Kor-Chem, Inc.
Setting Limits By Probing The Impossible
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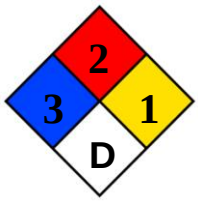

SAFETY DATA SHEET

NOTICE: Judgment may be based on indirect test and technical literature. The OSHA Hazard Communication Standard only requires SDS's and special labeling for materials defined as "HAZARDOUS"; see 29 CFR 1910.1200 (c). This document may be about a product which is NOT hazardous but is provided as information for our customers. See references for information.

SECTION 1. IDENTIFICATION

Product Identifier: GIR-4U Plus
Product Use: Caustic Haze Remover
UN #: 1760
Manufactured by: Kor-Chem Inc.
5800 Bucknell Drive
Atlanta, GA 30336

Product Identification # (PIF): 01500
Emergency Telephone #: 1-800-255-3924
General Information #: 404-344-9580
Prepared by: Sonya Lockhart
Date Prepared: March 24, 2014
Revised: April 15, 2014

SECTION 2. HAZARD(S) IDENTIFICATION

HMIS Ratings: Health 3, Fire 2, Reactivity 1

Signal Word: DANGER
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
OSHA Hazard Class: -Skin Corrosion/Irritation: Category 1B, Causes severe skin burns and eye damage, H314
-Flammable Liquids: Category 4, Combustible, H227
-Aspiration Hazard: Category 2, May be harmful if swallowed and enters airways, H305
Product VOC: 59%
Potential Health Effects:

- Eye Contact: Corrosive to eyes. Symptoms may include severe irritation, disintegration, scarring and clouding.
- Skin Contact: Corrosive to skin. Symptoms may include burns, ulceration and scarring.
- Inhalation: Mists are corrosive to respiratory tract and may cause pulmonary edema (shortness of breath and tightness of chest). Excessive exposure to vapor may cause dizziness, blurred vision, nausea, vomiting and headaches.
- Ingestion: Corrosive to digestive tract. May cause severe pain, burning, vomiting and diarrhea. Aspiration hazard if swallowed – can enter lungs and cause damage.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS #	Max. %
Sodium Hydroxide	1310-73-2	<15
Monoethanolamine	141-43-5	<10
Dipropylene glycol methyl ether	34590-94-8	<35
Ethylene Glycol Butyl Ether	111-76-2	<25

SECTION 4. FIRST AID MEASURES

- Eyes: Immediately flush well with water for at least 15 minutes, while holding eyelids open. Remove any contact lenses. If irritation persists, repeat flushing. Seek medical attention.
- Skin: Wash with soap and water, then flush with water for 15 minutes. Remove contaminated clothing and launder before re-use. If irritation persists, seek medical attention.
- Inhalation: Move to fresh air. If breathing is difficult, have trained person administer oxygen. If respiration stops, have a trained person administer artificial respiration and call a physician. Pulmonary edema symptoms can be delayed up to 48 hours after exposure.
- Ingestion: DO NOT INDUCE VOMITING. If victim is alert and not convulsing, rinse mouth and give as much water as possible to dilute (8-10oz.). If vomiting occurs spontaneously, have victim lean forward with head down, rinse mouth and administer more water. Immediately transport victim to an emergency facility.

SECTION 5. FIRE-FIGHTING MEASURES

Flammability: Combustible liquid
Flash Point: 162°F (72°C)

- Extinguishing Media: Water fog, alcohol foam, dry chemical or carbon dioxide. Do not spray water directly on fire. Use water spray to cool containers.
- Specific hazards arising from chemical: Sodium hydroxide can react with metals to form flammable hydrogen gas. Vapors are heavier than air and may travel along the ground to an ignition source.

- Hazardous combustion products: Sodium, nitrogen and carbon oxide fumes.
- Firefighting protective equipment: Wear a self-contained breathing apparatus with a full face piece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment.
- Sensitivity to static discharge: Electrostatic charge may build up during handling. Grounding equipment is recommended.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protective equipment. Eliminate all ignition sources. Ventilate area.

- For Small Spills: Spilled material is slippery. Avoid dispersal of material and runoff into soil, waterways, drains and sewers. Neutralize with weak acidic material (citric acid), then absorb spill with vermiculite or other inert material, and then place in a container for chemical waste using non-sparking tools. Do not flush into sewer. Dispose of contaminated absorbent material in accordance with local, state and federal regulations.
- For Large Spills: Large spills cannot occur due to packaging.

SECTION 7. HANDLING AND STORAGE

- Handling: Wear personal protection equipment. Use with adequate ventilation. Do not premix with other chemicals. Empty containers may contain hazardous residues. Do not handle around sources of ignition. Follow US NFPA 30 on safe handling of flammable and combustible liquids. Use proper bonding and grounding during product transfer as described in document NFPA 77. Vapors are heavier than air and may travel along the ground to an ignition source. Never use welding or cutting torch on or near drum (even empty) because product can ignite explosively.
- Storage: Keep away from heat, flame, or sunlight. Keep container closed when not in use. Protect from physical damage. Store away from strong acids, oxidizers, aluminum, nitroaromatic, nitroparaffinic or organohalogen compounds.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ingredient	CAS #	OSHA/PEL	ACGIH/TLV	STEL
Sodium Hydroxide	1310-73-2	2mg/m3	2mg/m3	NE
Monoethanolamine	141-43-5	3ppm	3ppm	6ppm
Dipropylene glycol methyl ether	34590-94-8	100ppm	100ppm	150ppm
Ethylene Glycol Butyl Ether	111-76-2	50ppm	20ppm	NE

Engineering Controls: Provide adequate ventilation. Observe occupational exposure limits and keep the risk of exposure to a minimum.
Personal protective equipment:

- Eye: Safety glasses with side shields or splash proof goggles and face shield.
- Skin : Chemical resistant gloves.
- Respirator: Use NIOSH approved protection if PEL is exceeded or if misting or vapors occur.
- Clothing: Normal materials handling clothing and apron.
- Other: Use only in a well ventilated area.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Description: Dark brown, opaque liquid
- Odor: Butyl
- pH, Neat: 13+
- Boiling point: Not determined
- Flash Point: 162^{o}F (72^{o}C)
- Evaporation Rate (n-butyl acetate=1): <1
- Upper Flammability Limit (% by volume): Not determined
- Lower Flammability Limit (% by volume): Not determined
- Vapor Pressure: >0.1mmHg @ 20^{o}C
- Vapor Density: (Air = 1): >1
- Specific Gravity, (water = 1.0): 1.050 g/ml
- Water Solubility: Complete
- Auto-ignition Temperature: Not determined
- %Volatile/Volume: 76%

SECTION 10. STABILITY AND REACTIVITY

- Chemical stability: Stable under normal conditions. Glycol ethers can form peroxides.
- Reactivity: Slowly attacks glass at room temperature. Corrosive to metals. Can react with metals to form flammable hydrogen gas. Hygroscopic.
- Hazardous polymerization: Will not occur, but can induce hazardous polymerization of acetaldehyde, acrolein and acrylonitrile.
- Conditions to avoid: Heat, flame and sparks. Do not mix with other chemicals
- Incompatibility with other substances: Avoid strong acids, oxidizers, aluminum, nitroaromatic, nitroparaffinic or organohalogen compounds. Can produce carbon monoxide upon contact with solutions of sugars. Can form spontanerously flammable chemicals upon contact with 1,2-dichloroethylene, trichloroethylene and tetrachloroethane.
- Hazardous combustion products: Sodium, nitrogen and carbon oxide fumes.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

- Oral (LD50 Rat): >2000mg/kg (Dipropylene glycol methyl ether)
- Dermal (LD50 Rabbit): >2000mg/kg (Dipropylene glycol methyl ether)

- Inhalation (LC50 Rat): >2000mg/kg (Ethylene Glycol Butyl Ether)
- Sodium hydroxide solutions as weak as 0.12% have damaged healthy skin within 1 hour.

Chronic Toxicity:

- May cause drying and flaking of the skin (dermatitis).
- Prolonged exposure to vapor may cause central nervous system depression. High levels may result in unconsciousness, liver and kidney damage and red blood cell damage.

SECTION 12. ECOLOGICAL INFORMATION

Acute Aquatic Effects:

- 96h LC-50 (fish): >100ppm
- 96h EC-50 (invertebrates): >100ppm
- 192h EC0 (algae): >100ppm
- Persistence and degradability: Considered readily biodegradable.
- Bioaccumulation: Not expected to bioaccumulate.
- Mobility: This product is soluble in water and may spread in water systems. This product is partially volatile and may spread in the atmosphere.

SECTION 13. DISPOSAL CONSIDERATIONS

- Disposal of Wastes: Do not dump into sewers, on the ground or into any waterways. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations.
- Contaminated Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied. Do not cut, drill, grind or weld on or near the container.
- RCRA: A waste containing this product may have the RCRA hazardous waste no. D002 (Corrosive) and D001 (Ignitable) (40 CFR 261.22).

SECTION 14. TRANSPORT INFORMATION

- UN/ID No.: UN1760
- Proper Shipping Name: Corrosive Liquids, n.o.s., (Sodium Hydroxide, Monoethanolamine)
- Hazard Class: 8
- Packing Group: II

United States D.O.T.:

- USA: Label has to comply with OSHA Hazard Communication Standard (29 CFR 1910.1200)
- 49 CFR §173.154 (b) (1) (Exemption): This product can ship as “Limited Quantity” in inner packaging not over 0.3 gallons (1.1 Liter). (Non Hazardous)

IATA and IMDG:

- IATA: Quantity limitations, passenger = 1L, cargo = 30L
- IMDG: Location B

SECTION 15. REGULATORY INFORMATION

TSCA: All components of this product are on the TSCA inventory or are exempt from TSCA inventory requirements under 40 CFR 720.30.

SARA Section 302: The components of this product are either not regulated or regulated, but present in negligible concentrations.

SARA TITLE III Section 311/312:

- Immediate (Acute) Health = Yes
- Delayed (Chronic) Health = Yes
- Fire Hazard = Yes
- Reactive Hazard = Yes

SARA Title 313: This material contain s the following chemical components with known CAS numbers subject to reporting requirements (40 CFR 372): Ethylene Glycol Butyl Ether CAS# 111-76-2 Reporting threshold = 1.0%.

CERCLA: This product has a reportable quantity of 6,667 lbs. (Sodium hydroxide), but is not considered a Hazardous Substance since the quantity of sodium hydroxide does not equal or exceed the RQ in one package (49 CFR 171.8, definition of “Hazardous Substance”).

United States Right-To-Know: New Jersey & Pennsylvania – Dipropylene glycol methyl ether CAS# 34590-94-8.

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

RCRA: A waste containing this product may have the RCRA hazardous waste no. D002 (Corrosive) and D001 (Ignitable)(40 CFR 261.22).

SECTION 16. OTHER INFORMATION

- Carefully read all instructions on label before handling this product.
- Keep out of reach of children.
- “FOR INDUSTRIAL USE ONLY”

The information contained herein is based on data available to us and is believed to be correct. We make no warranty, however, expressed or implied regarding the accuracy of these data or the results obtained from the use thereof.

Regulatory Standards: DOT TITLE 49, Code of Federal Regulations 172.101: Parts 100 to 177, Revised 10/1/92.

SUPER FUND AMENDMENTS REAUTHORIZATION ACT OF 1986, TITLE III TOXIC SUBSTANCE CONTROL ACT LIST (TSCA)- INGREDIENTS LISTED. REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES NATIONAL TOXICOLOGICAL PROGRAM (NTP) REPORT OF CARCINOGENS INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) MONOGRAPHS, OCCUPATIONAL SAFETY & HEALTH REGULATIONS. CODE OF FED. REGS. FOOD & DRUG, 21 PARTS 170 to 199, Revised 4/1/91, 173.310.