

**1. Identification**

**Product identifier** MRD 2

**Other means of identification**

**SDS number** 538N93C

**Product code** HIL00157

**Recommended use** Degreaser

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

**Manufacturer**

**Company name** HILLYARD INDUSTRIES

**Address** 302 North Fourth St.  
 St. Joseph, MO 64501

**Contact person** Regulatory Affairs

**Telephone number** (816) 233-1321 (Ext. 8285)

**Fax** (816) 383-8485

**E-mail** regulatoryaffairs@hillyard.com

**Emergency telephone #** (800) 424-9300

(Only in the event of chemical emergency involving a spill, leak, fire, exposure, or accident involving chemicals.)

**2. Hazard(s) identification**

**Physical hazards** Not classified.

**Health hazards** Acute toxicity, inhalation Category 4  
 Skin corrosion/irritation Category 1  
 Serious eye damage/eye irritation Category 1

**Environmental hazards** Hazardous to the aquatic environment, acute hazard Category 3

**OSHA defined hazards** Not classified.

**Label elements**



**Signal word** Danger

**Hazard statement** Causes severe skin burns and eye damage. Causes serious eye damage. Harmful if inhaled. Harmful to aquatic life.

**Precautionary statement**

**Prevention** Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

**Response** If swallowed: Do not induce vomiting. Drink large quantities of water. Call a physician immediately. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse.

**Storage** Store locked up.

**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified (HNOC)** None known.

Supplemental information None.

### 3. Composition/information on ingredients

#### Mixtures

| Chemical name                            | Common name and synonyms | CAS number | %        |
|--|--------------------------|------------|----------|
| Ethylene glycol monobutyl ether          |                          | 111-76-2   | 3 - < 5  |
| Silicic acid, Sodium Salt                |                          | 6834-92-0  | 1 - < 3  |
| POTASSIUM HYDROXIDE                      |                          | 1310-58-3  | < 1      |
| Other components below reportable levels |                          |            | 90 - 100 |

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

### 4. First-aid measures

|   |  |
|---|--|
| <b>Inhalation</b>   | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.  |
| <b>Skin contact</b>   | Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.   |
| <b>Eye contact</b>  | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.  |
| <b>Ingestion</b>  | Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.  |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.  |
| <b>Indication of immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed. |
| <b>General information</b>  | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.   |

### 5. Fire-fighting measures

|  |   |
|--|---|
| <b>Suitable extinguishing media</b>                                  | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).                      |
| <b>Unsuitable extinguishing media</b>                                | Do not use water jet as an extinguisher, as this will spread the fire.                        |
| <b>Specific hazards arising from the chemical</b>                    | During fire, gases hazardous to health may be formed.   |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |
| <b>Fire fighting equipment/instructions</b>                          | Move containers from fire area if you can do so without risk.                                 |
| <b>Specific methods</b>  | Use standard firefighting procedures and consider the hazards of other involved materials.    |
| <b>General fire hazards</b>  | No unusual fire or explosion hazards noted.   |

### 6. Accidental release measures

|  |  |
|--|--|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. |
|--|--|

## Methods and materials for containment and cleaning up

This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent product from entering drains. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

## Environmental precautions

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

## 7. Handling and storage

### Precautions for safe handling

Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

### Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components                                     | Type | Value               |
|--|------|---------------------|
| Ethylene glycol monobutyl ether (CAS 111-76-2) | PEL  | 240 mg/m3<br>50 ppm |

#### US. ACGIH Threshold Limit Values

| Components                                     | Type    | Value   |
|--|---------|---------|
| Ethylene glycol monobutyl ether (CAS 111-76-2) | TWA     | 20 ppm  |
| POTASSIUM HYDROXIDE (CAS 1310-58-3)            | Ceiling | 2 mg/m3 |

#### US. NIOSH: Pocket Guide to Chemical Hazards

| Components                                     | Type | Value             |
|--|------|-------------------|
| Ethylene glycol monobutyl ether (CAS 111-76-2) | TWA  | 24 mg/m3<br>5 ppm |
| POTASSIUM HYDROXIDE (CAS 1310-58-3)            | TWA  | 2 mg/m3           |

### Biological limit values

#### ACGIH Biological Exposure Indices

| Components                                     | Value    | Determinant                              | Specimen            | Sampling Time |
|--|----------|--|---------------------|---------------|
| Ethylene glycol monobutyl ether (CAS 111-76-2) | 200 mg/g | Butoxyacetic acid (BAA), with hydrolysis | Creatinine in urine | *             |

\* - For sampling details, please see the source document.

### Exposure guidelines

#### US - California OELs: Skin designation

Ethylene glycol monobutyl ether (CAS 111-76-2) Can be absorbed through the skin.

#### US - Minnesota Haz Subs: Skin designation applies

Ethylene glycol monobutyl ether (CAS 111-76-2) Skin designation applies.

#### US - Tennessee OELs: Skin designation

Ethylene glycol monobutyl ether (CAS 111-76-2) Can be absorbed through the skin.

#### US NIOSH Pocket Guide to Chemical Hazards: Skin designation

Ethylene glycol monobutyl ether (CAS 111-76-2) Can be absorbed through the skin.

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Ethylene glycol monobutyl ether (CAS 111-76-2) Can be absorbed through the skin.

**Appropriate engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Chemical goggles are recommended.

**Skin protection**

**Hand protection** Wear appropriate chemical resistant gloves.

**Other** Impervious boots and aprons where splashing of concentrate is a problem; otherwise, use uniforms or coveralls.

**Respiratory protection** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Chemical respirator with organic vapor cartridge.

**Thermal hazards** Not applicable.

**General hygiene considerations** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**9. Physical and chemical properties**

**Appearance** Clear, pale yellow liquid

**Physical state** Liquid.

**Form** Liquid.

**Color** Pale yellow

**Odor** Butyl cellosolve odor

**Odor threshold** Not available

**pH** 13 - 14 Concentrate

**Melting point/freezing point** Not applicable / Not available

**Initial boiling point and boiling range** 216 °F (102.22 °C)

**Flash point** > 200.0 °F (> 93.3 °C) Tag Closed Cup

**Evaporation rate** < 1 Ethyl ether = 1

**Flammability (solid, gas)** Not available.

**Upper/lower flammability or explosive limits**

**Explosive limit - lower (%)** Not available.

**Explosive limit - upper (%)** Not available.

**Vapor pressure** 17.4 mm Hg

**Vapor density** 0.7 Air=1

**Relative density** 1.033 at 77°F

**Solubility(ies)**

**Solubility (water)** Appreciable

**Partition coefficient (n-octanol/water)** Not available

**Auto-ignition temperature** Not available

**Decomposition temperature** Not available

**Viscosity** Not available

**Other information**

**Density** 8.60 lb/gal

**Percent volatile** 92 - 93 %

**VOC (Weight %)** 5.19 %

**10. Stability and reactivity**

**Reactivity** Reacts violently with strong acids. This product may react with oxidizing agents.

|   |   |
|---|---|
| <b>Chemical stability</b>                 | Material is stable under normal conditions.   |
| <b>Possibility of hazardous reactions</b> | Hazardous polymerization does not occur.  |
| <b>Conditions to avoid</b>                | Avoid temperatures exceeding the flash point. Do not mix with other chemicals. Contact with incompatible materials. |
| <b>Incompatible materials</b>             | Acids. Oxidizing agents.  |
| <b>Hazardous decomposition products</b>   | No hazardous decomposition products are known.  |

## 11. Toxicological information

### Information on likely routes of exposure

**Inhalation** Harmful if inhaled.

**Skin contact** Causes severe skin burns.

2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.

**Eye contact** Causes serious eye damage.

**Ingestion** Causes digestive tract burns.

**Symptoms related to the physical, chemical and toxicological characteristics** Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

### Information on toxicological effects

**Acute toxicity** Harmful if inhaled.

| Product  | Species        | Test Results   |
|--|----------------|--|
| MRD 2  |                |  |
| <b>Acute</b>                                   |                |  |
| <i>Dermal</i>                                  |                |  |
| LD50   | Rabbit         | 13333.333 mg/kg estimated<br>9008.3271 ml/kg estimated   |
| <i>Inhalation</i>                              |                |  |
| LC50   | Mouse          | 25875 mg/l, 4 Hours estimated<br>25000 mg/l, 2 Hours estimated<br>23333.334 ppm, 7 Hours estimated |
|  | Rat            | 51250 mg/l, 0.5 Hours estimated<br>30000 mg/l, 4 Hours estimated<br>15000 ppm, 4 Hours estimated   |
| <i>Oral</i>                                    |                |  |
| LD50   | Guinea pig     | 40 g/kg estimated  |
|  | Mouse          | 40 g/kg estimated  |
|  | Rabbit         | 10.6667 g/kg estimated   |
|  | Rat            | 9403.2031 mg/kg estimated  |
| <b>Components</b>                              | <b>Species</b> | <b>Test Results</b>  |
| Ethylene glycol monobutyl ether (CAS 111-76-2) |                |  |
| <b>Acute</b>                                   |                |  |
| <i>Dermal</i>                                  |                |  |
| LD50   | Rabbit         | 400 mg/kg  |
| <i>Inhalation</i>                              |                |  |
| LC50   | Mouse          | 700 ppm, 7 Hours   |
|  | Rat            | 450 ppm, 4 Hours   |
| <i>Oral</i>                                    |                |  |
| LD50   | Guinea pig     | 1.2 g/kg   |

| Components                                | Species | Test Results |
|---|---------|--------------|
|   | Mouse   | 1.2 g/kg     |
|   | Rabbit  | 0.32 g/kg    |
|   | Rat     | 560 mg/kg    |
| POTASSIUM HYDROXIDE (CAS 1310-58-3)       |         |              |
| <b>Acute</b>                              |         |              |
| <i>Oral</i>                               |         |              |
| LD50                                      | Rat     | 273 mg/kg    |
| Silicic acid, Sodium Salt (CAS 6834-92-0) |         |              |
| <b>Acute</b>                              |         |              |
| <i>Oral</i>                               |         |              |
| LD50                                      | Mouse   | 2400 mg/kg   |
|   | Rat     | 1280 mg/kg   |

\* Estimates for product may be based on additional component data not shown.

|  |  |
|--|--|
| <b>Skin corrosion/irritation</b>         | Causes severe skin burns and eye damage.   |
| <b>Serious eye damage/eye irritation</b> | Causes serious eye damage.   |
| <b>Respiratory or skin sensitization</b> |  |
| <b>Respiratory sensitization</b>         | Not a respiratory sensitizer.  |
| <b>Skin sensitization</b>                | This product is not expected to cause skin sensitization.  |
| <b>Germ cell mutagenicity</b>            | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| <b>Carcinogenicity</b>                   | Classification not possible.   |

#### IARC Monographs. Overall Evaluation of Carcinogenicity

Ethylene glycol monobutyl ether (CAS 111-76-2) 3 Not classifiable as to carcinogenicity to humans.

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

|   |  |
|---|--|
| <b>Reproductive toxicity</b>                              | This product is not expected to cause reproductive or developmental effects.   |
| <b>Specific target organ toxicity - single exposure</b>   | Not classified.  |
| <b>Specific target organ toxicity - repeated exposure</b> | Not classified.  |
| <b>Aspiration hazard</b>                                  | Not an aspiration hazard.  |
| <b>Chronic effects</b>                                    | May be harmful if absorbed through skin. Prolonged inhalation may be harmful.<br><br>2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.<br><br>Prolonged exposure may cause chronic effects. |

## 12. Ecological information

**Ecotoxicity** Harmful to aquatic life.

| Product  | Species                                    | Test Results                        |
|--|--|-------------------------------------|
| MRD 2  |  |                                     |
| <b>Aquatic</b>                                 |  |                                     |
| Crustacea                                      | EC50 Daphnia                               | 44003.1992 mg/l, 48 hours estimated |
| <i>Acute</i>                                   |  |                                     |
| Fish   | LC50 Fish                                  | 6060 mg/l, 96 hours estimated       |
| Components                                     | Species                                    | Test Results                        |
| Ethylene glycol monobutyl ether (CAS 111-76-2) |  |                                     |
| <b>Aquatic</b>                                 |  |                                     |
| Fish   | LC50 Inland silverside (Menidia beryllina) | 1250 mg/l, 96 hours                 |

| Components | Species | Test Results |
|------------|---------|--------------|
|------------|---------|--------------|

POTASSIUM HYDROXIDE (CAS 1310-58-3)

**Aquatic**

Fish LC50 Western mosquitofish (*Gambusia affinis*) 80 mg/l, 96 hours

\* Estimates for product may be based on additional component data not shown.

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential**

**Partition coefficient n-octanol / water (log Kow)**

Ethylene glycol monobutyl ether 0.83

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. Buyer assumes all risk and liability associated with disposal of this product (original concentration or dilution) in violation of applicable law.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Waste from normal product use may be sewerered to a public owned treatment works (POTW) in compliance with applicable Federal, State, and local pretreatment requirements.

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Triple rinse (or equivalent). Then offer clean, dry container for recycling or reconditioning.

### 14. Transport information

**DOT**

**UN number** NA1760

**UN proper shipping name** Compound, cleaning, liquid (Potassium hydroxide)

**Transport hazard class(es)**

**Class** 8

**Subsidiary risk** -

**Label(s)** 8

**Packing group** III

**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**DOT**



**General information**

PACKAGES 1 GALLON AND SMALLER ARE SHIPPED LIMITED QUANTITY OR ORM-D. This material is regulated under IATA and IMDG regulations contact manufacturer for shipping instructions.

### 15. Regulatory information

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

POTASSIUM HYDROXIDE (CAS 1310-58-3) Listed.

**SARA 304 Emergency release notification**

Not regulated.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - Yes  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** No

**SARA 313 (TRI reporting)**

Not regulated.

**Other federal regulations**

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

**US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)**

Not listed.

**US. Massachusetts RTK - Substance List**

Ethylene glycol monobutyl ether (CAS 111-76-2)  
POTASSIUM HYDROXIDE (CAS 1310-58-3)

**US. New Jersey Worker and Community Right-to-Know Act**

Ethylene glycol monobutyl ether (CAS 111-76-2)  
POTASSIUM HYDROXIDE (CAS 1310-58-3)

**US. Pennsylvania Worker and Community Right-to-Know Law**

Ethylene glycol monobutyl ether (CAS 111-76-2)  
POTASSIUM HYDROXIDE (CAS 1310-58-3)

**US. Rhode Island RTK**

POTASSIUM HYDROXIDE (CAS 1310-58-3)

**US. California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

| Country(s) or region        | Inventory name                                | On inventory (yes/no)* |
|-----------------------------|---|------------------------|
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes                    |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision**

**Issue date** 01-29-2015  
**Version #** 01  
**HMIS® ratings** Health: 3  
Flammability: 0  
Physical hazard: 0

**Disclaimer**

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