

## Material Safety Data Sheet

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### Section I - Chemical Product And Company Identification

#### Product Name: Rinsolve EB

CAS Number: 111-76-2

HBCC MSDS No. CB13000



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### Section II - Composition/Information On Ingredients

Chemical Name	CAS Number	Exposure Limits (TWAs) in Air		
		ACGIH TLV	OSHA PEL	STEL
Ethylene Glycol Monobutyl Ether	111-76-2	20 ppm (skin)	50 ppm (skin)	N/A

### Section III - Hazard Identification

**Routes of Exposure:** Rinsolve EB can affect the body if it is inhaled, swallowed, or comes in contact with the eyes or skin. It may enter the body through the skin.

#### Summary of Acute Health Hazards

**Ingestion:** Moderately toxic. May cause headache, dizziness, incoordination, nausea, vomiting, diarrhea, and general weakness. Ingestion may cause red blood cell hemolysis and possible liver and kidney injury.

**Inhalation:** High concentrations of vapor cause irritation to the respiratory tract, experienced as nasal discomfort and discharge with chest pain and coughing. May cause headache, dizziness, nausea, vomiting and malaise. Toxic and harmful if inhaled.

**Skin:** Brief contact with undiluted material may cause slight reddening. More prolonged and widespread contact, as with chemical-saturated clothing, may cause moderate reddening, swelling, and possible damage to the skin. This material penetrates the skin readily, and this may account for more absorption than does inhalation in some cases.

**Eyes:** The liquid is damaging to the eye, producing pain, conjunctival irritation, and transitory injury to the cornea. Effects may be slow to heal. Vapor may cause eye irritation experienced as mild discomfort.

**Summary of Chronic Health Hazards:** Repeated overexposure may cause hemolysis of the red blood cells leading to possible liver and kidney damage.

**Medical Conditions Generally Aggravated by Exposure:** Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product. Impaired function from pre-existing disorders may be aggravated by exposure to this product. Overexposure to the material has been suggested as a cause of the following effects in laboratory animals: mild, reversible spleen effects, blood abnormalities, liver abnormalities, kidney damage. Developmental Information: This material has been

shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain.

**Note to Physicians:** There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

#### Section IV - First Aid Measures

**Ingestion:** Do not induce vomiting. If conscious have victim rinse mouth out with water, then drink sips of water to remove taste from mouth. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. GET MEDICAL ATTENTION IMMEDIATELY.

**Inhalation:** If a person breathes in large amounts of this chemical, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the affected person warm and at rest. GET MEDICAL ATTENTION AS SOON AS POSSIBLE.

**Skin:** Promptly wash the contaminated skin using soap or mild detergent and water for at least 15 minutes. If chemical soaks through the clothing, remove the clothing promptly and wash the skin using soap or mild detergent and water. If irritation persists or contact has been prolonged, obtain medical attention.

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes while forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. GET MEDICAL ATTENTION IMMEDIATELY. Contact lenses should not be worn when working with this chemical.

#### Section V - Fire Fighting Measures

**Flash Point:** 65°C; 149°F

**Autoignition Temperature:** 224°C; 435°F

**Lower Explosive Limit:** 1.3%

**Upper Explosive Limit:** 10.6%

**Unusual Fire and Explosion Hazards:** This material may produce a floating fire hazard in extreme fire conditions. Vapors can flow along surfaces to distant ignition source and flash back. Contact with strong oxidizers may cause fire. Sensitive to static discharge. Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

**Extinguishing Media:** Use carbon dioxide or dry chemical for small fires. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Do not use a solid stream of water, since the stream will scatter and spread the fire. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.

**Special Firefighting Procedures:** Use self-contained breathing apparatus with full face respirator operated in the pressure mode or other positive pressure mode. Wear protective clothing.

#### Section VI - Accidental Release Measures

Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Wear appropriate personal protective equipment when responding to spills. Shut off source of leak if safe to do so. Dike and contain spill. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. Flush area with water to remove trace residue. Contain run-off from residue flush and dispose of

properly. Prevent runoff from entering drains, sewers, streams, basements or confined areas.

### Section VII - Handling and Storage

Keep away from heat and open flame. Keep container closed when not being used. Use with adequate ventilation. Wash thoroughly after handling. Avoid contact with aluminum surfaces. Do not store in aluminum, copper, galvanized iron, or galvanized steel.

**Other Precautions:** Persons not wearing protective equipment and clothing should be restricted from areas of spills or leaks until cleanup has been completed. Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources.

### Section VIII - Exposure Controls/Personal Protection

**Respiratory Protection:** Self-contained breathing apparatus in high vapor concentrations. When respiratory protection is required for certain operations, use an approved air-purifying respirator with organic vapor cartridge.

**Ventilation:** This product should be handled in covered equipment, in which case general (mechanical) room ventilation is expected to be satisfactory. Special, local ventilation may be needed at points where vapors can be expected to escape to the workplace air.

**Protective Clothing:** Employees should be provided with and required to use impervious clothing, butyl gloves, chemical goggles and other appropriate protective clothing necessary to prevent repeated or prolonged skin contact. If exposure causes eye discomfort, use a full-face respirator.

**Other Protective Clothing or Equipment:** Eye wash and safety shower should be provided in work area.

**Work/Hygienic Practices:** Avoid contact with the eyes, skin, and clothing. Avoid breathing vapors. Employees who handle liquid material should wash their hands thoroughly before eating, smoking, or using toilet facilities. Do NOT place food, coffee or other drinks in the area where dusting or splashing of solutions is possible.

### Section IX - Physical and Chemical Properties

**Physical State:** Liquid

**pH:** N/A

**Melting Point/Range:** N/A

**Boiling Point/Range:** 336-343°F

**Appearance/Color/Odor:** Colorless, clear liquid with mild odor

**Solubility in Water:** 100%

**Vapor Pressure (mmHg):** 0.9 @ 20°C;  
68°F

**Specific Gravity(Water=1):** 0.9 @  
68°F

**Molecular Weight:** 118.2 g/mol

**Density(Air=1):** 4.1

**% Volatiles:** 100%

**Evaporation Rate, (Bu-Ac=1):** 0.06

**Freezing Point:** -77°C; -107°F

**How to detect this compound :** N/A

**Lbs./Gal.:** 7.5

**VOC's:** 7.5 Lbs/Gal. @ 77°F

### Section X - Stability and Reactivity

**Stability:** Stable

**Hazardous Polymerization:** Will not occur

**Conditions to Avoid:** Heat, open flames. Do not distill to dryness. Avoid excessive

temperature or prolonged reflux, such as in batch distillations.

**Materials to Avoid:** Contact with strong oxidizing agents may cause fires and explosions. Contact with strong caustics may cause decomposition. Contact with acids, and strong alkalis.

**Hazardous Decomposition Products:** Toxic gases and vapors (such as carbon monoxide and carbon dioxide) may be released in a fire. Thermal decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include aldehyds, ketones, organic acids.

### Section XI - Toxicological Information

Rinsolve EB irritates the eyes and upper respiratory tract and is a hemolytic agent. The LC50 for mice was 700 ppm, with death due to lung and kidney injury. Repeated exposures of 100 to 400 ppm were non-lethal but caused visceral effects in animals: at the higher concentrations rats exhibited greatly increased erythrocyte fragility, hemoglobinuria and hematuria, pulmonary hemorrhage, and liver injury; at lower concentrations, increased red-cell fragility was the most sensitive criterion of effect, however transitory. The substance is metabolized to butoxyacetic acid, which appears in the urine of animals and man promptly following exposure, both are hemolytic agents. Human subjects inhaling Rinsolve EB at 200 ppm for 8 hours had discomfort of the eyes, nose, and throat, although there were no objective signs of injury or increase in erythrocytic fragility; some individuals complained of discomfort at 100 ppm.

### Section XII - Ecological Information

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is high (Koc between 50 and 150). Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in most sensitive species tested).

### Section XIII - Disposal Considerations

The preferred options for disposal are to send to licensed reclaimers, or to permitted incinerators. Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

### Section XIV - Transport Information

**DOT Proper Shipping Name:** Combustible Liquid, N.O.S. (ethylene glycol monobutyl ether)

**DOT Hazard Class/ I.D. No.:** Combustible Liquid, NA1993, III

**Transportation Data:** Rinsolve EB or any of its other names is not listed in section 172.101 of the D.O.T. Hazardous Materials Tables. Therefore, as shown on the front page, it is listed as Combustible Liquid, N.O.S., NA1993. In section 172.102 of the D.O.T. Hazardous Materials Tables, which is for International shipments, Rinsolve EB is found under Ethylene Glycol Monobutyl Ether, UN2369.

### Section XV - Regulatory Information

**Reportable Quantity:** N/A

**NFPA Rating:** Health - 2; Flammability - 2; Instability - 0  
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

**Uniform Fire Rating Code:** Class IIIA Combustible Liquid

**Carcinogenicity Lists:** No **NTP:** No **IARC Monograph:** No **OSHA Regulated:** No

**Section 313 Supplier Notification:** This product contains the following toxic chemical(s) subject to the reporting requirements of SARA TITLE III Section 313 of

the Emergency Planning and Community Right-To Know Act of 1986 and of 40 CFR 372:

<u>CAS #</u>	<u>Chemical Name</u>	<u>% By Weight</u>
N/A	Glycol Ethers	100%

#### **Section XVI - Other Information**

**Synonyms/Common Names:** 2-Butoxyethanol; Ehtylene Glycol Monobutyl Ether

**Chemical Family/Type:** Glycol Ethers

**Sections changed since last revision:** III, V, VII, VIII, IX, X, XII

**IMPORTANT!** Read this MSDS before use or disposal of this product. Pass along the information to employees and any other persons who could be exposed to the product to be sure that they are aware of the information before use or other exposure. This MSDS has been prepared according to the OSHA Hazard Communication Standard [29 CFR 1910.1200]. The MSDS information is based on sources believed to be reliable. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, [Hill Brothers Chemical Company](#) makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Also, additional information may be necessary or helpful for specific conditions and circumstances of use. It is the user's responsibility to determine the suitability of this product and to evaluate risks prior to use, and then to exercise appropriate precautions for protection of employees and others.