

Material Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

1. MATERIAL AND COMPANY IDENTIFICATION

Material Name : Dex-Cool Extended Life Coolant/Antifreeze
Concentrate
Uses : Antifreeze and coolant.

Manufacturer/Supplier : Lyden Oil Company
3711 LeHarps Road
Youngstown, Ohio 44515 USA
Information Request : www.lydenoil.com

Emergency Telephone Number : 800-362-9410
Chemtrec : 800-424-9300

2. COMPOSITION / INFORMATION ON INGREDIENTS

	<u>Chemical Identity</u>	<u>CAS No.</u>
	<u>Concentration</u>	
Ethanediol	107-21-1	60.00 - 100.00 %

Mixture of ethylene glycol, isopropyl alcohol and distilled water.

3. HAZARDS IDENTIFICATION

Emergency Overview	
Appearance and Odour	: May be dyed. Liquid at room temperature. Characteristic.
Health Hazards	: Harmful or fatal if swallowed. May cause acidosis, cardiopulmonary and kidney effects.
Environmental Hazards	: May cause long-term adverse effects in the aquatic environment.

Health Hazards

Inhalation : Slightly irritating to respiratory system.

Skin Contact : May cause moderate irritation to skin.

Eye Contact : Moderately irritating to eyes.

Ingestion : Harmful if swallowed. May cause acidosis, cardiopulmonary and kidney effects. Ingestion may cause drowsiness and dizziness.

Other Information : Possibility of organ or organ system damage from prolonged exposure; see Chapter 11 for details. Target organ(s):
Kidney.
Lungs.
Cardiovascular system.
Intentional abuse, misuse or other massive exposure may cause multiple organ damage and or death.

Signs and Symptoms : Kidney toxicity may be recognized by blood in the urine or increased or decreased urine flow. Other signs and symptoms

can include nausea, vomiting, abdominal cramps, diarrhoea, lumbar pain shortly after ingestion, and possibly narcosis and death. High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued exposure may result in unconsciousness and/or death.

Aggravated Medical Condition

Environmental Hazards Additional Information

Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Kidney. Cardiovascular system.

Not classified as dangerous for the environment.

Under normal conditions of use or in a foreseeable emergency, this product meets the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 191 0.1200.

DO NOT DELAY. Keep victim calm. Obtain medical treatment immediately.

4. FIRST AID MEASURES

General Information

Inhalation

Skin Contact

**Eye Contact
Ingestion**

Advice to Physician

Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.

Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.

Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.

DO NOT DELAY. If swallowed, do not induce vomiting; transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT! The preferred treatment is immediate transportation to a medical facility and use of appropriate treatment including possible administration of activated charcoal, gastric lavage and or gastric aspiration. If none of the above are immediately available and a delay of more than one hour is anticipated before such medical attention can be obtained, induction of vomiting may be appropriate using IPECAC syrup

(Contraindicated if there are any signs of CNS depression). This should be considered on a case by case basis following specialist advice. Specific other treatments include may include ethanol therapy, fomepizole, treatment of acidosis and haemodialysis. Seek specialist advice without delay.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

**Flash point
Upper / lower
Flammability or**

: Typical 130 °C / 266 °F (Pensky-Martens Closed Cup)
: 3 - 15 %(V)

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Explosion limits

Auto ignition temperature : > 200 °C / 392 °F

Specific Hazards : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.

Suitable Extinguishing Media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable Extinguishing Media : Do not use water in a jet.

Protective Equipment for Firefighters : Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe all relevant local and international regulations.

Protective measures : Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Clean Up Methods : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

For small liquid spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

Additional Advice : U.S. regulations may require reporting releases of this material to the environment which exceed the reportable quantity (refer to Chapter 15) to the National Response Centre at (800) 424-8802. Local authorities should be advised if significant spillages cannot be contained.

7. HANDLING AND STORAGE

General Precautions : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

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- Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
- Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F
- Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.
- Unsuitable Materials** : Zinc. Avoid contact with galvanized materials.
- Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

Material	Source	Type	ppm	mg/m3	Notation
Ethanediol	ACGIH	Ceiling(Aerosol.)		100 mg/m3	
Ethanediol	OSHA Z1A	Ceiling	50 ppm	125 mg/m3	

- Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.
- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65 °C (149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical

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	resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After
	: using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
Eye Protection	Wear safety glasses or full face shield if splashes are likely to occur.
Protective Clothing	: Skin protection not ordinarily required beyond standard issue work clothes.
Monitoring Methods	: Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
Environmental Exposure Controls	: Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: May be dyed. Liquid at room temperature.
Odour	: Characteristic.
pH	: Not applicable.
Initial Boiling Point and Boiling Range	: > 100 °C / 212 °F estimated value(s)
Freezing Point	: Typical -30 °C / -22 °F
Flash point	: Typical 130 °C / 266 °F (Pensky-Martens Closed Cup)
Upper / lower Flammability or Explosion limits	: 3 - 15 %(V)
Auto-ignition temperature	: > 200 °C / 392 °F
Specific gravity	: Typical 1.1 at 15 °C / 59 °F
Density	: Typical 909 g/cm ³ at 15 °C / 59 °F
Water solubility	: Completely Soluble
n-octanol/water partition coefficient (log Pow)	: Data not available
Kinematic viscosity	: Typical 30 mm ² /s at 40 °C / 104 °F
Evaporation rate (nBuAc=1)	: Data not available

10. STABILITY AND REACTIVITY

Stability	: Stable.
Conditions to Avoid	: Extremes of temperature and direct sunlight.
Materials to Avoid	: Strong oxidising agents.
Hazardous Decomposition Products	: Hazardous decomposition products are not expected to form during normal storage.

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	: Information given is based on data on the components and the
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- toxicology of similar products.
- Acute Oral Toxicity** : Harmful if swallowed. LD50 > 300 - <= 2000 mg/kg , Rat
Classified as harmful by the European Commission. There is a marked difference in acute oral toxicity between rodents and man, man being more susceptible than rodents. The estimated fatal dose for man is 100 millilitres (1/2 cup). This material has also been shown to be toxic and potentially lethal by ingestion to cats and dogs. Ingestion may cause drowsiness and dizziness.
- Acute Dermal Toxicity** : Expected to be of low toxicity: LD50 >2000 mg/kg , Rabbit
- Skin Irritation** : May cause moderate skin irritation (but insufficient to classify).
- Eye Irritation** : Moderately irritating to eyes (but insufficient to classify).
- Respiratory Irritation** : Inhalation of vapours or mists may cause irritation.
- Sensitisation** : Not expected to be a skin sensitiser.
- Repeated Dose Toxicity** : Kidney: can cause kidney damage.
- Mutagenicity** : Not considered a mutagenic hazard.
- Carcinogenicity** : Components are not known to be associated with carcinogenic effects.

Material	: Carcinogenicity Classification
Ethanediol	: ACGIH Group A4: Not classifiable as a human carcinogen.
Sodium molybdate	: ACGIH Group A3: Confirmed animal carcinogen with unknown relevance to humans.

- Reproductive and Developmental Toxicity** : Causes foetotoxicity in animals; considered to be secondary to maternal toxicity.

12. ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

- Acute Toxicity** : Expected to be practically non toxic: LC/EC/IC50 > 100 mg/l (to aquatic organisms)
- Mobility** : Dissolves in water. If product enters soil, it will be highly mobile and may contaminate groundwater.
- Persistence/degradability** : Readily biodegradable.
- Bioaccumulation** : Not expected to bioaccumulate significantly.
- Other Adverse Effects** : Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

13. DISPOSAL CONSIDERATIONS

- Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
- Container Disposal** : Dispose in accordance with prevailing regulations, preferably

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Local Legislation

to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
: Disposal should be in accordance with applicable regional, national, and local laws and regulations.

14. TRANSPORT INFORMATION

US Department of Transportation Classification (49CFR)

Identification number UN 3082
Proper shipping name Environmentally hazardous substances, liquid, n.o.s.
Technical name (Ethylene glycol)
Class / Division 9

Packing group III

IMDG

Identification number UN 3082
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name (Ethylene glycol)
Class / Division 9
Packing group III
Marine pollutant: No

IATA (Country variations may apply)

Identification number UN 3082
Proper shipping name Environmentally hazardous substance, liquid, n.o.s.
Technical name (Ethylene glycol)
Class / Division 9
Packing group III

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Federal Regulatory Status

Notification Status

DSL All components listed.
EINECS All components listed.
TSCA All components listed.

Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)

Dex-Cool Extended Life Coolant/Antifreeze Concentrate () Reportable quantity: 5473 lbs

Ethenediol (107-21-1) Reportable quantity: 5000 lbs

**Dex-Cool Extended Life Coolant/Antifreeze
Concentrate**

MSDS# 9527

Version 2.0

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SARA Hazard Categories (31 1/312)

Immediate (Acute) Health Hazard.

SARA Toxic Release Inventory (TRI) (313)

Ethenediol (107-21-1)

91.35%

State Regulatory Status

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

New Jersey Right-To-Know Chemical List

Ethenediol (107-21-1)

Listed.

Pennsylvania Right-To-Know Chemical List

Ethenediol (107-21-1)

Environmental hazard.
Listed.

16. OTHER INFORMATION

NFPA Rating (Health, Fire, Reactivity) : 2, 1, 0

MSDS Version Number : 2.0

MSDS Effective Date : 07/07/2008

MSDS Revisions : A vertical bar (|) in the left margin indicates an amendment from the previous version.

MSDS Regulation : The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

MSDS Distribution : The information in this document should be made available to all who may handle the product.

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MSDS Legend:

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service Registry; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer of Expressed and implied Warranties:

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