

## Safety Data Sheet

according to UK REACH Regulation

### Maleinsäurelösung 30 %

Revision date: 18.03.2024

Product code: 34747

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

### 1.1. Product identifier

Maleinsäurelösung 30 %

UFI: 5673-W30S-V00R-J0GX

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

#### Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Uses advised against

Do not use for private purposes (household).

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

|                         |                                  |                              |
|-------------------------|----------------------------------|------------------------------|
| Company name:           | AnalytiChem GmbH                 |                              |
|                         | ACD                              |                              |
| Street:                 | Stempelstraße 6                  |                              |
| Place:                  | D-47167 Duisburg                 |                              |
| Telephone:              | 0203/5194-0                      | Telefax: 0203/5194-290       |
| E-mail:                 | info@analytichem.de              |                              |
| Contact person:         | Abteilung Produktsicherheit      | Telephone: 0203/5194-107/117 |
| E-mail:                 | produktsicherheit@analytichem.de |                              |
| Internet:               | www.analytichem.de               |                              |
| Responsible Department: | Abteilung Produktsicherheit      |                              |

### 1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

### Further Information

inapplicable, this product is a mixture REACH registration number see section 3

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### GB CLP Regulation

Acute Tox. 4; H302

Skin Irrit. 2; H315

Eye Dam. 1; H318

Skin Sens. 1; H317

STOT SE 3; H335

Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

#### GB CLP Regulation

#### Hazard components for labelling

maleic acid

Signal word: Danger

#### Pictograms:



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**Hazard statements**

- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H335 May cause respiratory irritation.

**Precautionary statements**

- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P302+P352 IF ON SKIN: Wash with plenty of water.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 Immediately call a POISON CENTER.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P501 Dispose of contents/container to hazardous or special waste collection point.

**2.3. Other hazards**

No data available

**SECTION 3: Composition/information on ingredients**

**3.2. Mixtures**

**Chemical characterization**

Mixtures in aqueous solution

**Relevant ingredients**

| CAS No   | Chemical name   |              |                  | Quantity    |
|----------|---|--------------|------------------|-------------|
|          | EC No   | Index No     | REACH No         |             |
|          | Classification (GB CLP Regulation)  |              |                  |             |
| 110-16-7 | maleic acid   |              |                  | 30 - < 35 % |
|          | 203-742-5   | 607-095-00-3 | 01-2119488705-25 |             |
|          | Acute Tox. 4, Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, Skin Sens. 1, STOT SE 3; H312 H302 H315 H318 H317 H335 |              |                  |             |

Full text of H and EUH statements: see section 16.

**Specific Conc. Limits, M-factors and ATE**

| CAS No   | EC No   | Chemical name | Quantity    |
|----------|---|---------------|-------------|
|          | Specific Conc. Limits, M-factors and ATE  |               |             |
| 110-16-7 | 203-742-5   | maleic acid   | 30 - < 35 % |
|          | dermal: LD50 = 2620 mg/kg; oral: LD50 = 2870 mg/kg Skin Sens. 1; H317: >= 0,1 - 100 |               |             |

**Further Information**

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 = 0.1 % (w/w).

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

Self-protection of the first aider

**After inhalation**

- Provide fresh air.
- If breathing is irregular or stopped, administer artificial respiration.
- Call a physician immediately.

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#### **After contact with skin**

Wash immediately with: Water  
Take off immediately all contaminated clothing and wash it before reuse.  
Call a physician immediately.

#### **After contact with eyes**

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.  
Remove contact lenses, if present and easy to do. Continue rinsing.

#### **After ingestion**

Rinse mouth immediately and drink plenty of water.  
Do NOT induce vomiting. Do not allow a neutralisation agent to be drunk.  
Call a physician immediately.

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

Irritant  
Allergic reactions, Cough  
Dyspnoea, Risk of serious damage to eyes.  
Asthmatic complaints

#### **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**

Co-ordinate fire-fighting measures to the fire surroundings.

#### **Unsuitable extinguishing media**

No data available

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

Hazardous combustion products  
In case of fire may be liberated:  
Carbon dioxide  
Carbon monoxide

### **5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.  
Avoid contact with skin, eyes and clothes.

#### **Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

## SECTION 6: Accidental release measures

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

#### **General advice**

Do not breathe vapour/aerosol.

#### **For non-emergency personnel**

Provide adequate ventilation.  
Use personal protection equipment.  
Avoid contact with skin, eyes and clothes.  
Remove persons to safety.  
Emergency procedures  
Consult an expert  
Do not breathe dust/fume/gas/mist/vapours/spray.

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#### For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

#### **6.2. Environmental precautions**

No special environmental measures are necessary.

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

##### For containment

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Collect in closed and suitable containers for disposal.

##### For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

##### Other information

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

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

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

## SECTION 7: Handling and storage

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

#### Advice on safe handling

Read label before use.

Do not breathe vapour/aerosol.

Use personal protection equipment.

Handle and open container with care.

Provide adequate ventilation.

Avoid contact with skin, eyes and clothes.

Use extractor hood (laboratory).

#### Advice on protection against fire and explosion

Protect against: Radiant heat.

#### Advice on general occupational hygiene

Take off contaminated clothing.

Wash hands before breaks and after work.

When using do not eat or drink.

#### Further information on handling

Take off contaminated clothing and wash it before reuse.

Wash hands before breaks and after work.

Draw up and observe skin protection programme.

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

#### Requirements for storage rooms and vessels

Keep container tightly closed and dry.

#### Hints on joint storage

national regulations

#### Further information on storage conditions

Protect from sunlight. Store in a well-ventilated place.

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

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Laboratory chemicals

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**DNEL/DMEL values**

| CAS No                 | Substance   | Exposure route | Effect   | Value               |
|------------------------|-------------|----------------|----------|---------------------|
| 110-16-7               | maleic acid |                |          |                     |
| Worker DNEL, long-term |             | inhalation     | systemic | 3 mg/m <sup>3</sup> |
| Worker DNEL, acute     |             | inhalation     | systemic | 3 mg/m <sup>3</sup> |
| Worker DNEL, long-term |             | inhalation     | local    | 3 mg/m <sup>3</sup> |
| Worker DNEL, acute     |             | inhalation     | local    | 3 mg/m <sup>3</sup> |

**PNEC values**

| CAS No   | Substance   | Value       |
|--|-------------|-------------|
| 110-16-7   | maleic acid |             |
| Environmental compartment                        |             |             |
| Freshwater                                       |             | 0,1 mg/l    |
| Freshwater (intermittent releases)               |             | 0,428 mg/l  |
| Marine water                                     |             | 0,01 mg/l   |
| Freshwater sediment                              |             | 0,334 mg/kg |
| Marine sediment                                  |             | 0,033 mg/kg |
| Micro-organisms in sewage treatment plants (STP) |             | 44,6 mg/l   |
| Soil   |             | 0,042 mg/kg |

**8.2. Exposure controls**

**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Wear eye/face protection.

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Suitable examples are gloves of KCL GmbH, D-36124 Eichenzell, e-mail: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) with the following specification (test according to EN 374):

By long-term hand contact

Trade name/designation: KCL 741 Dermatril® L  
Recommended material: NBR (Nitrile rubber) 0,11 mm  
Wearing time with permanent contact: > 480 min

By short-term hand contact

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Trade name/designation: KCL 741 Dermatril® L  
 Recommended material: NBR (Nitrile rubber) 0,11 mm  
 Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. 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)).

#### Skin protection

Wear suitable protective clothing. Take off immediately all contaminated clothing.  
 Wash hands before breaks and after work.

#### Respiratory protection

Respiratory protection necessary at: aerosol or mist formation

#### Thermal hazards

No data available

#### Environmental exposure controls

Do not allow to enter into surface water or drains.

## SECTION 9: Physical and chemical properties

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

|   |                   |                          |
|---|-------------------|--------------------------|
| Physical state:   | Liquid            |                          |
| Colour:   | colourless        |                          |
| Odour:  | No data available |                          |
| Odour threshold:  | No data available |                          |
| Melting point/freezing point:                             |                   | No data available        |
| Boiling point or initial boiling point and boiling range: |                   | No data available        |
| Flammability:   |                   | No data available        |
| Lower explosion limits:                                   |                   | No data available        |
| Upper explosion limits:                                   |                   | No data available        |
| Flash point:  |                   | No data available        |
| Auto-ignition temperature:                                |                   | No data available        |
| Decomposition temperature:                                |                   | No data available        |
| pH-Value:   |                   | 1,3                      |
| Viscosity / kinematic:                                    |                   | No data available        |
| Water solubility:   |                   | No data available        |
| Solubility in other solvents                              |                   |                          |
| not determined  |                   |                          |
| Dissolution rate:   |                   | No data available        |
| Partition coefficient n-octanol/water:                    |                   | No data available        |
| Dispersion stability:                                     |                   | No data available        |
| Vapour pressure:  |                   | No data available        |
| Vapour pressure:  |                   | No data available        |
| Density:  |                   | 1,1058 g/cm <sup>3</sup> |
| Relative density:   |                   | No data available        |
| Bulk density:   |                   | No data available        |
| Relative vapour density:                                  |                   | No data available        |
| Particle characteristics:                                 |                   | No data available        |

### 9.2. Other information

#### Information with regard to physical hazard classes

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#### Explosive properties

No data available

#### Sustaining combustion:

No data available

#### Self-ignition temperature

Solid:

not determined

Gas:

not applicable

#### Oxidizing properties

Not oxidising.

#### Other safety characteristics

##### Evaporation rate:

No data available

##### Solvent separation test:

No data available

##### Solvent content:

No data available

##### Solid content:

No data available

##### Sublimation point:

No data available

##### Softening point:

No data available

##### Pour point:

No data available

##### No data available:

##### Viscosity / dynamic:

No data available

##### Flow time:

No data available

#### Further Information

No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No data available

### 10.2. Chemical stability

No data available

### 10.3. Possibility of hazardous reactions

Oxidising agent

Reducing agent

Strong alkali

Metal

Amines

### 10.4. Conditions to avoid

Heat

### 10.5. Incompatible materials

Metal

### 10.6. Hazardous decomposition products

In case of fire may be liberated:

Carbon dioxide

Carbon monoxide

#### Further information

No data available

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in GB CLP Regulation

#### Toxicokinetics, metabolism and distribution

There are no data available on the mixture itself.

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**Acute toxicity**

Harmful if swallowed.

**ATEmix calculated**

ATE (oral) 1667 mg/kg; ATE (dermal) 3667 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

| CAS No   | Chemical name  |                 |         |  |                    |
|----------|----------------|-----------------|---------|--|--------------------|
|          | Exposure route | Dose            | Species | Source                                   | Method             |
| 110-16-7 | maleic acid    |                 |         |  |                    |
|          | oral           | LD50 2870 mg/kg | Rat     | Study report (1977)                      | OECD Guideline 401 |
|          | dermal         | LD50 2620 mg/kg | Rabbit  | Toxicol. Appl. Pharmacol. 42: 417-424. ; | OECD Guideline 402 |

**Irritation and corrosivity**

Causes skin irritation.

Causes serious eye damage.

**Sensitising effects**

May cause an allergic skin reaction. (maleic acid)

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**STOT-single exposure**

May cause respiratory irritation. (maleic acid)

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Information on likely routes of exposure**

There are no data available on the mixture itself.

**Specific effects in experiment on an animal**

There are no data available on the mixture itself.

**Additional information on tests**

There are no data available on the mixture itself.

**Practical experience**

There are no data available on the mixture itself.

**11.2. Information on other hazards**

**Endocrine disrupting properties**

There are no data available on the mixture itself.

**Other information**

There are no data available on the mixture itself.

**Further information**

There are no data available on the mixture itself.

**SECTION 12: Ecological information**

**12.1. Toxicity**

Based on available data, the classification criteria are not met.



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| CAS No   | Chemical name            |               |           |         |                                    |  |
|----------|--------------------------|---------------|-----------|---------|------------------------------------|--|
|          | Aquatic toxicity         | Dose          | [h]   [d] | Species | Source                             | Method   |
| 110-16-7 | maleic acid              |               |           |         |                                    |  |
|          | Acute algae toxicity     | ErC50<br>mg/l | 74,35     | 72 h    | Pseudokirchneriella<br>subcapitata | Study report<br>(2010)<br>OECD Guideline<br>201                      |
|          | Acute crustacea toxicity | EC50<br>mg/l  | 42,81     | 48 h    | Daphnia magna                      | Study report<br>(2010)<br>OECD Guideline<br>202                      |
|          | Crustacea toxicity       | NOEC          | 10 mg/l   | 21 d    | Daphnia magna                      | Publication (1988)<br>other: Prolonged<br>toxicity test<br>according |

#### **12.2. Persistence and degradability**

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

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

No indication of bioaccumulation potential.

#### **Partition coefficient n-octanol/water**

| CAS No   | Chemical name | Log Pow |
|----------|---------------|---------|
| 110-16-7 | maleic acid   | -1,3    |

#### **12.4. Mobility in soil**

No data available

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

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

#### **12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

#### **12.7. Other adverse effects**

Do not empty into drains.

#### **Further information**

Discharge into the environment must be avoided.

### SECTION 13: Disposal considerations

#### **13.1. Waste treatment methods**

##### **Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Send to a physico-chemical treatment facility under observation of official regulations. Do not empty into drains.

##### **Contaminated packaging**

Handle contaminated packages in the same way as the substance itself.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

### SECTION 14: Transport information

#### **Land transport (ADR/RID)**

##### **14.1. UN number or ID number:**

No dangerous good in sense of this transport regulation.

##### **14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

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

No dangerous good in sense of this transport regulation.

##### **14.4. Packing group:**

No dangerous good in sense of this transport regulation.

#### **Inland waterways transport (ADN)**

##### **14.1. UN number or ID number:**

No dangerous good in sense of this transport regulation.

##### **14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

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**14.3. Transport hazard class(es):** No dangerous good in sense of this transport regulation.

**14.4. Packing group:** No dangerous good in sense of this transport regulation.

#### Marine transport (IMDG)

**14.1. UN number or ID number:** No dangerous good in sense of this transport regulation.

**14.2. UN proper shipping name:** No dangerous good in sense of this transport regulation.

**14.3. Transport hazard class(es):** No dangerous good in sense of this transport regulation.

**14.4. Packing group:** No dangerous good in sense of this transport regulation.

#### Air transport (ICAO-TI/IATA-DGR)

**14.1. UN number or ID number:** No dangerous good in sense of this transport regulation.

**14.2. UN proper shipping name:** No dangerous good in sense of this transport regulation.

**14.3. Transport hazard class(es):** No dangerous good in sense of this transport regulation.

**14.4. Packing group:** No dangerous good in sense of this transport regulation.

#### 14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

#### 14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

#### 14.7. Maritime transport in bulk according to IMO instruments

not applicable

#### Other applicable information

Hazchem code: -

### SECTION 15: Regulatory information

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

##### EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3

Information according to Directive 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

##### National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D): 1 - slightly hazardous to water

### SECTION 16: Other information

#### Abbreviations and acronyms

Acute Tox: Acute toxicity

Skin Irrit: Skin irritation

Eye Dam: Eye damage

Skin Sens: Skin sensitisation

STOT SE: Specific target organ toxicity - single exposure

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

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**Classification for mixtures and used evaluation method according to GB CLP Regulation**

| Classification      | Classification procedure |
|---------------------|--------------------------|
| Acute Tox. 4; H302  | Calculation method       |
| Skin Irrit. 2; H315 | Calculation method       |
| Eye Dam. 1; H318    | Calculation method       |
| Skin Sens. 1; H317  | Calculation method       |
| STOT SE 3; H335     | Calculation method       |

**Relevant H and EUH statements (number and full text)**

|      |                                      |
|------|--------------------------------------|
| H302 | Harmful if swallowed.                |
| H312 | Harmful in contact with skin.        |
| H315 | Causes skin irritation.              |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage.           |
| H335 | May cause respiratory irritation.    |

**Further Information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. Provide appropriate information, instructions and training to users

*(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*