1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DABCO ® BL-19 Catalyst

Product Use Description : Polyurethane Catalyst

Manufacturer/Importer/Distributor : Air Products and Chemicals, Inc
7201 Hamilton Blvd.
Allentown, PA 18195-1501
GST No. 123600835 RT0001
QST No. 102753981 TQ0001

Telephone : 1-610-481-4911
Corporate Chemicals Cust Serv 1-800-345-3148
Gases/Electronics Cust Serv 1-800-752-1597

Emergency telephone number (24h) : 800-523-9374 USA
+1 610 481 7711 International

2. HAZARDS IDENTIFICATION

Emergency Overview

Corrosive
Keep away from heat and sources of ignition.
Combustible Liquid.
Moderate respiratory irritant.
Severe skin irritant.
Severe eye irritant.
Toxic in contact with skin.

Potential Health Effects

Inhalation : Can cause severe eye, skin and respiratory tract burns. May cause nose, throat, and lung irritation. Inhalation of vapors and/or aerosols in high concentration may cause irritation of respiratory system.

Eye contact : Corneal edema may give rise to a perception of "blue haze" or "fog" around lights. Exposed individuals may see rings around bright lights. This effect is temporary and has no known residual effect. Product vapor can cause glaucoma (corneal edema) when absorbed into the tissue of the eye from the atmosphere. Causes eye burns. May cause blindness. Severe eye irritation.

Skin contact : Causes skin burns. Toxic in contact with skin.

Ingestion : If ingested, severe burns of the mouth and throat, as well as a danger of
perforation of the oesophagus and the stomach.

Chronic Health Hazard:
This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater. Prolonged contact may result in chemical burns and permanent damage.

Exposure Guidelines
Target Organs:
- Skin
- Eyes
- Respiratory system
- Liver
- Digestive system

Symptoms:
Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: Sore throat.

Aggravated Medical Condition

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS Number</th>
<th>Concentration (Weight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis (2-dimethylaminoethyl) ether</td>
<td>3033-62-3</td>
<td>100 %</td>
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CHEMICAL FAMILY: Tertiary Amine

4. FIRST AID MEASURES

General advice:
Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.

Eye contact:
Hold eyelids apart, initiate and maintain gentle and continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour.

Skin contact:
Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Initiate and maintain continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Cover wound with sterile dressing.

Ingestion:
Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If a person vomits when lying on his back, place him in the recovery position. Prevent aspiration of vomit. Turn victim's head to the side.

Inhalation:
If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Move to fresh air.
5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical. Dry sand. Limestone powder.

Specific hazards: May generate ammonia gas. May generate toxic nitrogen oxide gases. Do not allow run-off from fire fighting to enter drains or water courses. Incomplete combustion may form carbon monoxide. Fire or intense heat may cause violent rupture of packages. Flash back possible over considerable distance. May form explosive mixtures in air. Downwind personnel must be evacuated. Burning produces noxious and toxic fumes. In the event of fire, cool tanks with water spray.

Special protective equipment for fire-fighters: Avoid contact with the skin. A face shield should be worn. Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if necessary.

Further information: Do not allow run-off from fire fighting to enter drains or water courses.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use self-contained breathing apparatus and chemically protective clothing. Wear suitable protective clothing, gloves and eye/face protection. Remove all sources of ignition. Evacuate personnel to safe areas.

Environmental precautions: Shut off or remove all ignition sources. Construct a dike to prevent spreading.

Methods for cleaning up: Approach suspected leak areas with caution. Contact Air Products’ Emergency Response Center for advice. Absorb with inert absorbent materials such as: Dry sand. Vermiculite. Activated charcoal. Place in appropriate chemical waste container.

Additional advice: Evacuate area and do not approach spilled product. If possible, stop flow of product.

7. HANDLING AND STORAGE

Handling
See "Flammable and Combustible Liquid Code" NFPA No. 30, National Fire Protection Association, Boston, MA. Avoid contact with skin and eyes. Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Avoid breathing vapors and/or aerosols. Avoid contact with eyes. Use only in well-ventilated areas. Use personal protective equipment. When using, do not eat, drink or smoke.

Storage
Store in steel containers preferably located outdoors, above ground, and surrounded by dikes to contain spills or leaks. Do not store near acids. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away
Technical measures/Precautions

Do not store in reactive metal containers. Keep away from open flames, hot surfaces and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures

Apply process controls to ensure safe operating conditions. Assess potential flammability hazards based on flashpoint and potential ignition sources.

Ensure adequate ventilation.

Provide readily accessible eye wash stations and safety showers.

Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

Personal protective equipment

Respiratory protection : Wear appropriate respirator when ventilation is inadequate.

Hand protection : Neoprene gloves.

Butyl-rubber

Nitrile rubber.

Impervious gloves.

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Full face shield with goggles underneath.

Chemical resistant goggles must be worn.

Skin and body protection : Slicker Suit.

Impervious clothing.

Full rubber suit (rain gear).

Rubber or plastic boots.

Long sleeve shirts and trousers without cuffs.

Environmental exposure controls : Shut off or remove all ignition sources.

Special instructions for protection and hygiene : Discard contaminated leather articles. Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Wash hands at the end of each workshift and before eating, smoking or using the toilet. Provide readily accessible eye wash stations and safety showers.

Exposure limit(s)
5/9

Air Products and Chemicals, Inc
DABCO® BL-19 Catalyst

9. PHYSICAL AND CHEMICAL PROPERTIES

Form : Liquid.
Color : Amber.
Odor : Ammoniacal.
Molecular Weight : 160 g/mol
Relative vapor density : 5.6
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AIR PRODUCTS AND CHEMICALS, INC
DABCO® BL-19 CATALYST

Relative density : 0.85 (water = 1)
Vapor pressure : 0.28 mmHg at 70 °F (21 °C)
Density : 53.064 lb/ft³ (0.85 g/cm³) at 70 °F (21 °C)
pH : Alkaline.
Boiling point/range : 372 °F (189 °C)
Flash point : 66.11 °C
Upper flammability limit : 5.1 %(V)
Lower flammability limit : 1 %(V)
Water solubility : Completely soluble.

10. STABILITY AND REACTIVITY

Chemical Stability : Stable under normal conditions.
Conditions to avoid : Heat, flames and sparks.
Materials to avoid : Sodium hypochlorite.
Organic acids (i.e. acetic acid, citric acid etc.).
Mineral acids.
Product slowly corrodes copper, aluminum, zinc and galvanized surfaces.
Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion.
Oxidizing agents.

Hazardous decomposition products : Nitric acid.
Ammonia
Nitrogen oxides (NOx).
Nitrogen oxide can react with water vapors to form corrosive nitric acid.
Carbon monoxide.
Carbon dioxide (CO2).

11. TOXICOLOGICAL INFORMATION

Acute Health Hazard

Ingestion : LD50 : 1,070 mg/kg Species : Rat.

Inhalation : LC50 (4 h) : 4 mg/l Species : Rat.
(As aerosol)
Dermal : No data is available on the product itself.

**Dermal - Components**
Bis (2-dimethylaminoethyl) ether : LD50 : 750 mg/kg Species : Rabbit.

Eye irritation/corrosion : Severe eye irritation.
Skin irritation/corrosion : Severe skin irritation.
Sensitization : Did not cause sensitization on laboratory animals.

**Chronic Health Hazard**
Inhalation tests have shown that exposure of rats to vapor of bis (dimethylaminoethyl) ether caused mortalities after 3 or 4 days of exposure to 90 ppm and after 6 to 9 days of exposure at 47 ppm. Subchronic exposure in test animals has caused abnormalities in lung, liver and stomach.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity effects**

Aquatic toxicity : No data is available on the product itself.

**Toxicity to fish - Components**
Bis (2-dimethylaminoethyl) ether : LC50 (96 h) : 124 mg/l/OECD Test Guideline 203 Species : Fish.

**Toxicity to algae - Components**
Bis (2-dimethylaminoethyl) ether : EC50 (72 h) : 23 mg/l/OECD Test Guideline 201 Species : Algae.
Bis (2-dimethylaminoethyl) ether : NOEC : > 1 mg/l Species : Algae.

Toxicity to other organisms : No data available.

**Persistence and degradability**

Biodegradability : No data is available on the product itself.
Mobility : No data available.
Bioaccumulation : No data is available on the product itself.

**13. DISPOSAL CONSIDERATIONS**

Waste from residues / unused products : Contact supplier if guidance is required.
Contaminated packaging : Dispose of container and unused contents in accordance with federal, state, and local requirements.
14. TRANSPORT INFORMATION

DOT

UN/ID No.: UN2922
Proper shipping name: Corrosive liquids, toxic, n.o.s., (Bis (2-dimethylaminoethyl) ether)
Class or Division: 8
Packing group: II
Label(s): 8 (6.1)
Marine Pollutant: No

IATA

UN/ID No.: UN2922
Proper shipping name: Corrosive liquid, toxic, n.o.s., (Bis (2-dimethylaminoethyl) ether)
Class or Division: 8
Packing group: II
Label(s): 8 (6.1)
Marine Pollutant: No

IMDG

UN/ID No.: UN2922
Proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S., (Bis (2-dimethylaminoethyl) ether)
Class or Division: 8
Packing group: II
Label(s): 8 (6.1)
Marine Pollutant: No
Segregation Group: Alkalis

TDG

UN/ID No.: UN2922
Proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S., (Bis (2-dimethylaminoethyl) ether)
Class or Division: 8
Packing group: II
Label(s): 8 (6.1)
Marine Pollutant: No

Further Information
The transportation information is not intended to convey all specific regulatory data relating to this material. For complete transportation information, contact an Air Products customer service representative.

15. REGULATORY INFORMATION

Corrosive. Toxic. Combustible Liquid.

<table>
<thead>
<tr>
<th>Country</th>
<th>Regulatory list</th>
<th>Notification</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>TSCA</td>
<td>Included on Inventory.</td>
</tr>
</tbody>
</table>

Air Products and Chemicals, Inc
DABCO ® BL-19 Catalyst
EPA SARA Title III Section 313 (40 CFR 372) Component(s) above 'de minimus' level
None.

WHMIS Hazard Classification
Combustible Liquid, Toxic Material Causing Immediate and Serious Toxic Effects, Toxic Material Causing Other Toxic Effects, Corrosive Material

16. OTHER INFORMATION

HMIS Rating

Health : 3
Flammability : 2
Physical hazard : 0

Prepared by : Air Products and Chemicals, Inc. Global EH&S Product Safety Department

Telephone : 1-610-481-4911 Corporate
1-800-345-3148 Chemicals Cust Serv
1-800-752-1597 Gases/Electronics Cust Serv

Preparation Date : 03/05/2016

For additional information, please visit our Product Stewardship web site at http://www.airproducts.com/productstewardship/