

SAFETY DATA SHEET

Version 2.0
Revision Date 07.12.2005

MSDS Number 300000008669
Print Date 25.12.2005

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Identification of the substance/preparation : DABCO® BL-11 Catalyst

Company : AIR PRODUCTS CHEMICALS EUROPE BV
Kanaalweg 15
Utrecht
Postcode 3502 GD

Telephone : +31(0)30 285 71 00

Emergency telephone number : 03 575 55 55 / +32 (0) 3 575 55 55

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation : Preparation

Components	EINECS / ELINCS	CAS Number	Concentration (Weight)	Classification
N,N,N',N'-Tetramethyl-2,2'-oxybis(ethylamine)	221-220-5	3033-62-3	70 %	T R34 ; R22 ; R20 ; R24
Oxydipropanol	246-770-3	25265-71-8	30 %	

Refer to section 16 for full text of each relevant R-phrased.

CHEMICAL FAMILY: Tertiary Amine

3. HAZARDS IDENTIFICATION

Classification

R20/22 Harmful by inhalation and if swallowed.
R24 Toxic in contact with skin.
R34 Causes burns.

Emergency Overview

Harmful if swallowed.
Keep away from heat and sources of ignition.
Combustible Liquid.
Severe skin irritant.
Severe eye irritant.
Toxic in contact with skin.

Potential Health Effects

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 glaucopsia (corneal edema) when absorbed into the tissue of the eye from the atmosphere. Severe eye irritation.

Skin contact : Toxic in contact with skin.

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Ingestion	: Harmful if swallowed.
Chronic Health Hazard	: This product contains no listed carcinogens according to Directive 67/548/EEC, IARC, ACGIH and/or NTP in concentrations of 0.1 percent or greater. Prolonged contact may result in chemical burns and permanent damage.
Aggravated Medical Condition	: Stomach/intestinal disorders. Liver disorders Skin disorders and Allergies. Eye disease
Target Organs	: Skin. Eyes. Respiratory system. Liver. Digestive system.

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.
Skin contact	: Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay.
Ingestion :	Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim's head to the side.
Inhalation	: Move to fresh air.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media :	Alcohol-resistant foam. Carbon dioxide (CO ₂). Dry chemical. Dry sand. Limestone powder.
Specific hazards :	May generate ammonia gas. May generate toxic nitrogen oxide gases. Use of water may result in the formation of very toxic aqueous solutions. 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. May form explosive mixtures in air. Downwind personnel must be evacuated. Burning produces obnoxious 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

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| 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

Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Avoid contact with eyes. Use personal protective equipment. When using, do not eat, drink or smoke.

Storage

Do not store near acids. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Keep in a dry, cool place. Keep away from Oxidizers.

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

- Use explosion proof equipment.
- 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

- | | | |
|---------------------------------|---|---|
| Hand protection | : | Neoprene gloves.
Butyl-rubber
Nitrile rubber.
Impervious gloves.
The breakthrough time of the selected glove(s) must be greater than the intended use period. |
| Eye protection | : | Chemical resistant goggles must be worn. |
| Skin and body protection | : | Long sleeve shirts and trousers without cuffs.
Impervious clothing. |
| Environmental exposure controls | : | Shut off or remove all ignition sources. Construct a dike to prevent spreading. |

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Form : Liquid.
Color : Light yellow.
Odor : Ammoniacal.
Relative density : 0.9 (water = 1)
Vapor pressure : 0.58 mmHg at 21 °C
Density : 56.185 lb/ft³ (0.9 g/cm³) at 70 °F (21 °C)
pH : 10.9
Boiling point/range : 190 °C
Flash point : 71.11 °C
Water solubility : Completely soluble.

10. STABILITY AND REACTIVITY

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.
Reactive metals (e.g. sodium, calcium, zinc etc.).
Materials reactive with hydroxyl compounds.
Dehydrating Agents.
Oxidizing agents.
Hazardous decomposition products : Heating above 65°C in the presence of strong base can liberate acetylene and Methyl Isobutyl Ketone.
Nitric acid.
Ammonia.
Nitrogen oxides (NO_x).
Nitrogen oxide can react with water vapors to form corrosive nitric acid.
Carbon monoxide.
Carbon dioxide (CO₂).
Aldehydes.
Flammable hydrocarbon fragments (e.g., acetylene).

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11. TOXICOLOGICAL INFORMATION

Acute Health Hazard

Ingestion	: LD50 : > 1,400 mg/kg Species : Rat.	
Inhalation	: No data is available on the product itself.	
Inhalation - Components		
N,N,N',N'-Tetramethyl-2,2'-oxybis(ethylamine)	LC50 (4 h) : 4 mg/l	Species : Rat.
Oxydipropanol	LC50 : > 6 mg/l	Species : Rat.
Skin.	: LD50 : > 250 mg/kg Species : Rabbit.	
Eye irritation/corrosion	: Severe eye irritation.	
Acute dermal irritation/corrosion	: Severe skin irritation.	

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 other organisms	: No data available.

Persistence and degradability

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

ADR

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Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S. (Bis (2-dimethylaminoethyl) ether)
Class : 8 (6.1)
UN/ID No. : UN2922
Packing group : III
ADR/RID Hazard ID no. : 86

IATA

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

IMDG

Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S. (Bis (2-dimethylaminoethyl) ether)
Class : 8 (6.1)
UN/ID No. : UN2922
Packing group : III

RID

Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S. (Bis (2-dimethylaminoethyl) ether)
Class : 8 (6.1)
UN/ID No. : UN2922
Packing group : III

15. REGULATORY INFORMATION

Labelling according to EEC Directive

Hazard symbol : T Toxic

R-phrase(s) : R20/22 Harmful by inhalation and if swallowed.
R24 Toxic in contact with skin.
R34 Causes burns.

S-phrase(s) : S 9 Keep container in a well-ventilated place.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S35 This material and its container must be disposed of in a safe way.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).

Country	Regulatory list	Notification
USA	TSCA	Included on Inventory.
EU	EINECS	Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer.
Canada	DSL	Included on Inventory.
Australia	AICS	Included on Inventory.
Japan	ENCS	Included on Inventory.
South Korea	ECL	Included on Inventory.
China	SEPA	Included on Inventory.
Philippines	PICCS	Included on Inventory.

Water hazard classification : 2 - water endangering

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16. OTHER INFORMATION

Ensure all national/local regulations are observed.

R-phrases - Components

R34 Causes burns.
R22 Harmful if swallowed.
R20 Harmful by inhalation.
R24 Toxic in contact with skin.
There are no known health hazards.

REVISION NOTES : 15. REGULATORY INFORMATION
Labelling according to EEC Directive

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

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

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.
