

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Dissolved Oxygen 2 Reagent
Catalog Number: 98299

Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

Emergency Telephone Numbers:
(Medical and Transportation)
(303) 623-5716 24 Hour Service
(515)232-2533 8am - 4pm CST

MSDS Number: M00028
Chemical Name: Not applicable
CAS No.: Not applicable
Chemical Formula: Not applicable
Chemical Family: Mixture
Hazard: Toxic. Causes severe burns.
Date of MSDS Preparation:
Day: 30
Month: March
Year: 2014

2. COMPOSITION / INFORMATION ON INGREDIENTS

Lithium Hydroxide

CAS No.: 1310-65-2
TSCA CAS Number: 1310-65-2
Percent Range: 55.0 - 65.0
Percent Range Units: weight / weight
LD50: Oral Rat LD50 = 210 mg/kg
LC50: Inhalation Rat LC50 = 0.96 mg/L/4 hr
TLV: 10 mg/m³ as inhalable dust; 3 mg/m³ as respirable dust
PEL: 15 mg/m³ as inhalable dust; 5 mg/m³ as respirable dust
Hazard: Toxic. Causes severe burns. Harmful if swallowed

Sodium Azide

CAS No.: 26628-22-8
TSCA CAS Number: 26628-22-8
Percent Range: 1.0 - 5.0
Percent Range Units: weight / weight
LD50: Oral Rat LD50 = 27 mg/kg
LC50: Inhalation (Vapors) Rat LC50 = 1.853 mg/L; Inhalation Rat LC50 = 37 mg/m³
TLV: C: 0.29 mg/m³ as Sodium azide; C 0.11 ppm as Hydrazoic acid vapor
PEL: Not established
Hazard: Highly toxic. May cause irritation. Cumulative poison. Experimental mutagen. Explosive. Contact with acid may generate toxic fumes.

Potassium Iodide

CAS No.: 7681-11-0
TSCA CAS Number: 7681-11-0
Percent Range: 30.0 - 40.0
Percent Range Units: weight / weight
LD50: Oral Human LD50 = 500 - 5000 mg/kg; Oral Rat LD50 = 2779 mg/kg; Oral Mouse LD50 = 1862 mg/kg; Oral Mouse LD50 = 1000 mg/kg
LC50: None reported
TLV: 10 mg/m³ as inhalable dust; 3 mg/m³ as respirable dust
PEL: 15 mg/m³ as total dust; 5 mg/m³ as respirable dust

RECEIVED
JUN 17 2014
MAINTENANCE DEPT

Hazard: Harmful if swallowed Causes eye and skin irritation Experimental teratogen. Experimental mutagen. Ecological hazard

3. HAZARDS IDENTIFICATION

Emergency Overview:

Appearance: White crystals

Odor: Slight

CAUSES SEVERE BURNS HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN

HMIS:

Health: 3

Flammability: 1

Reactivity: 1

Protective Equipment: X - See protective equipment, Section 8.

NFPA:

Health: 3

Flammability: 1

Reactivity: 1

Symbol: Not applicable

Potential Health Effects:

Eye Contact: Causes severe burns

Skin Contact: Causes severe burns

Skin Absorption: Toxic. Effects similar to those of ingestion

Target Organs: Central nervous system

Ingestion: Toxic Causes: severe burns hypotension May cause iodism, which symptoms include skin rash, conjunctivitis, runny nose, sneezing, bronchitis, headache, fever and irritation of mucous membranes. May cause: abdominal pain dizziness nausea vomiting respiratory stimulation convulsions followed by respiratory depression central nervous system effects kidney damage liver damage spleen damage lung damage coma death

Target Organs: Central nervous system Bone marrow Kidneys Liver Spleen Lungs

Inhalation: harmful Causes: severe burns May cause: coughing shortness of breath bronchitis headache dizziness weakness respiratory stimulation convulsions followed by respiratory depression death

Target Organs: None reported

Medical Conditions Aggravated: Sodium azide produces a larger blood pressure drop in persons with high blood pressure than in persons with normal blood pressure. Pre-existing: Eye conditions Skin conditions Respiratory conditions Kidney conditions Liver conditions

Chronic Effects: Lithium compounds have been implicated in development of aplastic anemia. Signs of lithium poisoning include dehydration, extreme weight loss, fine tremor of hands, nausea, vomiting and diarrhea. Chronic overexposure may cause headache central nervous system effects kidney damage liver damage adverse effects to the blood brain damage coma death

Cancer / Reproductive Toxicity Information:

This product does NOT contain any OSHA listed carcinogens.

This product does NOT contain any IARC listed chemicals.

This product does NOT contain any NTP listed chemicals.

Additional Cancer / Reproductive Toxicity Information: Contains: an experimental mutagen. an experimental teratogen.

Toxicologically Synergistic Products: None reported

4. FIRST AID

Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.

Skin Contact (First Aid): Wash skin with plenty of water for 15 minutes. Remove contaminated clothing. Call physician immediately.

Ingestion (First Aid): Do not induce vomiting. Give 1-2 glasses of water. Never give anything by mouth to an unconscious person. Call physician immediately.

Inhalation: Remove to fresh air. Give artificial respiration if necessary. Call physician.

5. FIRE FIGHTING MEASURES

RECEIVED
JUN 17 2014
MAINTENANCE DEPT

Flammable Properties: Does not burn, but may melt in a fire, releasing toxic fumes. During a fire, corrosive and toxic gases may be generated by thermal decomposition.

Flash Point: Not applicable

Method: Not applicable

Flammability Limits:

Lower Explosion Limits: Not applicable

Upper Explosion Limits: Not applicable

Autoignition Temperature: Not applicable

Hazardous Combustion Products: None reported

Fire / Explosion Hazards: Contact with metals gives off hydrogen gas which is flammable. Closed containers may explode if heated.

Static Discharge: None reported.

Mechanical Impact: None reported

Extinguishing Media: Carbon dioxide. Dry chemical. Water.

Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear. Evacuate area and fight fire from a safe distance.

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice:

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

Containment Technique: Stop spilled material from being released to the environment. Releases of this material may contaminate the environment.

Clean-up Technique: Avoid contact with spilled material. Sweep up material. Dispose of material in government approved hazardous waste facility. Decontaminate the area of the spill with a weak acid solution.

Evacuation Procedure: Evacuate general area (50 foot radius or as directed by your facility's emergency response plan) when: a pound or more of loose powder is spilled. If conditions warrant, increase the size of the evacuation.

Special Instructions (for accidental release): Mixture contains a component which is regulated as hazardous waste in the U. S. .

304 EHS RQ (40 CFR 355): Sodium Azide - RQ 1000 lbs.

D.O.T. Emergency Response Guide Number: 154

7. HANDLING / STORAGE

Handling: Avoid contact with eyes skin clothing. Do not breathe dust. Wash thoroughly after handling. Use with adequate ventilation. Maintain general industrial hygiene practices when using this product.

Storage: Store in a cool, dry place. Keep away from: metals acids / acid fumes.

Flammability Class: Not applicable

8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

Engineering Controls: Use a fume hood to avoid exposure to dust, mist or vapor. Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment:

Eye Protection: chemical splash goggles

Skin Protection: nitrile gloves. In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it. lab coat

Inhalation Protection: laboratory fume hood and / or adequate ventilation

Precautionary Measures: Avoid contact with: eyes skin clothing. Do not breathe: dust. Wash thoroughly after handling.

Keep away from: metals acids/acid fumes

TLV: 10 mg/m³ as inhalable dust

PEL: 15 mg/m³ as inhalable dust; 5 mg/m³ as respirable dust

9. PHYSICAL / CHEMICAL PROPERTIES

RECEIVED
JUN 17 2014
MAINTENANCE DEPT

Appearance: White crystals
Physical State: Solid
Molecular Weight: Not applicable
Odor: Slight
pH: 12.6 (5% solution)
Vapor Pressure: Not applicable
Vapor Density (air = 1): Not applicable
Boiling Point: Not applicable
Melting Point: 110 °C (230 °F)
Specific Gravity/ Relative Density (water = 1; air =1): 1.94
Evaporation Rate (water = 1): Not applicable
Volatile Organic Compounds Content: Not applicable
Partition Coefficient (n-octanol/ water): Not applicable
Solubility:
Water: Soluble
Acid: Soluble
Other: Not determined
Metal Corrosivity:
Steel: Not determined
Aluminum: 0.248 in/yr (6.30 mm/yr)

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Conditions to Avoid: Excess moisture Extreme temperatures Contact with acid or acid fumes Contact with oxidizers
Reactivity / Incompatibility: May react violently in contact with: acids oxidizers
Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: iodine iodine compounds potassium oxide nitrogen oxides sodium oxides Contact with metals may release flammable hydrogen gas.
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Product Toxicological Data:
LD50: ATE Oral Rat LD50 = 256 mg/kg
LC50: ATE Inhalation Rat LC50 = 1.5 mg/L
Dermal Toxicity Data: ATE Dermal Rabbit LD50 = 862 mg/kg
Skin and Eye Irritation Data: None reported
Mutation Data: Sodium Azide: DNA inhibition in human fibroblasts @ 50 mg/l; other data reported in RTECS.
Reproductive Effects Data: None reported
Ingredient Toxicological Data: Sodium azide: Oral Rat LD50 = 27 mg/kg; Dermal Rabbit LD50 = 20 mg/kg; Dermal Rat LD50 = 50 mg/kg; Inhalation Rat LC50 = 0.036 mg/L; Inhalation (Vapors) LC50 = 1.8 mg/L/4 hr. Lithium hydroxide: Oral Rat LD50 = 210 mg/kg

12. ECOLOGICAL INFORMATION

Product Ecological Information: --
No ecological data available for this product. Do not place in landfill. Recycle appropriately. Do not release into the environment. Mobility in soil: High
Ingredient Ecological Information: Sodium azide: 96 hr Oncorhynchus mykiss LC50 = 0.8 mg/L; 96 hr Lepomis macrochirus LC50 = 0.68 mg/L; 48 hr Daphnia pulex EC50 = 4.2 mg/L; 96 hr Selenastrum capricornutum ErC50 = 0.348 mg/L. Potassium iodide: 48 hr Aquatic invertebrates EC50 = 9.8 mg/L
CEPA categorization for each and every ingredient: Persistent and inherently toxic to non-human organisms (PiT)

13. DISPOSAL CONSIDERATIONS

EPA Waste ID Number: D002

RECEIVED
JUN 17 2014
MAINTENANCE DEPT

Special Instructions (Disposal): Never put unreacted azides down the drain! Dispose of material in an E.P.A. approved hazardous waste facility.

Empty Containers: Rinse three times with an appropriate solvent. Dispose of empty container as normal trash. In the US, rinsate from empty containers is classified as hazardous waste and should be disposed of at an E.P. A. approved facility. Rinsate from empty containers may contain sufficient product to require disposal as hazardous waste in countries other than the US.

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

14. TRANSPORT INFORMATION

D.O.T.:

D.O.T. Proper Shipping Name: Lithium Hydroxide Mixture

--

DOT Hazard Class: 8

DOT Subsidiary Risk: NA

DOT ID Number: UN2680

DOT Packing Group: II

I.C.A.O.:

I.C.A.O. Proper Shipping Name: Lithium Hydroxide Mixture

--

ICAO Hazard Class: 8

ICAO Subsidiary Risk: NA

ICAO ID Number: UN2680

ICAO Packing Group: II

I.M.O.:

I.M.O. Proper Shipping Name: Lithium Hydroxide Mixture

--

I.M.O. Hazard Class: 8

I.M.O. Subsidiary Risk: NA

I.M.O. ID Number: UN2680

I.M.O. Packing Group: II

Additional Information: There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

U.S. Federal Regulations:

O.S.H.A.: This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

E.P.A.:

S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard

S.A.R.A. Title III Section 313 (40 CFR 372): This product contains a chemical(s) subject to the reporting requirements of Section 313 of Title III of SARA.

Sodium azide

302 (EHS) TPQ (40 CFR 355): Sodium Azide 500 lbs.

304 CERCLA RQ (40 CFR 302.4): Sodium azide 1000 lbs.

304 EHS RQ (40 CFR 355): Sodium Azide - RQ 1000 lbs.

Clean Water Act (40 CFR 116.4): Not applicable

RCRA: Contains RCRA regulated substances. See Section 13, EPA Waste ID Number.

C.P.S.C.: The label for this product bears the signal word "POISON" because the concentration of Lithium Hydroxide in the product is greater than/ equal to 10%

State Regulations:

California Prop. 65: No Prop. 65 listed chemicals are present in this product.

Identification of Prop. 65 Ingredient(s): None

California Perchlorate Rule CCR Title 22 Chap 33: Not applicable

RECEIVED
JUN 17 2014
MAINTENANCE DEPT

Trade Secret Registry: Not applicable

National Inventories:

U.S. Inventory Status: All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

TSCA CAS Number: Not applicable

16. OTHER INFORMATION

Intended Use: Laboratory Reagent Determination of dissolved oxygen

References: 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. List of Dangerous Substances Classified in Annex I of the EEC Directive (67/548) - Classification, Packaging and Labeling of Dangerous Substances, Amended July 1992. Outside Testing. Technical Judgment.

Revision Summary: Format update(s) to comply with Directive 2001/58/EC Substantially Revised MSDS Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3).

Legend:

NA - Not Applicable

ND - Not Determined

NV - Not Available

w/w - weight/weight

w/v - weight/volume

v/v - volume/volume

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

HACH COMPANY ©2014

RECEIVED
JUN 17 2014
MAINTENANCE DEPT

RECEIVED
JUN 17 2014
MAINTENANCE DEPT