

## 1 Identification

- **Product identifier**
- **Trade name:** sodium hydroxide
- **Article number:** A3910
- **CAS Number:**  
1310-73-2
- **EC number:**  
215-185-5
- **Index number:**  
011-002-00-6
- **Application of the substance / the mixture**  
Molecular biology  
Biochemistry  
Chemical analytics  
Laboratory chemical
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
AppliChem GmbH  
Ottoweg 4  
D-64291 Darmstadt
- **Information department:** Dept. Compliance
- **Emergency telephone number:** +49(0)6151 93570 (Inside normal business hours)

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Fax.: +49 (0)6151 935711  
msds@applichem.com

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Met. Corr.1 H290 May be corrosive to metals.  
Skin Corr. 1A H314 Causes severe skin burns and eye damage.
- **Label elements**
- **GHS label elements**  
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05

- **Signal word** Danger
- **Hazard statements**  
H290 May be corrosive to metals.  
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.

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 3  
Fire = 0  
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 3  
Fire = 0  
Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
1310-73-2 sodium hydroxide
- **Identification number(s)**
- **EC number:** 215-185-5
- **Index number:** 011-002-00-6

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Immediately remove any clothing soiled by the product.  
Involve doctor immediately.
- **After inhalation:**  
Supply fresh air.  
Seek medical treatment.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**  
Wash off with plenty of water.  
Dab with polyethylene glycol 400.  
Immediately remove any clothing soiled by the product.  
Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Rinse opened eye for several minutes under running water.  
Call a doctor immediately.
- **After swallowing:**  
Rinse out mouth.  
Do not attempt to neutralize.  
Call a doctor immediately.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

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## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**  
Non-combustible.  
Ambient fire may liberate hazardous vapours.
- **Advice for firefighters**
- **Protective equipment:**  
Wear self-contained respiratory protective device.  
In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.
- **Additional information**  
Collect contaminated fire fighting water separately. It must not enter the sewage system.  
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Avoid formation of dust.  
Do not inhale dust.  
Wear protective equipment. Keep unprotected persons away.  
Avoid substance contact.  
Ensure adequate ventilation
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Pick up mechanically.  
Avoid generation of dusts.  
Use neutralizing agent.  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.  
Clean up affected area.
- **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.
- **Protective Action Criteria for Chemicals**
  - **PAC-1:** 0.5 mg/m<sup>3</sup>
  - **PAC-2:** 5 mg/m<sup>3</sup>
  - **PAC-3:** 50 mg/m<sup>3</sup>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Thorough dedusting.  
Any deposit of dust which cannot be avoided must be regularly removed.
- **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 aluminium, tin or zinc containers.  
Provide alkali-resistant floor.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Store in dry conditions.

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- This product is hygroscopic.  
Open receptacle only under localized extractor facilities.  
Store under lock and key and with access restricted to technical experts or their assistants only.
- **Recommended storage temperature:** +15 - +25°C
  - **Storage class:** 8 B
  - **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

• **Components with limit values that require monitoring at the workplace:**

### 1310-73-2 sodium hydroxide

PEL	Long-term value: 2 mg/m <sup>3</sup>
REL	Ceiling limit value: 2 mg/m <sup>3</sup>
TLV	Ceiling limit value: 2 mg/m <sup>3</sup>

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Vacuum clean contaminated clothing. Do not blow or brush off contamination.
- Avoid contact with the eyes and skin.

- **Breathing equipment:**

- Required when dusts are generated.
- Filter P3

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **For the permanent contact gloves made of the following materials are suitable:**

- Nitrile rubber, NBR
- Recommended thickness of the material:  $\geq 0.11$  mm
- Value for the permeation: Level  $\geq 480$  min

- **As protection from splashes gloves made of the following materials are suitable:**

- Nitrile rubber, NBR
- Recommended thickness of the material:  $\geq 0.11$  mm
- Value for the permeation: Level  $\geq 480$  min

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· **Eye protection:**



Tightly sealed goggles

· **Body protection:**

Protective work clothing

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Solid

Color: White

· **Odor:** Odorless

· **Odor threshold:** Not determined.

· **pH-value:** 14

· **Change in condition**

Melting point/Melting range: 324 °C (615.2 °F)

Boiling point/Boiling range: 1,390 °C (33.8 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Product is not flammable.

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

· **Vapor pressure at 800 °C (1,472 °F):** 3.5 hPa (2.6 mm Hg)

· **Density at 20 °C (68 °F):** 2.13 g/cm<sup>3</sup> (17.775 lbs/gal)

· **Relative density:** Not determined.

· **Vapor density:** Not applicable.

· **Evaporation rate:** Not applicable.

· **Solubility in / Miscibility with**

Water at 20 °C (68 °F): 1090 g/l

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

Dynamic: Not applicable.

Kinematic: Not applicable.

· **Other information:** No further relevant information available.

## 10 Stability and reactivity

· **Reactivity:** No dangerous reactions known.

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- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions**  
Risk of explosion with:  
metals  
Light metals  
Hydrogen may form upon contact with metals (danger of explosion!).  
  
Violent reactions possible with:  
acids, Nitriles, Alkaline earth metals, in powder form, ammonium compounds, Cyanides, magnesium, organic nitro compounds, organic combustible substances, phenols, oxidizable substances.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No dangerous reactions known.
- **Hazardous decomposition products:** In the event of fire: See chapter 5
- **Additional information:**  
hygroscopic  
Incompatible with:  
metals  
metal alloys  
brass, Aluminium, Zinc, Tin, various plastics  
various plastics

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**  
Quantitative data on the toxicological effect of this product are not available.
- **Primary irritant effect:**
  - **on the skin:** Strong caustic effect on skin and mucous membranes.
  - **on the eye:** Strong caustic effect.
- **Additional toxicological information:**  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:**

Type of test	Effective concentration	Method	Assessment
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EC50/48 h	40.4 mg/l	(Aquatic Invertebrata)	
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- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Must not reach bodies of water or drainage ditch undiluted or unneutralized.

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Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

Water hazard class 1 (Assessment by list): slightly hazardous for water

Do not allow to enter waters, waste water, or soil.

• **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:**

Chemicals must be disposed of in compliance with the respective national regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

• **Uncleaned packagings:**

• **Recommendation:**

Disposal must be made according to official regulations.

Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

### 14 Transport information

• **UN-Number**

• **DOT, ADR, IMDG, IATA**

UN1823

• **UN proper shipping name**

• **DOT, ADR**

Sodium hydroxide, solid

• **IMDG, IATA**

SODIUM HYDROXIDE, SOLID

• **Transport hazard class(es)**

• **DOT**



• **Class**

8 Corrosive substances

• **Label**

8

• **ADR**



• **Class**

8 (C6) Corrosive substances

• **Label**

8

• **IMDG, IATA**



• **Class**

8 Corrosive substances

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· Label	8
· Packing group · DOT, ADR, IMDG, IATA	II
· Environmental hazards:	Not applicable.
· Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups · Stowage Category · Segregation Code	Warning: Corrosive substances 80 F-A,S-B Alkalis A SG35 Stow "separated from" acids.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR · Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	1 kg Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· UN "Model Regulation":	UN 1823 SODIUM HYDROXIDE, SOLID, 8, II

## 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara
- Section 355 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is not listed.
- TSCA (Toxic Substances Control Act): Substance is listed.
- Proposition 65
- Chemicals known to cause cancer: Substance is not listed.
- Chemicals known to cause reproductive toxicity for females: Substance is not listed.
- Chemicals known to cause reproductive toxicity for males: Substance is not listed.
- Chemicals known to cause developmental toxicity: Substance is not listed.
- Cancerogenity categories
- EPA (Environmental Protection Agency) Substance is not listed.
- TLV (Threshold Limit Value established by ACGIH) Substance is not listed.
- NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.
- GHS label elements  
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms



GHS05

- Signal word Danger
- Hazard statements  
H290 May be corrosive to metals.

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**Trade name: sodium hydroxide**

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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.

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

\* **16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• **Department issuing SDS:** Dept. Compliance

• **Date of preparation / last revision** 12/29/2017 / 3

• **Abbreviations and acronyms:**

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

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Met. Corr.1: Corrosive to metals – Category 1

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

• \* **Data compared to the previous version altered.**

US