MATERIAL SAFETY DATA SHEET

Supplier's Name:
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SECTION 1 - PRODUCT INFORMATION

Trade Name: L-21
Chemical Family: Aqueous Based Solution
DOT Classification:
Proper Shipping Name: Non-Hazardous Solution
Hazard Class/Division: N/A
Identification Number: N/A
Packing Group: N/A
Label: Non-Hazardous Solution

HMIS Rating (0-4):
Health: 1
Fire: 1
Reactivity: 0

Rating Scale: 0 - Minimal
1 - Slight
2 - Moderate
3 - High
4 - Severe

SECTION 2 - HAZARDOUS INGREDIENTS INFORMATION

Product Name	CAS No.(s)	Vapor Pressure (mm Hg)	TLV	Units
Glycol Ether EB	111-76-2	.6	25	PPM
Chemical Name		**Percent**	**PEL**	**Units**
Ethanol, 2-Butoxy		>9%	25	PPM
Product Name	**CAS No.(s)**	**Vapor Pressure (mm Hg)**	**TLV**	
Water	7732-18-5	N/A	N.E.	
Chemical Name		**Percent**	**PEL**	
Water		>9%	N.E.	

SECTION 3 - PHYSICAL DATA

Appearance: Colorless Liquid
Odor: Relatively Mild
Boiling Point: 212° F - 340° F
Freezing Point: 32° F

Vapor Density: Heavier than air
Evaporation Rate: Slower than ether
Weight Per Gallon: 8.06 lbs./gal
Percent volatile by volume: 100%

SECTION 4 – REACTIVITY DATA

Stability: Stable
Incompatibility: Strong Bases
Conditions to avoid: None
Hazardous Polymerization: Will not occur.
Hazardous Decomposition Products: Carbon monoxide. Carbon dioxide.

SECTION 5 - FIRE AND EXPLOSION HAZARDS

Hazard Classification: **OSHA:** Combustible Liquid-Class 111B
Flashpoint (TCC): >200° F
Extinguishing Media: Carbon Dioxide. Dry Chemical. Alcohol-type foam. Water spray. Universal-type foam.
Special Firefighting Procedures: Use self-contained breathing apparatus. Wear full protective clothing.
Lower Explosion Limit % by volume (in air): >1.1
Unusual Fire and Explosion Hazards: None

SECTION 6 – HEALTH HAZARDS

Exposure Limit(s): Ethylene Glycol, Monobutyl Ether: 25 PPM TWA (skin), OSHA, and ACGIH
Ethylene Glycol: 100 mg/m^3 (39.4 PPM) Ceiling, Aerosol, ACGIH
127 mg/m^3 (50 PPM) Ceiling, Vapor and Mist, OSHA Union Carbide recommendation:
100 mg/m^3 (39.4 PPM) Ceiling, Aerosol and Vapor

EFFECTS OF ACUTE OVEREXPOSURE:

Swallowing: Moderately toxic. May cause headache, dizziness, incoordination, nausea, vomiting, diarrhea, and general weakness. Ingestion of significant quantities may result in red blood cell hemolysis.

Skin Absorption: Effects may include those described for swallowing. Moderately toxic. Prolonged or widespread contact may result in the absorption of potentially harmful amounts of material.

Inhalation: High concentrations of vapor cause irritation of the respiratory tract, experienced as nasal discomfort and discharge, with chest pain and coughing. Headache, nausea, vomiting, dizziness, and drowsiness may occur.

Skin Contact: Brief contact may cause slight irritation with itching and local redness. Prolonged contact may cause more severe irritation, with discomfort or pain, local redness and swelling, and possible tissue destruction.

Eye Contact: Causes severe irritation experienced as discomfort or pain, excess blinking and tear production, with marked excess redness and swelling of the conjunctiva.

Effects of repeated overexposure

No adverse effects anticipated from available information.

Other health hazards

Has caused red blood cell hemolysis in laboratory animals and secondary injury to the kidney and liver. However, humans appear to be resistant to this effect.

Medical conditions aggravated by overexposure: Skin contact may aggravate an existing dermatitis.

Additional Toxicity Information:

Results of studies in laboratory animals indicate that Ethylene Glycol Monobutyl Ether does not cause specific toxic effects on development of offspring. This material does not cause increases in malformations even at dosages which produce clear evidence of maternal toxicity. The types of developmental effects noted at maternally toxic levels are consistent with those which might be anticipated in offspring from mothers suffering from toxic effects or stress as a result of chemical exposure.

In laboratory animal studies, large doses of Ethylene Glycol Monobutyl Ether have caused injury to liver and kidneys. This injury is believed to be secondary to red blood cell hemolysis, a known effect of this material in rodents. Humans are resistant to the hemolytic effects of Ethylene Glycol Monobutyl Ether and therefore the kidney and liver injury noted in animal studies is not considered relevant to human health hazard evaluation.

EMERGENCY AND FIRST AID PROCEDURES

Swallowing: If patient is fully conscious, give two glasses of water. Induce vomiting. Obtain medical attention.

Skin: Remove contaminated clothing. Wash skin with soap and water. If irritation persists or if contact has been prolonged, obtain medical attention.

Inhalation: Remove to fresh air.

Eyes: Immediately flush eyes with water and continue washing for at least 15 minutes. DO NOT REMOVE CONTACT LENSES IF WORN. Obtain medical attention without delay, preferably from an ophthalmologist.

NOTES TO PHYSICIAN: There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 7 – SPILL AND LEAK PROCEDURES

Steps to be taken if material is released or spilled: Small spills can be flushed with large amounts of water; large spills should be collected for disposal. Wear suitable protective equipment.

Waste disposal method: Incinerate in a furnace where permitted under Federal, State, and local regulations. At very low concentrations in water, this product is biodegradable in a biological wastewater treatment plant.

SECTION 8 – SAFE HANDLING AND USE INFORMATION

Respiratory Protection: If high concentrations of vapors are present, use a NIOSH approved respirator for organic vapors, fresh air breathing apparatus, or a self-contained breathing apparatus. Self-contained breathing apparatus is required in high vapor concentrations of 100% Glycol Ether EB (Butyl Cellosolve). High vapor concentrations are vapors that exceed the recommended TWA of 39.4 PPM. This means that this concentration of vapor would have to be present for a consecutive eight hour period. The concentration of Glycol Ether EB in this blend is 33%. The possibility of meeting or exceeding vapor levels with this blend is remote, particularly if this blend is used in an open, well ventilated area.

Ventilation: General (mechanical) room ventilation to maintain vapor levels below TLV is expected to be satisfactory. Keep this product in closed equipment. Special, local ventilation is needed at points where vapors or mists are expected to escape to the workplace air.

Protective Gloves: Consult the glove manufacturer for the most appropriate glove material.

Eye Protection: Chemical safety goggles.

Other Protective Equipment: Eye bath and safety shower.

SECTION 9 – SPECIAL PRECAUTIONS

Precautions to be taken in handling and storing: **WARNING!** Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Use with adequate ventilation. Keep away from heat and flame. Wash thoroughly after handling. Keep container closed. FOR INDUSTRIAL USE ONLY.

Other precautions: Contact lenses should not be worn.

Section 313 Supplier Notification

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

CAS #	Chemical Name	Percent by Weight
111-76-2	Glycol Ether EB	33%

SECTION 10 – ADDITIONAL INFORMATION

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