1 Identification

Product identifier
Product name: Sodium hydroxide, 1.0N Standardized Solution
Stock number: 35629

Relevant identified uses of the substance or mixture and uses advised against.
No further relevant information available.

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Alfa Aesar, A Johnson Matthey Company
Johnson Matthey Catalog Company, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department
Emergency telephone number:
During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

C; Corrosive
R34: Causes burns.

Information concerning particular hazards for human and environment: Not applicable
Hazards not otherwise classified No information known.

Label elements

Labelling according to Regulation (EC) No 1272/2008
The product is classified and labeled according to the CLP regulation.

Hazard pictograms

GHS05

Signal word Danger

Hazard-determining components of labeling:
Sodium hydroxide

Hazard statements
H314 Causes severe skin burns and eye damage.

Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/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.
P301+P330+P311 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification
D2B - Toxic material causing other toxic effects
E - Corrosive material

(Contd. on page 2)
Product name: Sodium hydroxide, 1.0N Standardized Solution

3 Composition/information on ingredients

Chemical characterization: Mixtures

<table>
<thead>
<tr>
<th>Dangerous components:</th>
<th>Chemical characterization: Mixtures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1310-73-2 Sodium hydroxide</td>
<td>C R35 Skin Corr. 1A, H314</td>
</tr>
<tr>
<td>7732-18-5 Water</td>
<td>96.0%</td>
</tr>
</tbody>
</table>

4 First-aid measures

Description of first aid measures

General information: Immediately remove any clothing soiled by the product.

After inhalation: Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.

After skin contact: Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing: Seek medical treatment.

Information for doctor: No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents: Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Special hazards arising from the substance or mixture: If this product is involved in a fire, the following can be released: Sodium oxide.


6 Accidental release measures

Personal precautions, protective equipment and emergency procedures: Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

Environmental precautions: Do not allow material to be released to the environment without proper governmental permits. Do not allow product to reach sewage system or any water course. Do not allow to penetrate the ground/soil.

Methods and material for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Use neutralizing agent. Dispose contaminated material as waste according to item 13.
38. Ensure adequate ventilation.

Prevention of secondary hazards: No special measures required.

Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.

Information about protection against explosions and fires: The product is not flammable.

Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility:
Do not store together with acids.
Water reacts with many metals to give hydrogen, often violently. Water is also incompatible
with many reactive organic and inorganic chemicals.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average
face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Component</th>
<th>Limit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1310-73-2 Sodium hydroxide (4.0%)</td>
<td>Long-term value: 2 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Ceiling limit value: 2 mg/m³</td>
</tr>
</tbody>
</table>

Additional information: No data

Exposure controls

Personal protective equipment

General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Maintain an ergonomically appropriate working environment.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands:
Impervious gloves
Check protective gloves prior to each use for their proper condition.
The selection of suitable gloves not only depends on the material, but also on quality.
Quality will vary from manufacturer to manufacturer.

Eye protection:
Tightly sealed goggles
Full face protection

Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties
General Information
Appearance:
Form: Liquid
Color: Colorless
10 Stability and reactivity

Reactivity: No information known.
Chemical stability: Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided:
Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions: Water reacts violently with alkali metals.
Reacts with alkaline earth metals.
Incompatible materials: Acids
Water reacts with many metals to give hydrogen, often violently. Water is also incompatible with many reactive organic and inorganic chemicals.
Hazardous decomposition products: Sodium oxide

11 Toxicological information

Information on toxicological effects
Acute toxicity:
Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: Causes severe skin burns.
Eye irritation or corrosion: Causes serious eye damage.
Sensitization: No sensitizing effects known.
Germ cell mutagenicity:
The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for components in this product.
Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.
Product name: Sodium hydroxide, 1.0N Standardized Solution

Aspiration hazard: No effects known.
Subacute to chronic toxicity: No effects known.
Subacute to chronic toxicity:
The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for components in this product.
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive

Carcinogenic categories
OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12 Ecological information
Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability: No further relevant information available.
Bioaccumulative potential: No further relevant information available.
Mobility in soil: No further relevant information available.
Additional ecological information:
General notes:
Do not allow material to be released to the environment without proper governmental permits.
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Avoid transfer into the environment.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects: No further relevant information available.

13 Disposal considerations
Waste treatment methods
Recommendation: Consult state, local or national regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.
Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

<table>
<thead>
<tr>
<th>UN-Number</th>
<th>DOT, IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UN3266</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UN proper shipping name</th>
<th>DOT, IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrosive liquid, basic, inorganic, n.o.s.</td>
<td>DOT, IMDG, IATA</td>
</tr>
<tr>
<td>(Sodium hydroxide)</td>
<td>(SODIUM HYDROXIDE)</td>
</tr>
</tbody>
</table>

Transport hazard class(es)

<table>
<thead>
<tr>
<th>DOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Corrosive substances.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Label</th>
<th>Class</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>(C5) Corrosive substances</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Product name: Sodium hydroxide, 1.0N Standardized Solution**

<table>
<thead>
<tr>
<th>IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
</tr>
<tr>
<td>Label</td>
</tr>
<tr>
<td>Packing group</td>
</tr>
<tr>
<td>Environmental hazards:</td>
</tr>
<tr>
<td>Special precautions for user</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</td>
</tr>
<tr>
<td>Transport/Additional information:</td>
</tr>
<tr>
<td>UN &quot;Model Regulation&quot;:</td>
</tr>
</tbody>
</table>

### 15 Regulatory information

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

**National regulations**
- All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
- All components of this product are listed on the Canadian Domestic Substances List (DSL).

**SARA Section 313 (specific toxic chemical listings)**
- None of the ingredients are listed.

**California Proposition 65**
- **Prop 65 - Chemicals known to cause cancer**
  - None of the ingredients are listed.
- **Prop 65 - Developmental toxicity**
  - None of the ingredients are listed.
- **Prop 65 - Developmental toxicity, female**
  - None of the ingredients are listed.
- **Prop 65 - Developmental toxicity, male**
  - None of the ingredients are listed.

**Information about limitation of use:**
- Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**REACH - Pre-registered substances**
- All ingredients are listed.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Health, Safety and Environmental Department.

**Date of preparation / last revision** 05/16/2014 / -
Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organization
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
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
HSIS: Hazardous Materials Identification System (USA)
HMIS: Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)
Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B