

MATERIAL SAFETY DATA SHEET

EMPOWER

Dual Enzymatic Detergent

1 - IDENTIFICATION

Manufacturer: Metrex Research
Address: 28210 Wick Road
City, State, Zip: Romulus, MI 48174
Telephone: 1-800-841-1428
Emergency: Chemtrec 1- 800-424-9300
Date Prepared: February 2011

2 - COMPOSITION INFORMATION

Hazardous Ingredients

	<u>CAS #</u>	<u>PEL</u>	<u>TLV</u>	<u>%</u>
Propylene glycol	57-55-6	NE	NE	10 - 30
Sodium Citrate Dihydrate	6132-04-3	NA	NE	5 - 10
Proteinase subtilisin	9014-92-6	NE	NE	0.1 - 1

3 - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 100 °C to 105 °C (212 to 221°F)

Specific Gravity (H₂O = 1) : >1.07

Vapor Pressure (mm Hg): Not determined

Vapor Density (AIR = 1): > 1.015 g/ml

Solubility: Cold water and hot water.

Appearance: Solution is clear blue.

Odor: coastal breeze scent

pH: 6.5 – 8.6

Relative density: 1.07 (H₂O=1)

Evaporation Rate: <1 (butyl Acetate = 1)

4 - FIRE AND EXPLOSION HAZARD DATA

Flammability of the product: In a fire or if heated, a pressure increase will occur and the container may burst.

Flammable Limits: LEL: N/A **UEL:** N/A

Extinguishing Media: Use an extinguishing agent suitable for the surrounding fire.

Special Fire Fighting Procedures: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazardous thermal decomposition products: Decomposition products may include the following materials: Carbon dioxide, carbon monoxide, nitrogen oxides, and volatile organic compounds

5 - REACTIVITY DATA

Stability: The product is stable.

Conditions to Avoid: Avoid excessive heat. Avoid evaporation.

Incompatibility & Reactive (Material to Avoid): Oxidizing materials, reducing materials, acids and alkalis.

Hazardous Decomposition: Under normal conditions of storage and use, hazardous decomposition will not occur

Hazardous Polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur.

6 - HEALTH HAZARD DATA

Routes of Entry: Dermal Contact. Eye Contact. Inhalation.

Skin: Irritating to skin.

Eyes: Severely irritating to eyes. Risk of serious damage to eyes.

Inhalation: Irritating to respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion: No known significant effects or critical hazards.

8 – TOXICOLOGICAL INFORMATION

Acute Toxicity:

<u>Product/ingredient name</u>	<u>Result</u>	<u>Species</u>	<u>Dose</u>	<u>Exposure</u>
Propylene glycol	LD50 Dermal	Rabbit	20800 mg/kg	-
	LD50 Oral	Rat	20 g/kg	-

Chronic Toxicity: Not available

Conclusion/Summary: Contains material that may cause target organ damage, based on animal data

Irritation/Corrosion:

Not available

Skin: May cause skin irritation.

Eyes: May cause eye irritation.

Respiratory: May cause respiratory irritation

Sensitizer:

Not available.

Conclusion/Summary: Not available

Skin: Not available

Carcinogenicity Classification: Not available.

Mutagenicity: Not available.

Teratogenicity: Not available.

Reproductive toxicity: Not available.

8 - EMERGENCY FIRST AID PROCEDURES

Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms persist.

Eyes: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Inhalation: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention immediately.

Note: This MSDS was prepared in accordance with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and is to be used only for this product. The information contained in this MSDS is, to the best of our knowledge, believed to be accurate.

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8 - EMERGENCY FIRST AID PROCEDURES

Ingestion: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms persist.

Note to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

8 - PRECAUTIONS FOR SAFE HANDLING & USE

Precautions to be taken in Handling: Wash hands before eating, drinking, chewing gum, or using the toilet. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Avoid breathing vapor or mist. Empty containers retain product residue and can be hazardous. Do not reuse container.

Precautions to be taken for storage: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink.

8 - PRECAUTIONS FOR SAFE HANDLING & USE

Precautions to be taken for storage:

Keep container tightly closed and sealed until ready for use.

Containers that have been opened must be carefully resealed and kept

upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Other Precautions: Keep out of reach of children. Do not ingest. Avoid skin and eye contact. Avoid contamination of food.

9 - CONTROL MEASURES

Ingredient	Exposure limits
Propylene glycol	AIHA WEEL (United States, 1/2009). TWA: 10 mg/m ³ 8 hour(s).

Engineering measures: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Work/Hygiene Practices: Handle in accordance with good personal hygiene and safety practices. These practices include avoiding unnecessary exposure.

Personal Protection:

Hands: If a risk assessment indicates gloves are necessary, Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products.

Eye Protection: If risk assessment indicates safety eyewear is needed, safety eyewear complying with an approved standard should be used to avoid exposure to liquid splashes, mists or dusts.

Respiratory: If a risk assessment indicates that respirators are needed, use a properly fitted, air-purifying or air-fed respirator complying with an approved standard this is necessary.

9 - CONTROL MEASURES

Respiratory: Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Skin: Based on the risks assessment, personal protective equipment for the body should be selected based on the task being performed and recommendations.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

10 - TRANSPORTATION INFORMATION

Waste Disposal: The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

11 - TRANSPORTATION INFORMATION

TDG/IMDG/IATA: Not regulated.

12 - SPECIAL INFORMATION

HMIS (Hazardous Material Identification System) Rating:

Health 2 Flammability 0 Physical Hazard 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). The customer is responsible for determining the PPE code for this material.

National Fire Protection Association:

Health 2 Flammability 0 Instability 0

Note: To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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