 mg/l; 14 d

Analytical monitoring: yes

OECD Test Guideline 204

The value is given in analogy to the following substances: 1-hydroxyethane-1,1-diphosphonic acid

*Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)*

semi-static test NOEC Daphnia magna (Water flea): 6,75 mg/l; 28 d

US-EPA

The value is given in analogy to the following substances: 1-hydroxyethane-1,1-diphosphonic acid

*Biodegradability*

; 5 d; aerobic Biochemical oxygen demand within 5 days

OECD Test Guideline 301D

The value is given in analogy to the following substances:

Not readily biodegradable. 1-hydroxyethane-1,1-diphosphonic acid

*Partition coefficient: n-octanol/water*

log Pow: -3 (23 °C)

OECD Test Guideline 107

Bioaccumulation is not expected.

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## *sodium hydroxide*

### *Toxicity to fish*

LC50 *Gambusia affinis* (Mosquito fish): 125 mg/l; 96 h  
(External MSDS)

### *Toxicity to daphnia and other aquatic invertebrates*

EC50 *Ceriodaphnia* (water flea): 40,4 mg/l; 48 h  
(ECHA)

### *Toxicity to bacteria*

EC50 *Photobacterium phosphoreum*: 22 mg/l; 15 min  
(External MSDS)

### *Biodegradability*

The methods for determining the biological degradability are not applicable to inorganic substances.

PBT/vPvB: Not applicable for inorganic substances

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## SECTION 13. Disposal considerations

### *Waste treatment methods*

Notice Directive on waste 2008/98/EC.

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14. Transport information

### Land transport (ADR/RID)

<b>14.1 UN number</b>	UN 1824
<b>14.2 Proper shipping name</b>	SODIUM HYDROXIDE SOLUTION
<b>14.3 Class</b>	8
<b>14.4 Packing group</b>	II
<b>14.5 Environmentally hazardous</b>	--
<b>14.6 Special precautions for user</b>	yes
Tunnel restriction code	E

### Inland waterway transport (ADN)

Not relevant

### Air transport (IATA)

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**14.1 UN number** UN 1824  
**14.2 Proper shipping name** SODIUM HYDROXIDE SOLUTION  
**14.3 Class** 8  
**14.4 Packing group** II  
**14.5 Environmentally hazardous** --  
**14.6 Special precautions for user** no

## Sea transport (IMDG)

**14.1 UN number** UN 1824  
**14.2 Proper shipping name** SODIUM HYDROXIDE SOLUTION  
**14.3 Class** 8  
**14.4 Packing group** II  
**14.5 Environmentally hazardous** --  
**14.6 Special precautions for user** yes

EmS F-A S-B

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**  
Not relevant

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## SECTION 15. Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### *EU regulations*

Major Accident Hazard SEVESO III  
Legislation Not applicable

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

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Substances of very high concern (SVHC)

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of  $\geq 0.1\%$  (w/w).

*National legislation*

Storage class 8B

## 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

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## SECTION 16. Other information

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

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.

### Training advice

Provide adequate information, instruction and training for operators.

### Labelling

*Hazard pictograms*



*Signal word*

Danger

*Hazard statements*

H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.

*Precautionary statements*

Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/physician.

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Contains: sodium hydroxide

## **Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

## **Regional representation**

A.J.VOUROS LTD. \* 14, Proponditos Street \* Strovolos Industrial Area \* 2033  
NICOSIA \* Cyprus \* Tel: +357 22 442 822

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

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