

SKIN CONTACT

Harmful if absorbed, very destructive to skin. Remove contaminated clothing and wash skin with plenty of running water, under a shower if affected area is large enough to warrant this. Get medical attention immediately.

EYE CONTACT

Very destructive to the cornea. Rinse immediately eye with plenty of low pressure water for at least 15 minutes. Remove any contact lenses. Get medical attention immediately.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

The product is non flammable and non combustible. In case of fire in the surroundings: all extinguishing agents allowed. Contact with moisture or water may generate sufficient heat to ignite combustible materials.

SPECIAL FIRE FIGHTING PROCEDURES

Keep drums, etc. cool by spraying with water

UNUSUAL FIRE & EXPLOSION HAZARDS

Contact with common metals produces hydrogen gas which forms flammable mixtures with air.

SPECIFIC HAZARDS

The substance is a strong base, it reacts violently with acid and is corrosive in moist air toward metals such as zinc, aluminum, tin and lead forming a combustible/explosive gas (hydrogen). Rapidly absorbs carbon dioxide and water from air. Contact with moisture or water will generate heat.

PROTECTIVE MEASURES IN FIRE

Wear full protective clothing and MSHA/NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

See section 8.

ENVIRONMENTAL PRECAUTIONS

Take precautionary measures against discharges into the environment (high concentrations may injure aquatic life due to high pH).

SPILL CLEAN UP METHODS

Avoid any contact with eyes and skin. Wear personal protection (see section 8). Sweep spilled substance into suitable containers. Wash away remainder with plenty of water (extra personal protection: complete protective clothing including self-contained breathing apparatus).

7 HANDLING AND STORAGE

USAGE PRECAUTIONS

NEVER pour water into this substance; when dissolving or diluting always add it slowly to the water. Corrosive. Avoid any contact with eyes or skin. Wash thoroughly after handling and before eating, drinking or smoking.

STORAGE PRECAUTIONS

Separated from strong acids, metals, food and feedstuffs, and combustible materials. Corrosive. Keep tightly closed and in a dry place. Store at room temperature in an area having corrosion resistant concrete floor.

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8 EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS

TLV: ppm; 2 mg/m³ (ceiling values) (ACGIH 1993-1994).

NIOSH REL: TWA 2 mg/m³

The applying occupational exposure limit value should not be exceeded during any part of the working exposure. The symptoms of lung edema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.

PROTECTIVE EQUIPMENT

Protective gloves, safety goggles / face shields and protective clothing.

RESPIRATORY EQUIPMENT

In the event where significant exposure is possible (e.g. in dealing with spills, fire or exposure to vapour and/or toxic fumes) wear self-contained breathing apparatus.

HAND PROTECTION

Protective gloves must be used.

EYE PROTECTION

Wear approved safety goggles / face shields

HYGIENE MEASURES

Wash at the end of each work shift and before eating, drinking, smoking or using the toilet.

SKIN PROTECTION

Wear protective clothing and protective boots.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	clear liquid
COLOUR	colourless
SOLUBILITY IN WATER	fully miscible with water
pH	14

10 STABILITY AND REACTIVITY

STABILITY

Stable under normal temperature conditions and recommended use.

MATERIALS TO AVOID

The substance is a strong base, it reacts violently with acid and is corrosive in moist air toward metals such as zinc, aluminum, tin and lead forming a combustible/explosive gas (hydrogen - see ICSC0001). Rapidly absorbs carbon dioxide and water from air. Contact with moisture or water will generate heat.

HAZARDOUS DECOMPOSITION PRODUCTS

None

11 TOXICOLOGICAL INFORMATION

GENERAL

Corrosive. The substance is very corrosive to the eyes, the skin and the respiratory tract. Corrosive on ingestion. Inhalation of an aerosol of this substance may cause lung edema.

INHALATION

Harmful if inhaled. Irritation may lead to chemical pneumonia and pulmonary edema. Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. Causes chemical burns to the respiratory tract. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonia and pulmonary edema. Aspiration may lead to pulmonary edema. May cause systemic effects.

Inhalation of an aerosol of this substance may cause lung edema.

INGESTION

Harmful if swallowed. May cause severe and permanent damage to the digestive tract. May cause circulatory system failure. May cause perforation of the digestive tract. Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. May cause systemic effects.

SKIN CONTACT

Causes skin burns. May cause deep, penetrating ulcers of the skin. Causes severe burns with delayed tissue destruction. Causes redness and pain. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.

Repeated or prolonged contact with skin may cause dermatitis.

EYE CONTACT

Causes severe eye burns. May cause irreversible eye injury. Contact may cause ulceration of the conjunctiva and cornea. Eye damage may be delayed. Causes redness and pain. May cause chemical conjunctivitis and corneal damage.

Prolonged or repeated eye contact may cause conjunctivitis.

12 ECOLOGICAL INFORMATION

ECOTOXICITY

None. High concentrations may injure aquatic life due to high pH.

WATER HAZARD CLASSIFICATION

none

13 DISPOSAL CONSIDERATIONS

GENERAL INFORMATION

Place into a suitable closed container for disposal.

DISPOSAL METHODS

Cautiously add to a large stirred excess of water. Adjust the pH to neutral. Flush the aqueous solution down the drain with plenty of water. The dilution and neutralisation may generate heat and fumes which can be controlled by the rate of addition.

Dispose of in accordance with local and national regulations.

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14 TRANSPORT INFORMATION

GENERAL

Do not transport with food and feedstuffs.

Xn	harmful
C	corrosive

UN Hazard Class	8
UN Packing Group	II
UN number	1813

IMO	8/1813
IATA	1813

IMDG class	8
ADR	8

15 REGULATORY INFORMATION

LABELLING Xn (harmful) and C (corrosive)

CONTAINS potassium hydroxide (25%)

RISK PHRASES R22 harmful if swallowed
R35 causes severe burns

SAFETY PHRASES S1/2 Keep locked up and out of the reach of children
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection
S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. The Control of Substances Hazardous to Health Regulations 1988. Health and Safety at Work Act 1974.

ENVIRONMENTAL LISTING

Control of Pollution Act 1974.

EU DIRECTIVES

System of specific information relating to Dangerous Preparations. 2001/58/EC. Dangerous Preparations Directive 1999/45/EC.

STATUTORY INSTRUMENTS

Notification of New Substances Regulations (NONS) 1993. The Export and Import of Dangerous Chemicals Regulations 2005 number 928.

APPROVED CODE OF PRACTICE

Classification and Labelling of Substances and Preparations Dangerous for Supply (EU 2001/59/EC). Safety Data Sheets for Substances and Preparations (REACH)

GUIDANCE NOTES

Workplace Exposure Limits EH40. Introduction to Local Exhaust Ventilation HS(G)37. CHIP for everyone HSG(108).

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REVISION DATE: 24/02/2008

NATIONAL REGULATIONS

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2002. No. 1689.

Workplace Exposure Limits 2005 (EH40).

The Carriage of Dangerous Goods and use of transportable pressure equipment regulations 2004.

Control of Substances hazardous to health regulations 2002 (as amended).

16 OTHER INFORMATION

ISSUED BY HS&E Manager

REVISION DATE: 24/02/2008

RISK PHRASES IN FULL

R22 harmful if swallowed

R35 causes severe burns

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