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

1.1. Product identifier
Trade name/designation: MEIKOLON FR 81
Additional information: Restricted to professional users.

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture: Washing and cleaning products

1.3. Details of the supplier of the safety data sheet
Supplier (manufacturer/importer/only representative/downstream user/distributor):
MEIKO Maschinenbau GmbH&Co.KG
Englerstrasse 3
77652 Offenburg
Germany
Telephone: +49(0)781/203-0
E-mail: meikolon@meiko.de
Website: www.meiko.de

1.4. Emergency telephone number
Vergiftungs-Informations-Zentrale Freiburg, 24h: +49(0)76119240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 [CLP]-:

<table>
<thead>
<tr>
<th>Hazard classes and hazard categories</th>
<th>Hazard statements</th>
<th>Classification procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrosive to metals (Met. Corr. 1)</td>
<td>H290: May be corrosive to metals.</td>
<td></td>
</tr>
<tr>
<td>Skin corrosion/irritation (Skin Corr. 1A)</td>
<td>H314: Causes severe skin burns and eye damage.</td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/eye irritation (Eye Dam. 1)</td>
<td>H318: Causes serious eye damage.</td>
<td></td>
</tr>
</tbody>
</table>

2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]
Hazard pictograms:

GHS05
Corrosion

Signal word: Danger
Hazard components for labelling:
potassium hydroxide

hazard statements for physical hazards
H290 May be corrosive to metals.
hazard statements for health hazards
H314 Causes severe skin burns and eye damage.

Supplemental hazard information:

Precautionary Statements Prevention
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary Statements Response
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
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/doctor/....

2.3. Other hazards
No data available

SECTION 3: Composition / information on ingredients

3.2. Mixtures
Hazardous ingredients / Hazardous impurities / Stabilisers:

<table>
<thead>
<tr>
<th>product identifiers</th>
<th>Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.: 1310-58-3</td>
<td>potassium hydroxide Acute Tox. 4, Skin Corr. 1A</td>
<td>5 – 20 weight-%</td>
</tr>
<tr>
<td>EC No.: 215-181-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INDEX No.: 019-002-00-8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REACH No.: 01-2119487136-33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures
General information:
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. Remove contaminated, saturated clothing. If unconscious place in recovery position and seek medical advice. Do not leave affected person unattended. Warning First aider: Pay attention to self-protection!

Following inhalation:
Provide fresh air. In case of respiratory tract irritation, consult a physician.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing. Get immediate medical advice/attention.

After eye contact:
In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion:
Rinse mouth. Let water be drunken in little sips (dilution effect). Get medical advice/attention if you feel unwell. Rinse mouth immediately and drink plenty of water-. Do NOT induce vomiting. Get immediate medical advice/attention.

Self-protection of the first aider:
Use personal protection equipment.

4.2. Most important symptoms and effects, both acute and delayed
Skin corrosion/irritation
MEIKOLON FR 81

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

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media:
Co-ordinate fire-fighting measures to the fire surroundings.
Water
Carbon dioxide (CO2)
Extinguishing powder

Unsuitable extinguishing media:
Strong water jet

5.2. Special hazards arising from the substance or mixture
The product itself does not burn.
Hazardous combustion products:
Carbon monoxide
Carbon dioxide (CO2)

5.3. Advice for firefighters
Wear a self-contained breathing apparatus and chemical protective clothing.

5.4. 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
6.1.1. For non-emergency personnel
Personal precautions:
Remove persons to safety.
Protective equipment:
Wear protective gloves/protective clothing/eye protection/face protection.

6.1.2. For emergency responders
Personal protection equipment:
Personal protection equipment: see section 8

6.2. Environmental precautions
Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up
For containment:
Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).
For cleaning up:
Water

6.4. Reference to other sections
Safe handling: see section 7 Personal protection equipment: see section 8 Disposal: see section 13

6.5. Additional information
Use appropriate container to avoid environmental contamination.
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006 (REACH)

Revision date: 17 Jun 2020
Print date: 17 Jun 2020
Version: 10

MEIKOLON FR 81

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures
Advises on safe handling:
Wear personal protection equipment (refer to section 8).

Fire prevent measures:
No special measures are necessary.

Advises on general occupational hygiene
When using do not eat, drink or smoke. Avoid contact with eyes and skin.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:
Keep container tightly closed.

Storage class: 8B - Non-combustible corrosive substances

7.3. Specific end use(s)
No data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

<table>
<thead>
<tr>
<th>Limit value type (country of origin)</th>
<th>Substance name</th>
<th>① long-term occupational exposure limit value</th>
<th>② short-term occupational exposure limit value</th>
<th>③ Instantaneous value</th>
<th>④ Monitoring and observation processes</th>
<th>⑤ Remark</th>
<th>②</th>
<th>①</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL (GB)</td>
<td>potassium hydroxide</td>
<td>2 mg/m³</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.1.2. Biological limit values
No data available

8.1.3. DNEL-/PNEC-values

<table>
<thead>
<tr>
<th>Substance name</th>
<th>DNEL value</th>
<th>① DNEL type</th>
<th>② Exposure route</th>
</tr>
</thead>
<tbody>
<tr>
<td>potassium hydroxide</td>
<td>1 mg/m³</td>
<td>① DNEL worker</td>
<td>② inhalative, long-term, local</td>
</tr>
<tr>
<td>CAS No.: 1310-58-3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.2. Exposure controls

8.2.1. Appropriate engineering controls
No data available

8.2.2. Personal protection equipment

Eye/face protection:
Eye glasses with side protection DIN EN 166

Skin protection:
Tested protective gloves must be worn EN ISO 374 Suitable material: NBR (Nitrile rubber) >0,2mm Breakthrough time (maximum wearing time) 480min In the case of wanting to use the gloves again, clean them before taking off and air them well.
MEIKOLON FR 81

8.2.3. Environmental exposure controls
No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance
- Physical state: Liquid
- Colour: colourless
- Odour: odourless

Safety relevant basis data

<table>
<thead>
<tr>
<th>parameter</th>
<th>at °C</th>
<th>Method</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>14</td>
<td>20 °C</td>
<td></td>
</tr>
<tr>
<td>Melting point</td>
<td></td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Freezing point</td>
<td></td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td></td>
<td>&gt; 90 °C</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td></td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td></td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td></td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td></td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td></td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Vapour pressure</td>
<td></td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Vapour density</td>
<td></td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>≈ 1.2 g/cm³</td>
<td>20 °C</td>
<td></td>
</tr>
<tr>
<td>Bulk density</td>
<td></td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td></td>
<td>completely miscible</td>
<td>20 °C</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td></td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td></td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td></td>
<td>not determined</td>
<td>40 °C</td>
</tr>
</tbody>
</table>

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
May be corrosive to metals. The product itself does not burn.

10.2. Chemical stability
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions
No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid
Slowly corrodes aluminium and zink under hydrogen evolution.

10.5. Incompatible materials
Exothermic reaction with: Acid

*10.6. Hazardous decomposition products
Thermal decomposition can lead to the escape of irritating gases and vapours.
MEIKOLON FR 81

SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Substance name</th>
<th>Toxicological information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1310-58-3</td>
<td>potassium hydroxide</td>
<td><strong>LD\textsubscript{50} oral:</strong>&lt;br&gt;=273 mg/kg (Rat)</td>
</tr>
</tbody>
</table>

**Acute oral toxicity:**<br>The classification criteria for this hazard class are not met by definition.

**Acute dermal toxicity:**<br>The classification criteria for this hazard class are not met by definition.

**Acute inhalation toxicity:**<br>The classification criteria for this hazard class are not met by definition.

**Skin corrosion/irritation:**<br>Causes severe burns.

**Serious eye damage/irritation:**<br>Causes serious eye damage.

**Respiratory or skin sensitisation:**<br>The classification criteria for this hazard class are not met by definition.

**Germ cell mutagenicity:**<br>The classification criteria for this hazard class are not met by definition.

**Carcinogenicity:**<br>The classification criteria for this hazard class are not met by definition.

**Reproductive toxicity:**<br>The classification criteria for this hazard class are not met by definition.

**STOT-single exposure:**<br>The classification criteria for this hazard class are not met by definition.

**STOT-repeated exposure:**<br>The classification criteria for this hazard class are not met by definition.

**Aspiration hazard:**<br>The classification criteria for this hazard class are not met by definition.

**Additional information:**<br>No data available

SECTION 12: Ecological information

12.1. Toxicity

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Substance name</th>
<th>Toxicological information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1310-58-3</td>
<td>potassium hydroxide</td>
<td><strong>LC\textsubscript{50}:</strong>&lt;br&gt;=80 mg/l 4 d (fish-, Gambusia affinis (Mosquito fish-))&lt;br&gt;<strong>NOEC:</strong>&lt;br&gt;=56 mg/l 4 d (fish-, Gambusia affinis (Mosquito fish-))</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Substance name</th>
<th>Biodegradation</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1310-58-3</td>
<td>potassium hydroxide</td>
<td>not applicable</td>
<td></td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Substance name</th>
<th>Log \textsubscript{K\textsubscript{OW}}</th>
<th>Bioconcentration factor (BCF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1310-58-3</td>
<td>potassium hydroxide</td>
<td>-3.88</td>
<td></td>
</tr>
</tbody>
</table>

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 REACH, annex XIII.

### 12.6. Other adverse effects
No data available

#### SECTION 13: Disposal considerations

**13.1. Waste treatment methods**

**13.1.1. Product/Packaging disposal**

Waste codes/waste designations according to EWC/AVV

**Waste code product:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 01 29 *</td>
<td>Detergents containing hazardous substances</td>
</tr>
</tbody>
</table>

*: Evidence for disposal must be provided.

**Waste code packaging:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 01 10 *</td>
<td>packaging containing residues of or contaminated by dangerous substances</td>
</tr>
</tbody>
</table>

*: Evidence for disposal must be provided.

**Waste treatment options**

**Appropriate disposal / Product:**

Dispose of waste according to applicable legislation. Consult the appropriate local waste disposal expert about waste disposal.

**Appropriate disposal / Package:**

Completely emptied packages can be recycled.

#### SECTION 14: Transport information

<table>
<thead>
<tr>
<th>Land transport (ADR/RID)</th>
<th>Inland waterway craft (ADN)</th>
<th>Sea transport (IMDG)</th>
<th>Air transport (ICAO-TI / IATA-DGR)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**14.1. UN-No.**

<table>
<thead>
<tr>
<th>Land transport (ADR/RID)</th>
<th>Inland waterway craft (ADN)</th>
<th>Sea transport (IMDG)</th>
<th>Air transport (ICAO-TI / IATA-DGR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN 1814</td>
<td>UN 1814</td>
<td>UN 1814</td>
<td>UN 1814</td>
</tr>
</tbody>
</table>

**14.2. UN proper shipping name**

POTASSIUM HYDROXIDE SOLUTION

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

<table>
<thead>
<tr>
<th>Land transport (ADR/RID)</th>
<th>Inland waterway craft (ADN)</th>
<th>Sea transport (IMDG)</th>
<th>Air transport (ICAO-TI / IATA-DGR)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="8" /></td>
<td><img src="image" alt="8" /></td>
<td><img src="image" alt="8" /></td>
<td><img src="image" alt="8" /></td>
</tr>
</tbody>
</table>

**14.4. Packing group**

<table>
<thead>
<tr>
<th>Land transport (ADR/RID)</th>
<th>Inland waterway craft (ADN)</th>
<th>Sea transport (IMDG)</th>
<th>Air transport (ICAO-TI / IATA-DGR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
</tr>
</tbody>
</table>

**14.5. Environmental hazards**

<table>
<thead>
<tr>
<th>Land transport (ADR/RID)</th>
<th>Inland waterway craft (ADN)</th>
<th>Sea transport (IMDG)</th>
<th>Air transport (ICAO-TI / IATA-DGR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
MEIKOLON FR 81

14.6. Special precautions for user

<table>
<thead>
<tr>
<th>Transport Mode</th>
<th>Special Provisions</th>
<th>Limited Quantity (LQ):</th>
<th>Excepted Quantities (EQ):</th>
<th>Hazard Identification Number (Keimler No.):</th>
<th>Classification Code:</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land transport (ADR/RID)</td>
<td>Special provisions:</td>
<td>1 L</td>
<td>E2</td>
<td>80</td>
<td>C5</td>
<td></td>
</tr>
<tr>
<td>Inland waterway craft (ADN)</td>
<td>Limited quantity</td>
<td>1 L</td>
<td>E2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea transport (IMDG)</td>
<td>Limited quantity</td>
<td>1 L</td>
<td>E2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air transport (ICAO-TI / IATA-DGR)</td>
<td>Limited quantity</td>
<td>1 L</td>
<td>E2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No data available

SECTION 15: Regulatory information

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

15.1.1. EU legislation

Other regulations (EU):
- Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]: This product is not assigned to a hazard category.
- Volatile organic compounds (VOC) content in percent by weight: 0%
  - 5-15% phosphates
  - <5% phosphonates

15.1.2. National regulations
No data available

15.2. Chemical Safety Assessment
Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

16.1. Indication of changes

1.1. Product identifier
8.1. Control parameters
10.6. Hazardous decomposition products
14.6. Special precautions for user
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

16.2. Abbreviations and acronyms
No data available

16.3. Key literature references and sources for data
No data available
16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Classification according to Regulation (EC) No 1272/2008 [CLP]-:

<table>
<thead>
<tr>
<th>Hazard classes and hazard categories</th>
<th>Hazard statements</th>
<th>Classification procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrosive to metals (Met. Corr. 1)</td>
<td>H290: May be corrosive to metals.</td>
<td></td>
</tr>
<tr>
<td>Skin corrosion/irritation (Skin Corr. 1A)</td>
<td>H314: Causes severe skin burns and eye damage.</td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/eye irritation (Eye Dam. 1)</td>
<td>H318: Causes serious eye damage.</td>
<td></td>
</tr>
</tbody>
</table>

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

<table>
<thead>
<tr>
<th>Hazard statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>H302 Harmful if swallowed.</td>
</tr>
<tr>
<td>H314 Causes severe skin burns and eye damage.</td>
</tr>
</tbody>
</table>

16.6. Training advice

No data available

16.7. Additional 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.

* Data changed compared with the previous version