



Material Safety Data Sheet

LA1084
Vanblend Hydrate Breaker

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Id: LA1084
Product Name: Vanblend Hydrate Breaker
Synonyms: None
Chemical Family: None Known
Application: Not Available.

Distributed By:
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Prepared By: The Safety, Health and Environment Department of Univar Canada Ltd.
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2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS

Ingredients	Percentage (W/W)	LD50s and LC50s Route & Species:
Isopropyl alcohol 67-63-0	15-40	Dermal LD50 (Rabbit) 12800 mg/kg Inhalation LC50 (Rat) 12000 ppm/8H Oral LD50 (Mouse) 3600 mg/kg Oral LD50 (Rat) 5045 mg/kg
Methanol 67-56-1	15-40	Dermal LD50 (Rabbit) 15800 mg/kg Oral LD50 (Rat) 5628 mg/kg Inhalation LC50 (Rat) >32,000 ppm / 8hrs Oral LD50 (Mouse) 7300 mg/kg
Ethylene Glycol 107-21-1	10-30	Oral LD50 (Rat) 4700 mg/kg Oral LD50 (Mouse) 5500 mg/kg Dermal LD50 (Rabbit) 9530 µL/kg
Acetone 67-64-1	1-5	Oral LD50 (Mouse) 3 g/kg Inhalation LC50 (Mouse) 44 g/m ³ Inhalation LC50 (Rat) 50100 mg/m ³ Oral LD50 (Rat) 5800 mg/kg

Notes: No additional remark.

3. HAZARDS IDENTIFICATION

Potential Acute Health Effects:

Eye Contact: Causes moderate eye irritation. Liquid, vapor, or mist causes irritation, experienced as stinging, excess blinking and tear production, with excess redness of the conjunctiva.

Skin Contact: Causes moderate skin irritation. Prolonged or repeated skin contact may cause drying, cracking or irritation. May be absorbed through the skin in toxic or lethal amounts. Symptoms of exposure may include: Central nervous system depression with headache, stupor, uncoordinated or strange behaviour or unconsciousness. Prolonged and or repeated skin contact with methanol soaked material has produced toxic effects including vision effects and death.

Inhalation: Causes irritation of the mouth, nose and throat. Vapours are moderately irritating to the respiratory passages. Loss of consciousness may occur. Headache, nausea, vomiting, dizziness, and drowsiness may occur. High vapor concentrations caused, for example, by heating the material in an enclosed and poorly ventilated workplace, may produce nausea, vomiting, headache, dizziness, and irregular eye movements.

Ingestion: May be fatal if swallowed. May cause abdominal discomfort or pain, nausea, vomiting, dizziness, drowsiness, malaise, blurring of vision, irritability, lumbar pain, oliguria, uremia, and central nervous system effects, including irregular eye movements, convulsions and coma. A small amount of methanol (usually two or more ounces) can cause mental sluggishness, nausea and vomiting leading to severe illness, and may produce adverse effects on vision with possible blindness or death if treatment is not received. Cardiac failure, pulmonary edema, and severe kidney damage may develop.

4. FIRST AID MEASURES

Eye Contact: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Inhalation: Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Notes to Physician: Treatment based on sound judgment of physician and individual reactions of patient. A profound metabolic acidosis occurs in severe poisoning and serum bicarbonate levels are a more accurate measure of severity than serum methanol levels. Acute exposure to methanol, either through ingestion or breathing high airborne concentrations can result in symptoms appearing between 40 minutes and 72 hours after exposure. It is estimated that the oral dose to adults is of the order of 1.0 ml/kg. Ethylene glycol is metabolized by alcohol dehydrogenase to various metabolites including glycerinaldehydes, glycolic acid and oxalic acid which cause an elevated anion-gap metabolic acidosis and renal tubular injury. The signs and symptoms in ethylene glycol poisoning are those of metabolic acidosis, CNS depression and kidney injury. Urinalysis may show albuminuria, hematuria and oxaluria. Clinical chemistry may reveal anion-gap metabolic acidosis and uremia. The currently recommended medical management of ethylene glycol poisoning includes elimination of ethylene glycol and metabolites, correction of metabolic acidosis and prevention of kidney injury. It is essential to have immediate and follow up urinalysis and clinical chemistry. There should be particular emphasis on acid-base balance and renal function tests. A continuous infusion of 5% sodium bicarbonate with frequent monitoring of electrolytes and fluid balance is used to achieve correction of metabolic acidosis and forced diuresis. As a competitive substrate for alcohol dehydrogenase, ethanol is antidotal. Given in the early stages of intoxication, it blocks the formulation of nephrotoxic metabolites. A therapeutically effective blood concentration of ethanol is in the range 100 - 150 mg/dl and should be achieved by a rapid loading dose and maintained by intravenous infusion. For severe and/or deteriorating cases, hemodialysis may be required. Dialysis should be considered for patients who are symptomatic, have severe metabolic acidosis, a blood ethylene glycol concentration greater than 25 mg/dl, or compromise of renal functions.

A more effective intravenous antidote for physician use in 4-methylpyrazole, a potent inhibitor of alcohol dehydrogenases which effectively blocks the formation of toxic metabolites of ethylene glycol. It has been used to decrease the metabolic consequences of ethylene glycol poisoning before metabolic acidosis coma, seizures and renal failure have occurred. A generally recommended protocol is a loading dose of 15 mg/kg followed by 10 mg/kg every 12 hours for 4 doses and the 15 mg/kg every 12 hours until the ethylene glycol concentrations are below 20 mg/100ml. Slow intravenous infusion is required. Since 4-methylpyrazole is dialyzable, increased dosage may be necessary during hemodialysis. Additional therapeutic measures may include the administration of cofactors involved in the metabolism of ethylene glycol. Thiamine (100 mg) and pyridoxine (50 mg) should be given every six hours.

Pulmonary edema with hypoxemia has been described in a number of patients following poisoning with ethylene glycol. The mechanism of production has not been elucidated, but it appears to be non-cardiogenic in origin in several cases. Respiratory support with mechanical ventilation and positive end expiratory pressure may be required. There may be cranial nerve involvement in the late stages of toxicity from swallowed ethylene glycol. In particular, effects have been reported involving the seventh, eighth and ninth cranial nerves, presenting with bilateral facial paralysis, diminished hearing, and dysphagia.

5. FIRE FIGHTING MEASURES

Flash Point: -18 °C / -0 °F (Acetone)

Flash Point Method: Tag Closed Cup

Autoignition Temperature: >385 °C / >725 °F

Flammable Limits in Air (%): Lower: 2 Upper: 36

Extinguishing Media: Use DRY chemicals, CO₂, alcohol foam or water spray.

Special Exposure Hazards: Isolate and restrict area access. Stop leak only if safe to do so. Move containers from fire area if you can do it without risk. Fight fire from a safe distance and from a protected location. Use flooding quantities of water for fire and water spray or fog for vapours. Containers exposed to intense heat from fires should be cooled with water to prevent vapour pressure build-up which could result in container rupture. This material may produce a floating fire hazard in extreme fire conditions. This product can produce flammable vapors which may travel to a source of ignition and flash back. Concentrations of greater than 25% methanol in water can be ignited. Methanol burns with a clean clear flame that is almost invisible in daylight.

Special Protective Equipment: Fire fighters should wear full protective clothing, including self-contained breathing equipment. Do not walk through spilled product.

NFPA RATINGS FOR THIS PRODUCT ARE: HEALTH 1, FLAMMABILITY 3, REACTIVITY 0

HMIS RATINGS FOR THIS PRODUCT ARE: HEALTH 1, FLAMMABILITY 3, REACTIVITY 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures: Wear appropriate protective equipment. Do not walk through spilled product as it may be on fire and not visible. Avoid contact with spilled or released material. Immediately remove all contaminated clothing.

Environmental Precautionary Measures: Prevent entry into sewers or streams, dike if needed. Consult local authorities.

Procedure for Clean Up: Isolate hazard area and restrict access. Stop leak only if safe to do so. Remove ignition sources and work with non-sparking tools. Small spills: soak up with absorbent material and scoop into containers. Large spills: prevent contamination of waterways. Dike and pump into suitable containers. Clean up residual with absorbent material, place in appropriate container and flush with water.

7. HANDLING AND STORAGE

Handling: For industrial use only. Handle and open containers with care. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid inhalation of chemical. DO NOT handle or store near an open flame, heat, or other sources of ignition. Fixed equipment as well as transfer containers and equipment should be grounded to prevent accumulation of static charge. DO NOT pressurize, cut, heat, or weld containers. Empty containers may contain hazardous product residues. Keep the containers closed when not in use. Launder contaminated clothing prior to reuse. Protect against physical damage. Use appropriate personnel protective equipment. Wash thoroughly after handling.

Storage: Store in a cool, dry, well ventilated area, away from heat and ignition sources. Keep containers tightly closed. Can attack aluminum at elevated temperature. Place away from incompatible materials. Tanks must be grounded and vented and should have vapour emission controls. Use explosion-proof ventilation to prevent vapour accumulation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Use explosion proof equipment.

Respiratory Protection: If exposure exceeds occupational exposure limits, use an appropriate NIOSH approved respirator. In case of spill or leak resulting in unknown concentration, use NIOSH approved supplied air respirator.

Gloves: Appropriate chemical resistant gloves should be worn.

Skin Protection: Skin contact should be prevented through the use of suitable protective clothing, gloves and footwear, selected for conditions of use and exposure potential. Consideration must be given both to durability as well as permeation resistance.

Eyes: Chemical goggles; also wear a face shield if splashing hazard exists.

Other Personal Protection Data: Ensure that eyewash stations and safety showers are proximal to the work-station location.

Ingredients	Exposure Limit - ACGIH	Exposure Limit - OSHA	Immediately Dangerous to Life or Health - IDLH
Isopropyl alcohol	400 ppm STEL 200 ppm TWA	1225 mg/m ³ STEL 400 ppm TWA 500 ppm STEL 980 mg/m ³ TWA	2000 ppm
Methanol	200 ppm TWA (Skin) 250 ppm STEL (Skin)	200 ppm TWA (Skin) 250 ppm STEL (Skin) 260 mg/m ³ TWA (Skin) 325 mg/m ³ STEL (Skin)	6000 ppm
Ethylene Glycol	100mg/m ³ Ceiling	125 mg/m ³ Ceiling 50 ppm Ceiling	Not Available.
Acetone	500 ppm TLV-TWA 750 ppm STEL	1000 ppm STEL 1800 mg/m ³ TWA 2400 mg/m ³ STEL 750 ppm TWA	2500 ppm

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Color: Clear/ Colorless

Odor: Alcohol

pH Not Available.

Specific Gravity: 0.78

Boiling Point: >57 °C / >134 °F

Freezing/Melting Point: Not Available.

Vapor Pressure: >33 mmHg

Vapor Density: >1

% Volatile by Volume: Not Available.

Evaporation Rate: Not Available.

Solubility: Soluble in water.

VOCs (lbs/gallon): Not Available.

Viscosity: Not Available.

Molecular Weight: Not Available.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: Avoid excessive heat, open flames and all ignition sources. Incompatible materials.

Materials to Avoid: Strong oxidizers. Strong acids and bases. Strong inorganic acids. May be corrosive to lead and aluminium.

Hazardous Decomposition Products: Carbon monoxide. Carbon dioxide. Formaldehyde.

Additional Information: Reduced catalyst, especially when warm, reacts with oxygen on contact with air. Could ignite flammable materials. Avoid contamination with strong oxidizing agents and materials reactive with hydroxyl compounds.

11. TOXICOLOGICAL INFORMATION

Principle Routes of Exposure

Ingestion: May be fatal if swallowed. May cause abdominal discomfort or pain, nausea, vomiting, dizziness, drowsiness, malaise, blurring of vision, irritability, lumbar pain, oliguria, uremia, and central nervous system effects, including irregular eye movements, convulsions and coma. A small amount of methanol (usually two or more ounces) can cause mental sluggishness, nausea and vomiting leading to severe illness, and may produce adverse effects on vision with possible blindness or death if treatment is not received. Cardiac failure, pulmonary edema, and severe kidney damage may develop.

Skin Contact: Causes moderate skin irritation. Prolonged or repeated skin contact may cause drying, cracking or irritation. May be absorbed through the skin in toxic or lethal amounts. Symptoms of exposure may include: Central nervous system depression with headache, stupor, uncoordinated or strange behaviour or unconsciousness. Prolonged and or repeated skin contact with methanol soaked material has produced toxic effects including vision effects and death.

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Eye Contact: Causes moderate eye irritation. Liquid, vapor, or mist causes irritation, experienced as stinging, excess blinking and tear production, with excess redness of the conjunctiva.

Additional Information: Prolonged exposures to high vapour concentration can cause headache, dizziness, nausea, blurred vision and central nervous system depression. Prolonged and repeated contact with the skin can cause defatting and drying of the skin resulting in skin irritation and dermatitis. Repeated inhalation of ethylene glycol mist may produce signs of central nervous system involvement, particularly dizziness and nystagmus. Repeated exposure by inhalation or absorption of methanol may cause systemic poisoning, brain disorders, impaired vision and blindness. Inhalation may worsen conditions such as emphysema or bronchitis. Repeated skin contact may cause dermal irritation, dryness and cracking. Effects of sub lethal doses may be nausea, headache, abdominal pain, vomiting and visual disturbances ranging from blurred vision to light sensitivity. Methanol is toxic by inhalation and ingestion. Inhalation of vapors may cause cyanosis, CNS effects, lethargy, loss of consciousness and death. The effects from inhalation may be delayed. Ingestion may cause malaise, CNS effects, discomfort, and death if not treated promptly. Ingestion of methanol has resulted in adverse effects (necrosis and haemorrhaging) in the brain. Medical conditions aggravated by exposure include: skin disorders and allergies, liver disorders and eye disease. Undocumented reports suggest that this product may form a siloxane polymer on the eyes, lungs, or other mucous membranes. Long term exposure to methanol has been associated with headaches, giddiness, conjunctivitis, insomnia and impaired vision. Dermal absorption of significant amounts of methanol resulted in death in several animal species. Toxic effects in animals exposed to methanol by inhalation include eye irritation, blindness and nasal discharge. Toxic effects observed in animals exposed to methanol by ingestion include CNS effects, gastrointestinal effects, anesthetic effects, damage to the optic nerve and acidosis. NOTE: The odour threshold of methanol is several times higher than the TLV-TWA.

Exposure may place individuals with existing heart problems at added risk of potential cardiac irregularities and heart failure. Exposure may enhance the toxicity of other materials.

Acute Test of Product:

Acute Oral LD50: Not Available.

Acute Dermal LD50: Not Available.

Acute Inhalation LC50: Not Available.

Carcinogenicity:

Ingredients	IARC - Carcinogens	ACGIH - Carcinogens
Isopropyl alcohol	Group 3	A4 : Not classifiable for human and animals.
Methanol	Not listed.	Not listed.
Ethylene Glycol	Not listed.	A4 - Not Classifiable as a Human Carcinogen (aerosol)
Acetone	Not listed.	A4 - Not Classifiable as a Human Carcinogen

Carcinogenicity Comment: Not listed with IARC, NTP, ACGIH or OSHA as a carcinogen.

Reproductive Toxicity/ Teratogenicity/ Embryotoxicity/ Mutagenicity: Ingestion of large amounts of ethylene glycol has been shown to interfere with reproduction in animals. Specifically, growth retardation and decreased litter size in rats and mice and decreased mating frequency in mice were observed. Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high concentrations or doses. The no-effect doses for developmental toxicity for ethylene glycol given by gavage over the period of organogenesis has been shown to be 150 mg/kg/day for the mouse and 500 mg/kg/day for the rat. Also, in a preliminary study to assess the effects of exposure of pregnant rats and mice to aerosols at concentrations of 150, 1000 and 2500 mg/m³ for 6 hours a day throughout the period of organogenesis, teratogenic effects were produced at the highest concentration, but only in mice. The conditions of these latter experiments did not allow a conclusion as to whether the developmental toxicity was mediated by inhalation of aerosol, percutaneous absorption of ethylene glycol from contaminated skin, or swallowing of ethylene glycol as a result of grooming the wetted coat. In a further study, comparing effects from high aerosol concentration by whole-body or nose-only exposure, it was shown that nose-only exposure resulted in maternal toxicity (1000 and 2500 mg/m³) and developmental toxicity with minimal evidence of teratogenicity (2500 mg/m³). The no-effects concentration (based on maternal toxicity) was 500 mg/m³. In a further study in mice, no teratogenic effects could be produced when ethylene glycol was applied to the skin of pregnant mice over the period of organogenesis. The above observations suggest that ethylene glycol is to be regarded as an animal teratogen. There is currently no available information to suggest that ethylene glycol has caused birth defects in humans. Cutaneous application of ethylene glycol is ineffective in producing developmental toxicity. Exposure to high aerosol concentrations is only minimally effective in producing developmental toxicity. Isopropyl alcohol causes foetotoxicity in animals at doses which are maternally toxic. Does not impair fertility. Methanol is reported to cause birth defects in rats exposed to 20 000 ppm. In experimental animals, methanol is fetotoxic, teratogenic and has produced significant behavioral abnormalities in offspring at dose levels not producing maternal toxic effects. Behavioural abnormalities were observed in the offspring of rats given drinking water containing 2% methanol. Methanol has produced mutagenic effects (somatic cells) in experimental animals.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

Ingredients	Ecotoxicity - Fish Species Data	Acute Crustaceans Toxicity:	Ecotoxicity - Freshwater Algae Data
Isopropyl alcohol	LC50 (fathead minnow (31 days old)) 61200 mg/L LC50 (fathead minnow (29 days old)) 94900 mg/L	Not Available.	Not Available.
Methanol	LC50 (rainbow trout (fingerling)) 13 mg/L LC50 (fathead minnow (28 days old)) 29400 mg/L LC50 (trout) 8000 mg/L	Not Available.	Not Available.
Ethylene Glycol	LC50 (bluegill) 27500 mg/L LC50 (goldfish) 27500 mg/L LC50 (rainbow trout) 41000 mg/L	Not Available.	Not Available.
Acetone	LC50 (rainbow trout) 5540 mg/L LC50 (fathead minnow) 6210 mg/L LC50 (bluegill) 8300 mg/L	Not Available.	Not Available.

Other Information:

Methanol in fresh or salty water may have serious effects on aquatic life. A study on methanol's toxic effects on sewage sludge bacteria reported little effect on digestion at 1.0 % while 0.5% methanol retarded digestion. Methanol will be broken down to carbon dioxide and water. Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams or public waterways. Block off drains and ditches. Spill areas must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

Disposal of Waste Method: Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations.

Contaminated Packaging: Empty containers should be recycled or disposed of through an approved waste management facility.

14. TRANSPORT INFORMATION

DOT (U.S.):

DOT Shipping Name: Flammable Liquid, Toxic, N.O.S. (Acetone)

DOT Hazardous Class 3 (6.1)

DOT UN Number: UN1992

DOT Packing Group: II

DOT Reportable Quantity (lbs): Not Applicable.

Notes: No additional remark.

Marine Pollutant: No.

ICAO/IATA:

IATA Proper Shipping Name: Flammable Liquid, Toxic, N.O.S. (Acetone)

IATA Hazard Class: 3 (6.1)

UN Number: UN1992

Packing Group: II

IATA Label: Flammable liquid. Toxic.

IATA Remarks: No additional remark.

IMDG:

IMDG Proper Shipping Name: Flammable Liquid, Toxic, N.O.S. (Acetone)

Hazard Class: 3 (6.1)

UN Number: UN1992

Packing Group: II

Marine Pollutant: No.

IMDG Label: Flammable liquid. Toxic.

Remarks: No additional remark.

TDG (Canada):

TDG Proper Shipping Name: Flammable Liquid, Toxic, N.O.S. (Acetone)

Hazard Class: 3 (6.1)

UN Number: UN1992

Packing Group: II

Note: No additional remark.

Marine Pollutant: No.

15. REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL) or exempt.

U.S. Regulatory Rules

Ingredients	CERCLA/SARA - Section 302:	SARA (311, 312) Hazard Class:	CERCLA/SARA - Section 313:
Isopropyl alcohol	Not Listed.	Not Listed.	LISTED
Methanol	Not Listed.	LISTED	LISTED
Ethylene Glycol	Not Listed.	LISTED	LISTED
Acetone	Not Listed.	LISTED	Not Listed.

California Proposition 65: Not Listed.

MA Right to Know List: Listed.

New Jersey Right-to-Know List: Listed.

Pennsylvania Right to Know List: Listed.

WHMIS Hazardous Class:

B2 FLAMMABLE LIQUIDS

D1B TOXIC MATERIALS

D2A VERY TOXIC MATERIALS

D2B TOXIC MATERIALS



16. OTHER INFORMATION

Additional Information:

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Disclaimer:

NOTICE TO READER:

Univar, expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages.

Do not use ingredient information and/or ingredient percentages in this MSDS as a product specification. For product specification information refer to a Product Specification Sheet and/or a Certificate of Analysis. These can be obtained from your local Univar Sales Office.

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*****END OF MSDS*****