

MATERIAL SAFETY DATA SHEET

1 IDENTIFICATION

Details of the supplier of the safety data sheet :

Company : Nanohelix Co., Ltd.
Address : A-dong and B-dong, 43-15, Techno 5-ro, Yuseong-gu, Daejeon 34014
 Republic of Korea
Telephone Number : +82-42-867-9055
Fax Number : +82-42-867-9057
<http://www.nanohelix.net>
Information department :
Quality control, Nanohelix Co., Ltd.
E-mail : info@nanohelix.net
Product Name : 10x Dilution Buffer
U.N.Number : None allocated
Dangerous Goods Class and Subsidiary Risk : None allocated
Hazchem Code : None allocated
Poison Schedule : None allocated
Use : Laboratory chemicals

2 HAZARDS IDENTIFICATION

GHS US Label element

Hazard pictograms



Signal word

: Danger

Hazard statements

: H302 - Harmful if swallowed
 : H314 - Causes severe skin burns and eye damage.
 : H402 - Harmful to aquatic life

Precautionary statements

: P260 - Do not breathe dust.
 : P264 - Wash exposed skin thoroughly after handling.
 : P270 - Do not eat, drink or smoke when using this product.
 : P273 - Avoid release to the environment.
 : P280 - Wear protective gloves, protective clothing, eye protection, face protection.
 : P301+P330+P331 - IF SWALLOWED : Rinse mouth.
 Do NOT induce vomiting
 : 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.
 : P310 - Immediately call a poison center or doctor/ physician.
 : P363 - Wash contaminated clothing before reuse.
 : P405 - Store locked up.
 : P501 - Dispose of contents/ container to comply with local, state and federal regulations
 If inhaled : Remove person to fresh air and keep comfortable for breathing.

3 | COMPOSITION/ INFORMATION ON INGREDIENTS

Substance / Mixture Description : Mixture
: The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances may be withheld as a Nanohelix Co., Ltd. trade secret.

Synonyms : Caustic potash
Potassium hydrate

Formula : KOH

Molecular weight : 56.106 g/mol

Hazardous ingredients

| Name | CAS No. | EC No. | Weight (%) |
|---------------------|-----------|-----------|------------|
| Potassium hydroxide | 1310-58-3 | 215-181-3 | >=1 - <4 |

4 | FIRST-AID MEASURES

General advice : Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled : If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact : Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5 | FIRE FIGHTING MEASURES

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture : Potassium oxides.

Advice for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Gives off hydrogen by reaction with metals.

6 | ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

Environmental precautions : Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up : Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Reference to other sections : For disposal see section 13

7 | HANDLING AND STORAGE

Precautions for safe handling : Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

| | |
|---|--|
| Conditions for safe storage, including any incompatibilities | : Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Absorbs carbon dioxide (CO ₂) from air. |
| Specific end use(s) | : Apart from the uses mentioned in section 1.2 no other specific uses are stipulated. |

8 | EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|--|--|
| Exposure controls | |
| Appropriate engineering controls | : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. |
| Personal protective equipment | |
| Eye/face protection | : Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). |
| Skin protection | : Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. |
| Body Protection | : Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. |
| Respiratory protection | : Where risk assessment shows air-purifying respirators are appropriate use respirator cartridges as a backup to engineering controls. |
| Control of environmental exposure | : Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. |

9 | PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-------------------------------------|-----------------------|
| Appearance | : Liquid |
| Color | : No data available. |
| Odor | : Characteristic |
| Odor Threshold | : No data available. |
| pH | : No data available. |
| Melting point/range | : No data available. |
| Boiling point/boiling range | : >40°C |
| Flash Point | : >101°C (Closed-cup) |
| Evaporation rate | : No data available. |
| Burning rate | : No data available. |
| Upper explosion limit | : No data available. |
| Lower explosion limit | : No data available. |
| Vapor pressure | : No data available. |
| Relative vapor density | : No data available. |
| Relative density | : No data available. |
| Density | : No data available. |
| Solubility(ies) | |
| Water solubility | : No data available. |
| Solubility in other solvents | : No data available. |
| Partition coefficient: | : No data available. |

| | |
|----------------------------------|----------------------|
| <i>n</i> -octanol/water | |
| Autoignition temperature | : Not determined. |
| Decomposition temperature | : No data available. |
| Viscosity | |
| Viscosity, dynamic | : No data available. |
| Viscosity, kinematic | : No data available. |
| Explosive properties | : No data available. |
| Oxidizing properties | : No data available. |

10 STABILITY AND REACTIVITY

| | |
|---|---|
| Reactivity | : No data available. |
| Chemical stability | : Heat of solution is very high, and with limited amounts of water, violent boiling may occur Stable under recommended storage conditions. |
| Possibility of hazardous reactions | : No data available. |
| Conditions to avoid | : Do not heat above melting point. |
| Incompatible materials | : Nitro compounds, Organic materials, Magnesium, Copper, Water, reacts violently with:, Metals, Light metals, Contact with aluminum, tin and zinc liberates hydrogen gas. |
| Hazardous decomposition products | : Other decomposition products - No data available. |

11 TOXICOLOGICAL INFORMATION

| | |
|---|---|
| Acute toxicity | : LD ₅₀ Oral - Rat - 333 mg/kg |
| Skin corrosion/irritation | : Skin - Rabbit Result : Severe skin irritation - 24 h |
| Serious eye damage/eye irritation | : Eyes - Rabbit Result : Corrosive to eyes (OECD Test Guideline 405) |
| Respiratory or skin sensitisation | : No data available. |
| Germ cell mutagenicity | : No data available. |
| Carcinogenicity | |
| IARC | : No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| Reproductive toxicity | : No data available. |
| Specific target organ toxicity - single exposure | : No data available. |
| Specific target organ toxicity - repeated exposure | : No data available. |

12 ECOLOGICAL INFORMATION

| | |
|---|--|
| Toxicity to fish | : LC ₅₀ - Gambusia affinis (Mosquito fish) - 80 mg/l - 96 h |
| Persistence and degradability | : The methods for determining the biological degradability are not applicable to inorganic substances. |
| Bioaccumulative potential | : No data available. |
| Mobility in soil | : No data available. |
| Results of PBT and vPvB assessment | : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. |

| | |
|------------------------------|----------------------------|
| Other adverse effects | : Harmful to aquatic life. |
|------------------------------|----------------------------|

13 DISPOSAL CONSIDERATION

Waste treatment methods

Product : Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chem scrubber.

Contaminated packaging : Dispose of as unused product.

14 TRANSPORT INFORMATION

UNRTDG : Not regulated as a dangerous good.

IATA-DGR : Not regulated as a dangerous good.

IMDG-Code : Not regulated as a dangerous good.

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

Domestic regulation

49 CFR : Not regulated as a dangerous good.

15 REGULATORY INFORMATION

OSHA Hazards : No OSHA Hazards.

EPCRA - Emergency Planning and Community Right-to-Know

SARA 304 Extremely Hazardous Substances Reportable Quantity : This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards.

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

California Prop 65 : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

16 OTHER INFORMATION

a. List of references

b. Issuing date : Oct. 26, 2018

c. Version : 2

d. Revision Date : May. 02, 2023

e. Further information

The data provided in this Material Safety Data Sheet is based on current experience and knowledge. The purpose of this Material Safety Data Sheet is to describe products in terms of their safety requirements. This data given is designed only as a guidance for safe handling, use, storage, transportation, disposal and is not to be considered quality specification or warranty. The above details do not imply any guarantee concerning composition or performance of this product.