JUNSEI Material safety data sheet

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Catalog Numbers: 95556
Catalog Name: 2 mol/L Sodium hydroxide solution
Company Identification:

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SECTION 2 HAZARDS IDENTIFICATION

Physical and chemical hazard
Flammable liquids :Out of category
Pyrophoric liquids :Out of category
Self-reactive substances and mixtures
:Out of category
Substances and mixtures which, in contact with water, emit flammable gases
:Out of category
Human health hazard
Skin corrosion/Irritation :Category 1
Serious eye damage/Eye irritation :Category 1
Skin sensitization :Out of category
Germ cell mutagenicity :Out of category
Specific target organ systemic toxicity(single exposure)
:Category 2 (Respiratory system)
Environmental hazard
Hazardous to the aquatic environment-acute hazard
:Out of category
Hazardous to the aquatic environment-chronic hazard
:Out of category
Pictograms or symbol

Signal word : Danger
Hazard statement: Causes severe skin burns and eye damage
Causes serious eye damage
Causes damage to organs (Respiratory organs)
Cautions
Safety measurements:
・Do not breathe fume/mist/vapours/spray.
・Wash hands thoroughly after handling.
・Do not eat, drink or smoke when using this product.
・Wear protective gloves/protective clothing/eye protection/face protection.
First-aid measures:
・If swallowed : Rinse mouth, Do not induce vomiting.
・If ON SKIN (or hair) : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
・Wash contaminated clothing before reuse.
・IF INHALED : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
・IF ON SKIN, IF IN EYES : Immediately call a POISON CENTER or doctor/physician.
・IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
・IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
Storage
・Store locked up.
Disposal
・Dispose of contents and containers appropriately in accordance with related regu1ations.

SECTION 3 COMPOSITION, INFORMATION ON INGREDIENTS

Substance/Mixture : Mixture
Ingredient 1
Component : Sodium hydroxide
Chemical formula : NaOH
Cas number : 1310-73-2
US TSCA inventory :Registered
EC number (EINECS): 215-185-5
JAPAN number (ENCS): 1-410
Content: 8 %
Ingredient 2
Component : Water
Chemical formula : H_2O
Cas number : 7732-18-5
US TSCA inventory :Registered
EC number (EINECS): 231-791-2
Content: 92 %

SECTION 4 FIRST AID MEASURES

If inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately Call a POISON CENTER or doctor/physician.
If on skin : Rinse skin with plenty of /shower for at least 15 minutes while removing contaminated clothing and shoes.
If in eyes : Rinse cautiously with plenty of water for at least 30 minutes , immediately call a Poison Center or doctor/physician.
If swallowed : Rinse mouth, Do not induce vomiting.
Immediately Call a POISON CENTER or doctor/physician.
Potential acute health effects :
Inhalation ; Cough. Sore throat. Burning sensation. Shortness of breath.
Skin ; Redness. Pain. Serious skin burns. Blisters.
Eyes ; Redness. Pain. Blurred vision. Severe burns.
Ingestion ; Abdominal pain. Burns in mouth and throat. Burning sensation in the throat and chest. Nausea. Vomiting. Shock or collapse.
Important signs and symptoms :The substance is corrosive to the eyes, skin and respiratory tract. Corrosive on ingestion. Inhalation of the aerosol may cause lung oedema. The effects may be delayed. Medical observation is indicated.

SECTION 5 FIRE FIGHTING MEASURES

This product is noncombustible.
Extinguishing media : Water spray, dry chemical powder, alcohol-resistant foam, carbon dioxide.
Prohibited extinguishing media : Straight streams of water.
Particular fire fighting : Move containers form fire area if it can be done without risk, if not possible, apply water form a safe distance to cool and protect surrounding area.
Protection for firefighters : Firefighters should wear protective equipment.

SECTION 6 ACCIDENTAL RELEASE MEASURES

General Information : Use proper personal protective equipment as indicated in Section 8.
Cautions for environment : Avoid release to the rivers, lakes, ocean, groundwater.
Spills/Leak : Absorb spills with absorbent (vermiculite, sand , fuller's earth) and place into a suitable disposal container for later disposal.

SECTION 7 HANDLING AND STORAGE

Handling: : Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes.
Use only in a chemical fume hood.
Storage: : Store in a tightly closed container.
Store in well-ventilated place.
Keep away from incompatible materials.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls : Use adequate ventilation to keep airborne concentrations low.
Exposure Limits (NaOH)
ACGIH (2010) : 2 mg/m^3 (TLV-STEL)

OELs (2011) : 2 mg/m^3
Personal protective equipment :
Eye Protection : Goggles
Hand Protection : Protective gloves
Skin and body protection : Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection : Wear respiratory protection.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State : Liquid
Appearance : Clear colorless
Odor : Odorless
pH : > 14 .
Vapor Pressure : No data available.
Viscosity : No data available.
Boiling Point : Not available
Freezing/Melting Point : No data available.
Autoignition Temperature : No data available.
Flash Point : No data available.
Explosion Limits, lower : No data available.
Explosion Limits, upper : No data available.
Decomposition Temperature : No data available.
Solubility in water : miscible
Specific Gravity/Density : No data available.
Molecular Formula : HNaO
Molecular Weight : 40.00

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability : Stable in ordinary handling conditions.
Conditions to Avoid : No data available.
Incompatibilities with Other Materials : Strong acids.
Hazardous Decomposition Products: No data available.
Hazardous Polymerization : Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute toxicity:
Oral : Not possible to classify because of no data.
Dermal : Not possible to classify because of no data.
Gas : Not applicable (GHS definition).
Vapours : Not possible to classify because of no data.
Skin corrosion/Irritation: Classified into category 1 by applying the additivity approach to GHS classification results of sodium hydroxide.
GHS classification results of sodium hydroxide: Classified into category1 based on the statement of " An in vivo test was conducted with Yorkshire weanling pigs using applications of 2N (8%),4N (16%) and 6N (24%) NaOH on the lower abdominal region.

Gross blisters developed within 15 minutes of application and 8 and 16% NaOH produced severe necrosis in all epidermal layers. A concentration of 24% produced numerous and severe blisters with necrosis extending deeper into the subcutaneous tissue (EURAR V73(2007)).
Furthermore, three New Zealand White rabbits were exposed to a concentration of 0.36% NaOH, No skin irritation/corrosion was observed at that concentration. Therefore, an additional study was performed with one animal exposed to the highest concentration (5%). This concentration showed to be corrosive at all observation time points (1, 24, 48, 72 and 144 hours after removal of exposure chamber) (EURAR V73(2007)). "

Serious eye damage/eye irritation: Classified into category 1 by applying the additivity approach to GHS classification results of sodium hydroxide.
GHS classification results of sodium hydroxide: Classified into category1 based on the statement of " Corrosive was caused at 1.2% or more to a rabbit eye (EURAR V73(2007)). "

Respiratory sensitization: Not possible to classify because of no data.

Skin sensitization: Classified into out of category based on the GHS classification results of sodium hydroxide.
GHS classification results of sodium hydroxide: Classified into out of category based on the statement of " Male volunteers were exposed on the back to sodium hydroxide concentrations of 0.063 - 1.0% (induction). After 7 days the volunteers were challenged to a concentration of 0.125%. The irritant response correlated well with the concentration of NaOH, but an increased response was not observed when the previously patch tested sites were rechallenged. Based on this study sodium hydroxide has no skin sensitisation potential. Furthermore NaOH has been used widely and for a long time and no human cases of skin sensitisation have been reported and therefore NaOH is not considered to be a skin sensitiser. "

Mutagenicity: Classified into out of category based on the GHS classification results of sodium hydroxide.
GHS classification results of sodium hydroxide: Classified into out of category based on the statement of " A mouse bone marrow micronucleus test revealed no significant increase of nuclei. In chromosome aberration test of mouse oocytes, no evidence of non-disjunction was found (EURAR V73(2007)). "

Carcinogenic effects: Not possible to classify because of insufficient data.

Effects on the reproductive system: Not possible to classify because of no data.

Specific target organ systemic toxicity single exposure.
: Classified into category 2 (respiratory system) by applying the cut-off value to GHS classification results of sodium hydroxide.
GHS classification results of sodium hydroxide: Classified into category 1(respiratory system) based on the statement of "The inhalation exposure to the particles or the mist will cause such damages as burns to the nose and bronchial tube and result even in lung edemas (PATTY (5th, 2001))."

Specific target organ systemic toxicity repeated exposure
:Not possible to classify because of no data.

Aspiration hazard :Not possible to classify because of no data.

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity:

Hazardous to the aquatic environment (acute) : Classified into out of category by applying the cut-off value to GHS classification results of sodium hydroxide.
GHS classification results of sodium hydroxide: It was classified into Category 3 from 48-hour LC_{50}=40mg/L of Crustacea (Ceriodaphnia) (SIDS, 2002).

Hazardous to the aquatic environment (chronic) : Classified into out of category based on the GHS classification results of sodium hydroxide.
GHS classification results of sodium hydroxide: Classified into out of category based on the statement of "Toxicological effects of NaOH for the aquatic environment will be mitigated by the buffer capacity of the aquatic ecosystem. "

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with federal, state, and local regulations.

SECTION 14 TRANSPORT INFORMATION

IATA Shipping Name: Sodium hydroxide solution
Hazard Class: 8 (Corrosive substances)
UN Number: 1824
Packing Group: II

IMO Shipping Name: SODIUM HYDROXIDE SOLUTION
Hazard Class: 8 (Corrosive substances)
UN Number: 1824
Packing Group: II

RID/ADR Shipping Name: Sodium hydroxide solution
Hazard Class: 8 (Corrosive substances)
UN Number: 1824
Packing Group: II

SECTION 15 REGULATORY INFORMATION

Fire Service Act : Not regulated

Poisonous and Deleterious Substances Control Act
: Article 2 (2) Deleterious Substances, Attached Table 2-94

Industrial Safety and Health Act
: Article 18-2, Attached Table 9-319 of Cabinet order

Ordinance for Enforcement of the Civil Aeronautics Act
: Article 194 (viii) Corrosive substance

Regulations for the carriage and storage of dangerous goods in ship
: Article 2 Corrosive substances

Substance Registration (NaOH) :
Australia (AICS) : Registration
Canada(DSL) : Registration
Korea number (ECL) : KE-31487
China(IECSC) : Registration

SECTION 16 OTHER INFORMATION

REFERENCES:

—The Merck Index 14 edition, Monographs No. 08627
—Chemical Risk Information Platform (CHRIP)
—Information about the status of the implementation of GHS in Japan (ID= 21B3010)
—European Union Risk Report Vol.73 (2007)
—International Chemical Safety Cards (ICSC) No. 0360

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.
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