Product information na 2 (liquid neutralisation agent)

Use
na 2 is an liquid neutralisation agent on a sodium hydroxide basis. It is recommended for cleaning operations to neutralise the acid cleaning agents and detergents.

Features
Appearance: clear, colorless liquid
physical state: fluent
pH-value: 14 (bei 20°C)
density: 1.480 kg/m³ (at 20°C)
water solubility: 999 g/l

These data are to be seen as typical values and are not to be considered as specifications.

Dosing
na 2 may be fed directly from the drum by a suitable chemical feed system. na 2 should be dosed directly into the cooling water system at a location where good distribution can be assured. To neutralise an acid solution, na 2 is added in portions until the requested pH-value is reached (usually pH 6.5 – 9.5). The dosing rate depends on the type of system and operational parameters. Typical system concentration is between 1% - 1.5% of the system volume.

Attention:
In case it is added too fast this may lead to an extreme exothermic reaction!

Never mix up acid and alkaline concentrates with each other. This may lead to spontaneous exothermic reactions!

Handling precautions
Wear suitable protective gloves and safety goggles. Avoid eye or skin contact. In case of contact with eyes and skin immediately flush with plenty of water. After eye contact seek medical advice. Take off polluted clothes immediately.

In case of spillage, absorb with sand or other absorbent materials and sweep up. Then flush the area with plenty of water. Before use review the Material Safety Data Sheet for additional information.

Important Information
Every chemical product will be delivered with a Material Safety Data Sheet. Material Safety Data Sheets contain health and safety information relevant for your development of appropriate product handling procedures to protect your employees and customers. Our Material Safety Data Sheets should be read and understood by all of your supervisory personal and employees before using our products in your facilities.

Shelf life
2 years in originally sealed containers.
6 months in opened containers.
Storage conditions: cool (5°C – 20°C), frost-free, dark and dry.

Packaging
na 2 is packed in 10kg drums, 30kg drums and 200kg drums.

All statements, information and data presented herein are believed to be accurate and reliable but are not to be taken as a guarantee, express warranty or implied warranty of merchantability of fitness for a particular purpose, or representation, express or implied, for which seller assumes legal responsibility, and they are offered solely for your consideration, investigation and verification. Statements or suggestions concerning possible use of this product are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent.
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. product identifiers

Identification of the substance or mixture

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

1.3. Details of the supplier of the safety data sheet

supplier (manufacturer/importer/downstream user/distributor)
gwk Gesellschaft Wärme Kältetechnik mbH
Scherl 10
D-58540 Meinerzhagen
Telephone: +49 2354 7060 0
Telefax: +49 2354 7060 156

E-mail info@gwk.com

1.4. Emergency telephone number

Emergency telephone number Poison Centre Berlin +49 (0) 30 30686700

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]
The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].
Met. Corr. 1 / H290 Corrosive to metals May be corrosive to metals.
Skin Corr. 1A / H314 skin corrosion/irritation Causes severe skin burns and eye damage.

2.2. Label elements

The product is classified and labelled according to EC directives or corresponding national laws.

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms

Danger

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

Precautionary statements

P280 Wear protective gloves and eye/face protection.
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.
P501 Dispose of contents/container to industrial incineration plant.

contains:
sodium hydroxide

Supplemental Hazard information (EU)
not applicable

2.3. Other hazards

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Product description / chemical characterization

Description

Hazardous ingredients

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

<table>
<thead>
<tr>
<th>EC No.</th>
<th>REACH No.</th>
<th>Chemical name</th>
<th>Wt %</th>
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</table>
**SECTION 4: First aid measures**

4.1. **Description of first aid measures**

**General information**
In all cases of doubt, or when symptoms persist, seek medical advice.
In case of unconsciousness give nothing by mouth, place in recovery position and seek medical advice.

**In case of inhalation**
Remove casualty to fresh air and keep warm and at rest.
In case of irregular breathing or respiratory arrest provide artificial respiration.

**Following skin contact**
Take off immediately all contaminated clothing.
Wash immediately with: Water
Medical treatment necessary.

**After eye contact**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Seek medical advice immediately.

**After ingestion**
If swallowed, rinse mouth with water (only if the person is conscious).
Let water be drunken in little sips (dilution effect). Seek medical advice immediately.
Keep victim calm.
Do NOT induce vomiting.

**Self-protection of the first aider**
First aider: Pay attention to self-protection!

4.2. **Most important symptoms and effects, both acute and delayed**
In all cases of doubt, or when symptoms persist, seek medical advice.

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

**Treatment**
Treat symptomatically.

**SECTION 5: Firefighting measures**

5.1. **Extinguishing media**

**Suitable extinguishing media:**
carbon dioxide, Powder, spray mist, (water), Foam

**Extinguishing media which must not be used for safety reasons:**
strong water jet

5.2. **Special hazards arising from the substance or mixture**
Inhaling hazardous decomposing products can cause serious health damage.

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

**Additional information**
Cool closed containers that are near the source of the fire. Do not allow water used to extinguish fire to enter drains, ground or waterways.

**SECTION 6: Accidental release measures**

6.1. **Personal precautions, protective equipment and emergency procedures**
Use personal protection equipment. Provide adequate ventilation. Do not breathe vapours.

6.2. **Environmental precautions**
Do not allow to enter into surface water or drains. If the product contaminates lakes, rivers or sewages, inform competent authorities in accordance with local regulations.

6.3. **Methods and material for containment and cleaning up**
Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).

6.4. **Reference to other sections**
Observe protective provisions (see section 7 and 8).

### SECTION 7: Handling and storage

7.1. **Precautions for safe handling**
**Advises on safe handling**
Avoid contact with eyes and skin. If handled uncovered, arrangements with local exhaust ventilation should be used if possible. Handle and open container with care. When using do not eat, drink or smoke. Avoid the formation of aerosol.

7.2. **Conditions for safe storage, including any incompatibilities**
**Packaging materials:**
Unsuitable container/equipment material: Metal

**Requirements for storage rooms and vessels**
Keep container tightly closed and in a well-ventilated place.

**Hints on joint storage**
Do not store together with: Acid

**Further information on storage conditions**
Take care of instructions on label.

7.3. **Specific end use(s)**
Observe technical data sheet. Observe instructions for use.

### SECTION 8: Exposure controls/personal protection

8.1. **Control parameters**
**Occupational exposure limit values**
not applicable

**DNEL:**
sodium hydroxide
DNEL long-term inhalative (local), Workers: 1 mg/m³
DNEL acute inhalative (local), Consumer: 1 mg/m³

8.2. **Exposure controls**
Provide good ventilation. This can be achieved with local or room suction.

**Occupational exposure controls**

**Respiratory protection**
Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190). Use only respiratory protection equipment with CE-symbol including four digit test number.

**Hand protection**
For prolonged or repeated handling the following glove material must be used: NBR (Nitrile rubber)
Thickness of the glove material > 0,4 mm ; Breakthrough time (maximum wearing time) > 480 min.
Observe the instructions and details for use, storage, maintenance and replacement provided by the protective glove manufacturer. Penetration time of glove material depending on intensity and duration of exposure to skin. Recommended glove articles DIN EN 374
Barrier creams can help protecting exposed skin areas. In no case should they be used after contact.

**Eye protection**
Wear closely fitting protective glasses in case of splashes.

**Protective clothing**

**Protective measures**
After contact clean skin thoroughly with water and soap or use appropriate cleanser.
Environmental exposure controls
Do not allow to enter into surface water or drains. See chapter 7. No additional measures necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance:
Physical state: Liquid
Colour: colourless
Odour: odourless
Odour threshold: not applicable
pH at 20 °C: 14
Melting point/freezing point: not applicable
Initial boiling point and boiling range: 100 °C
Flash point: not applicable
Evaporation rate: not applicable
Flammability (solid, gas):
Burning time (s): not applicable
Upper/lower flammability or explosive limits:
Lower explosion limit: not applicable
Upper explosion limit: not applicable
Vapour pressure at 20 °C: 11 mbar
Vapour density: not applicable
Relative density:
Density at 20 °C: 1,48 g/cm³
Solubility(ies):
Water solubility (g/L) at 20 °C: 999
Partition coefficient: n-octanol/water: see section 12
Auto-ignition temperature: not applicable
Decomposition temperature: not applicable
Viscosity at 20 °C: < 20 mPa·s

Explosive properties: not applicable
Oxidising properties: not applicable

9.2. Other information

Solid content (%): 45,00 Wt %
solvent content:
Organic solvents: 0 Wt %
Water: 0 Wt %

SECTION 10: Stability and reactivity

10.1. Reactivity

10.2. Chemical stability
Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to section 7.

10.3. Possibility of hazardous reactions
Keep away from strong acids, strong bases and strong oxidizing agents to avoid exothermic reactions.

10.4. Conditions to avoid
Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to section 7.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Hazardous decomposition byproducts may form with exposure to high temperatures. e.g.: Hydrogen
SECTION 11: Toxicological information

Classification according to Regulation (EC) No 1272/2008 [CLP]
No data on preparation itself available.

11.1. Information on toxicological effects

Acute toxicity

sodium hydroxide
oral, LDLo:; Rat: 500 mg/kg

skin corrosion/irritation; Serious eye damage/eye irritation

Sodium hydroxide solution 45%

Skin (4 h)
sodium hydroxide
Skin
eyes
Causes severe skin burns and eye damage.

Respiratory or skin sensitisation
Toxicological data are not available.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
Toxicological data are not available.

Specific target organ toxicity
Toxicological data are not available.

Aspiration hazard
Toxicological data are not available.

Practical experience/human evidence

Other observations:

Overall Assessment on CMR properties
The ingredients in this mixture do not meet the criteria for classification as CMR category 1A or 1B according to CLP.

Remark
There is no information available on the preparation itself.

SECTION 12: Ecological information

overall evaluation
Classification according to Regulation (EC) No 1272/2008 [CLP]

Do not allow to enter into surface water or drains.

12.1. Toxicity

Sodium hydroxide solution 45%

Fish toxicity, LC50, Gambusia affinis (Mosquito fish): 125 mg/l (96 h)

Acute (short-term) daphnia toxicity, EC50, Daphnia magna (Big water flea): 76 mg/l (24 h)

sodium hydroxide

Fish toxicity, LC50, Oncorhynchus mykiss (Rainbow trout): 45.4 mg/l (96 h)

Daphnia toxicity, EC50, Daphnia magna (Big water flea): 40.4 mg/l (48 h)

Acute (short-term) fish toxicity, LC50; Lepomis macrochirus (Bluegill): 99 mg/l (48 h)

Long-term Ecotoxicity
Toxicological data are not available.

12.2. Persistence and degradability
Toxicological data are not available.

12.3. Bioaccumulative potential
sodium hydroxide

Partition coefficient: n-octanol/water:

Bioconcentration factor (BCF)
Toxicological data are not available.
12.4. Mobility in soil
   Toxicological data are not 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

SECTION 13: Disposal considerations

13.1. Waste treatment methods
   Appropriate disposal / Product Recommendation
   Do not allow to enter into surface water or drains. This material and its container must be disposed of in a safe way. Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

   packaging Recommendation
   Non-contaminated packages may be recycled. Vessels not properly emptied are special waste.

SECTION 14: Transport information

14.1. UN number
   UN 1824

14.2. UN proper shipping name
   Land transport (ADR/RID): Sodium hydroxide solution (Sodium hydroxide)
   Sea transport (IMDG): SODIUM HYDROXIDE SOLUTION (Sodium hydroxide)
   Air transport (ICAO-TI / IATA-DGR): Sodium hydroxide solution (Sodium hydroxide)

14.3. Transport hazard class(es)
   8

14.4. Packing group
   II

14.5. Environmental hazards
   Land transport (ADR/RID) not applicable
   Marine pollutant not applicable

14.6. Special precautions for user
   Transport always in closed, upright and safe containers. Make sure that persons transporting the product know what to do in case of an accident or leakage.
   Advices on safe handling: see parts 6 - 8

   Further information

   Land transport (ADR/RID)
   tunnel restriction code E

   Sea transport (IMDG)
   EmS-No. F-A, S-B

   Air transport (ICAO-TI / IATA-DGR)

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
   not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
   EU legislation
   Directive 2010/75/EU on industrial emissions
   VOC-value (in g/L): 0

   National regulations
Restrictions of occupation
Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

Substance/product listed in the following inventories:
AICS keine Information (AICSK-EN.rtf)
DSL keine Information (DSLK-EN.rtf)
IECSC keine Information (IECSCK-EN.rtf)
KECI keine Information (KECICK-EN.rtf)
MITI keine Information (MITIK-EN.rtf)
PICCS keine Information (PICCSK-EN.rtf)
No information of listing in TOXIC SUBSTANCES CONTROL ACT (TSCA)

15.2. Chemical Safety Assessment
For the following substances of this preparation a chemical safety assessment has been carried out:

<table>
<thead>
<tr>
<th>EC No.</th>
<th>Chemical name</th>
<th>REACH No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>215-185-5</td>
<td>sodium hydroxide</td>
<td>01-2119457892-27-xxxx</td>
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<td>1310-73-2</td>
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</tbody>
</table>

SECTION 16: Other information

Full text of classification in section 3:
Met. Corr. 1 / H290  Corrosive to metals  May be corrosive to metals.
Skin Corr. 1A / H314 skin corrosion/irritation  Causes severe skin burns and eye damage.

Abbreviations and acronyms
For abbreviations and acronyms, see table at http://abbrev.esdscom.eu

Further information
Classification according to Regulation (EC) No 1272/2008 [CLP]

The information supplied on this safety data sheet complies with our current level of knowledge as well as with national and EU regulations. Without written approval, the product must not be used for purposes different from those mentioned in chapter 1. It is always the user's duty to take any necessary measures for meeting the requirements laid down by local rules and regulations. The details in this safety data sheet describe the safety requirements of our product and are not to be regarded as guaranteed attributes of the product.