

# Material Safety Data Sheet

Printing date 10/07/2008

Version 2

Reviewed on 10/07/2008

## 1 Identification of substance

· **Product details**

· **Trade name:** Diethyl Ether

· **Article number:** 072-01-0016BOC

· **Creation date:** 12/13/2006

· **Manufacturer/Supplier:**

Linde Canada Limited

5860 Chedworth Way

Mississauga, Ontario L5R 0A2

Telephone (905) 501-1700

24-HOUR EMERGENCY TELEPHONE NUMBER:

(905) 501-0802

Linde

575 Mountain Avenue

Murray Hill, NJ 07974

Telephone (908) 464-8100

24-HOUR EMERGENCY TELEPHONE NUMBER:

CHEMTREC (800) 424-9300

· **Information department:** Customer Service Centre: 1-866-385-5349

## 2 Composition/Data on components

· **Chemical characterization:**

· **CAS No. Description**

60-29-7 diethyl ether

· **Identification number(s)**

· **EINECS Number:** 200-467-2

603-022-00-4

## 3 Hazards identification

· **Hazard description:**

D2B - Toxic material causing other toxic effects



Harmful  
Extremely flammable

· **WHMIS-symbols:**

A - Compressed gas



· **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	4	Fire = 4
REACTIVITY	0	Reactivity = 0

(Contd. on page 2)

-CDN-

## Material Safety Data Sheet

Printing date 10/07/2008

Version 2

Reviewed on 10/07/2008

**Trade name: Diethyl Ether**

(Contd. of page 1)

**· NFPA ratings (scale 0 - 4)**

 Health = 2  
 Fire = 4  
 Reactivity = 0

**· Information pertaining to particular dangers for man and environment:**

At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.  
 Has a narcotizing effect.  
 Extremely flammable.  
 May form explosive peroxides.  
 Harmful if swallowed.  
 Repeated exposure may cause skin dryness or cracking.  
 Vapours may cause drowsiness and dizziness.

**· Classification system:**

The classification is in line with internationally approved calculation standards. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

**· GHS label elements**

**Danger**

2.2/1 - Extremely flammable gas.


**Danger**

3.1/3 - Toxic if swallowed.

3.8/3 - May cause drowsiness or dizziness.

**· Prevention:**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
 Avoid breathing dust/fume/gas/mist/vapours/spray.  
 Wash thoroughly after handling.  
 Do not eat, drink or smoke when using this product.  
 Use only outdoors or in a well-ventilated area.

**· Response:**

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
 Call a POISON CENTER or doctor/physician if you feel unwell.  
 Specific treatment (see label).  
 Rinse mouth.  
 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
 Eliminate all ignition sources if safe to do so.

**· Storage:**

Store in a well-ventilated place.  
 Store in a well-ventilated place. Keep container tightly closed.  
 Store locked up.

**· Disposal:**

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

CDN

(Contd. on page 3)

## Material Safety Data Sheet

Printing date 10/07/2008

Version 2

Reviewed on 10/07/2008

**Trade name: Diethyl Ether**

(Contd. of page 2)

### 4 First aid measures

**· General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

**· After inhalation:** Supply fresh air; consult doctor in case of complaints.**· After skin contact:** Generally the product does not irritate the skin.**· After eye contact:** Rinse opened eye for at least 15 minutes under running water. Then consult a doctor.**· After swallowing:** Immediately call a doctor.

### 5 Fire fighting measures

**· Suitable extinguishing agents:**

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**· Protective equipment:** Wear self-contained respiratory protective device.

### 6 Accidental release measures

**· Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation.

**· Measures for environmental protection:**

Do not allow product to reach sewage system or any water course.

Prevent seepage into sewage system, workpits and/or cellars.

In case of gas release or seepage into the ground inform responsible authorities.

**· Measures for cleaning/collecting:**

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

### 7 Handling and storage

**· Handling:** Do not mix with air or oxygen above atmospheric pressure.**· Information for safe handling:** Open and handle cylinder with care.**· Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.

**· Storage:****· Requirements to be met by storerooms and receptacles:**

Store in a cool location.

Do not expose cylinder to temperatures higher than 50°C (122 °F)

**· Information about storage in one common storage facility:** Store away from oxidizing agents.**· Further information about storage conditions:**

Keep cylinder valve tightly closed.

Store in cool, dry conditions in well sealed receptacles.

(Contd. on page 4)

CDN

## Material Safety Data Sheet

Printing date 10/07/2008

Version 2

Reviewed on 10/07/2008

**Trade name: Diethyl Ether**

(Contd. of page 3)

Protect from heat and direct sunlight.  
 Store cylinder in a well ventilated area.  
 Store in accordance with local fire code and/or building code or any pertaining regulations.

### 8 Exposure controls and personal protection

· **Additional information about design of technical systems:** Adequate local ventilation.

· **Components with limit values that require monitoring at the workplace:**

**60-29-7 diethyl ether (23-100%)**

EL	Short-term value: 500 ppm
	Long-term value: 400 ppm

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.  
 Wash hands before breaks and at the end of work.

· **Breathing equipment:**

Use atmosphere-supplying respirators (e.g. supplied-air: demand, pressure-demand, or continuous-flow or self-contained breathing apparatus: demand or pressure-demand or combination supplied-air with auxiliary self-contained air supply atmosphere-supplying respirator) in case of insufficient ventilation.

· **Protection of hands:**



Protective gloves.

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Eye protection:** Safety glasses

### 9 Physical and chemical properties

· **General Information**

<b>Form:</b>	Gaseous.
<b>Color:</b>	Colorless
<b>Odor:</b>	Sweetish

· **Change in condition**

**Melting point/Melting range:** -116.3°C  
**Boiling point/Boiling range:** Undetermined.

· **Flash point:** < 0°C

· **Ignition temperature:** 170°C

(Contd. on page 5)

## Material Safety Data Sheet

Printing date 10/07/2008

Version 2

Reviewed on 10/07/2008

**Trade name: Diethyl Ether**

(Contd. of page 4)

- **Danger of explosion:** In use, may form flammable/explosive vapour-air mixture.  
May form explosive peroxides.
- **Explosion limits:**
  - Lower:** 1.7 Vol %
  - Upper:** 36 Vol %
- **Solubility in / Miscibility with Water at 20°C:** 12 g/l

### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Dangerous reactions** May form explosive gas mixture with air.
- **Dangerous products of decomposition:** No dangerous decomposition products known.

### 11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

**60-29-7 diethyl ether**

Oral	LD50	1215 mg/kg (rat)
Inhalative	LC50/4hr	73000 ppm (rat)

- **Primary irritant effect:**
- **on the skin:** No irritating effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.

### 13 Disposal considerations

- **Product:**
- **Recommendation:** Unused product should be returned to vendor.
- **Uncleaned packagings:**
- **Recommendation:** Cylinder and unused product should be returned to vendor. Disposable cylinder must be disposed of in accordance with local regulations.
- **Recommended cleansing agent:** None applicable.

CDN

(Contd. on page 6)

## Material Safety Data Sheet

Printing date 10/07/2008

Version 2

Reviewed on 10/07/2008

**Trade name: Diethyl Ether**

(Contd. of page 5)

### 14 Transport information

· **TDG and DOT regulations:**



- **Hazard class:** 3
- **Identification number:** UN1155
- **Packing group:** I
- **Proper shipping name (technical name):** DIETHYL ETHER (ETHYL ETHER)
- **Label:** 3
- **Packaging group:** I

· **Maritime transport IMDG:**



- **IMDG Class:** 3
- **UN Number:** 1155
- **Label:** 3
- **Packaging group:** I
- **EMS Number:** F-E,S-D
- **Marine pollutant:** No
- **Proper shipping name:** DIETHYL ETHER (ETHYL ETHER)

· **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 3
- **UN/ID Number:** 1155
- **Label:** 3
- **Packaging group:** I
- **Propper shipping name:** DIETHYL ETHER (ETHYL ETHER)

· **UN "Model Regulation":** UN1155, DIETHYL ETHER (ETHYL ETHER), 3, I

### 15 Regulations

· **Sara**

· **Section 355 (extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

(Contd. on page 7)

## Material Safety Data Sheet

Printing date 10/07/2008

Version 2

Reviewed on 10/07/2008

**Trade name: Diethyl Ether**

(Contd. of page 6)

**· TSCA (Toxic Substances Control Act):**

Substance is listed.

**· Proposition 65****· Chemicals known to cause cancer:**

Substance is not listed.

**· Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

**· Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

**· Chemicals known to cause developmental toxicity:**

Substance is not listed.

**· Cancerogenity categories****· EPA (Environmental Protection Agency)**

Substance is not listed.

**· NTP (National Toxicology Program)**

Substance is not listed.

**· TLV (Threshold Limit Value established by ACGIH)**

Substance is not listed.

**· NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

**· OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

**· Canadian substance listings:****· Canadian Domestic Substances List (DSL)**

Substance is listed.

**· Canadian Ingredient Disclosure list (limit 0.1%)**

Substance is not listed.

**· Canadian Ingredient Disclosure list (limit 1%)**

Substance is listed.

**· Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

**· Hazard symbols:**Harmful  
Extremely flammable**· Risk phrases:**Extremely flammable.  
May form explosive peroxides.  
Harmful if swallowed.  
Repeated exposure may cause skin dryness or cracking.  
Vapours may cause drowsiness and dizziness.

(Contd. on page 8)

## Material Safety Data Sheet

Printing date 10/07/2008

Version 2

Reviewed on 10/07/2008

**Trade name: Diethyl Ether**

(Contd. of page 7)

**· Safety phrases:**

- Keep out of the reach of children.
- Keep container in a well-ventilated place.
- Keep away from sources of ignition - No smoking.
- Do not empty into drains.
- Take precautionary measures against static discharges.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Please refer to the section 3 for NFPA and HMIS Hazard Codes.

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· **Department issuing MSDS:** Customer Service Centre: 1-866-385-5349

· **Abbreviations and Acronyms:**

- ACGIH: American Conference of Governmental Industrial Hygienists
- CAS: Chemical Abstract Service (Division of the American Chemical Society)
- DOT: US Department of Transportation
- EINECS: European Inventory of Existing Commercial Chemical Substances
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- HMIS: Hazardous Material Identification System
- IATA: International Air Transportation Association
- IATA-DGR: Dangerous Goods Regulations by the "International Air Transportation Association"
- ICAO: International Civil Aviation Association
- ICAO-TI: Technical Instructions by the "International Civil Aviation Organization (ICAO)"
- IMDG: International Marine Code for Dangerous Goods
- WHIMS: Workplace Hazardous Material Information System
- LC50: Lethal Concentration, 50 Percent
- LD50: Lethal Dose, 50 Percent
- N/A: Not Applicable