



12DEC03

MARTIN ENGINEERING COMPAN  
ONE MARTIN PL  
NEPONSET IL 61345

Attn: PLANT MANAGER

Dear Customer:

We appreciate your order for the following product:

==> POLYCAT# 77 CATALYST

This product is manufactured by our Polyurethane and Performance Chemicals Division and the attached MSDS is being forwarded to you via our automated MSDS program. Under this program, you will automatically be sent an MSDS whenever you place the initial order for a new product, when there is a change in your ship to address and/or mode of shipment, or whenever an MSDS has been updated, provided you purchased this product within the previous twelve (12) months. Air Products invites you to also take advantage of Internet access to our MSDSs at our e-commerce address <http://www.airproducts.com/msds>.

For this MSDS to serve its intended purpose as an effective means of hazard communication, we request that you pass it along to all personnel that either handle or use the product. Also, please insure that those who are involved with the design, implementation, or any other operation involving use of the product review this MSDS. This document is also available, upon request, in Danish, Dutch, French, German, Italian, Portuguese, Spanish, Great Britain English, Finnish, Swedish, Norwegian, Latin American Spanish, Latin American Portuguese, Canadian French, and Bahasa.

Regarding labeling requirements: drums are labeled with the appropriate hazard warning; bulk truck shipments are accompanied by a hazard warning document carried by the driver; and bulk rail shipments have the hazard warning attached to the top of the car.

Should you require additional assistance, please contact us at Air Products and Chemicals, Inc., 7201 Hamilton Blvd., Allentown, PA 18195-1501 or call our Product Information Center at (800) 345-3148 in the USA and (610) 481-6799 for International inquiries.

Once again, thank you for your order.

Sincerely,  
W.Y. O'Brien  
Product Safety, Global EH&S

# A REGISTERED TRADEMARK OF AIR PRODUCTS AND CHEMICALS INC.  
\* A TRADEMARK OF AIR PRODUCTS AND CHEMICALS INC.  
Order Number: K51120

## MATERIAL SAFETY DATA SHEET

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**SECTION 1 - MATERIAL IDENTIFICATION**  
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PRODUCT NAME                    POLYCAT<sup>®</sup> 77 CATALYST

<sup>®</sup>POLYCAT is a registered trademark of Air Products  
                                      and Chemicals, Inc.

MSDS REVISION NUMBER        15

MANUFACTURER                Air Products and Chemicals, Inc.  
                                      7201 Hamilton Blvd.,  
                                      Allentown, PA 18195-1501  
                                      www.airproducts.com/msds

TELEPHONE NUMBER            800-345-3148

EMERGENCY TELEPHONE NUMBER(S)  
                                      800-523-9374 (Continental U.S.)  
                                      610-481-7711 (Outside Continental U.S.)

REVISION DATE                JUNE 2002

\*\*\*\*\*  
EMERGENCY OVERVIEW  
\*\*\*\*\*

HMIS HEALTH            3            FLAMMABILITY    2            REACTIVITY    0

PHYSICAL FORM            Mobile liquid  
                                      at processing temperatureCOLOR                    Colorless /  
                                      at processing temperature    /

ODOR                      Fishy

HAZARDS                    Combustible. Toxic (ANSI Z129.1 1988) by skin  
                                      absorption. Harmful if swallowed. Corrosive to eyes.  
                                      Corrosive to respiratory system. Corrosive to skin.  
                                      Severe eye irritant. Severe respiratory tract  
                                      irritant. Severe skin irritant.EXTINGUISHING MEDIA    Ignition will give rise to a Class B fire. In case of  
                                      large fire use: alcohol foam, water spray. In case of  
                                      small fire use: carbon dioxide (CO<sub>2</sub>), dry chemical,  
                                      dry sand or limestone.\*\*\*\*\*  
C.A.S. CHEMICAL NAME        Mixture

SYNONYMS                    None

CHEMICAL FAMILY            Tertiary Amine  
EMPIRICAL FORMULA        Mixture  
INTENDED USE              Catalyst  
REVISION NOTES            None

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**SECTION 2 - INGREDIENTS**

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Num %            CAS Number and Chemical Name  
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1. 100.00    3855-32-1    BIS (DIMETHYLAMINOPROPYL) METHYLAMINE

**OSHA (ACGIH) EXPOSURE LIMITS**

	TWA		STEL		CEILING	
	ppm	mg/m3	ppm	mg/m3	ppm	mg/m3
1. OSHA	N/E	N/E	N/E	N/E	N/E	N/E
ACGIH	N/E	N/E	N/E	N/E	N/E	N/E

N/E = Not Established.

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**SECTION 3 - HEALTH HAZARDS**

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**ROUTES OF EXPOSURE**

Eye Contact  
Skin Contact  
Ingestion  
Inhalation  
Skin Absorption

**EXPOSURE STANDARDS**

Formaldehyde concentrations in the workplace air may exceed the TLV under certain conditions of use. See Section 2 for exposure standards on ingredients. Maintain air contaminant concentrations in the workplace at the lowest feasible levels. Minor components will migrate into the container headspace. Levels in excess of the TLV's or PEL's can accumulate in non-vented container headspaces. Open drums in a well ventilated space. The principal volatile component is water. Minor volatile components are identified in Section 2 "Ingredients".

**HEALTH HAZARDS**

Toxic (ANSI Z129.1 1988) by skin absorption.  
Harmful if swallowed.  
Corrosive to eyes.  
Corrosive to respiratory system.  
Corrosive to skin.

Severe eye irritant.  
Severe respiratory tract irritant.  
Severe skin irritant.

**TARGET ORGANS**

Eye  
Skin  
Respiratory system

**SIGNS AND SYMPTOMS OF EXPOSURE (Acute effects)**

Product vapor in low concentrations can cause lacrimation, conjunctivitis and corneal edema when absorbed into the tissue of the eye from the atmosphere. Corneal edema may give rise to a perception of "blue haze" or "fog" around lights. The effect is transient and has no known residual effect. Burns of the eye may cause blindness. Contact of undiluted product with the eyes or skin quickly causes severe irritation and pain and may cause burns, necrosis and permanent injury.

Inhalation of vapors may severely damage contacted tissue and produce scarring. Inhalation of aerosol, mist or fog may cause harm if inhaled. Inhalation of aerosols and mists may severely damage contacted tissue and produce scarring.

Risk of exposure to hazardous concentrations of vapor under normal working conditions in a well ventilated space is minimal. However, conditions such as spraying, or sudden release of hot liquid, which generate an aerosol, mists or fog should be avoided.

Product is absorbed through the skin and may cause malaise, discomfort, injury and death unless treated promptly.

**SIGNS AND SYMPTOMS OF EXPOSURE (Possible Longer Term Effects)**

Repeated and/or prolonged exposures may result in: adverse respiratory effects (such as cough, tightness of chest or shortness of breath), adverse eye effects (such as conjunctivitis or corneal damage), adverse skin effects (such as rash, irritation or corrosion).

Effects from inhalation of vapors may be delayed. Repeated and/or prolonged exposure to low concentrations of vapor may cause: sore throat which are transient.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE**

Asthma  
Chronic respiratory disease (e.g. Bronchitis, Emphysema)  
Eye disease  
Skin disorders and Allergies

**CARCINOGENS UNDER OSHA, ACGIH, NTP, IARC**

This product contains no listed carcinogens in concentrations of 0.1 percent or greater.

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**SECTION 4 - FIRST AID**

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**EYE CONTACT**

Hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes. Seek medical advice.

**SKIN CONTACT**

Remove contaminated clothing and shoes. Remove product and immediately flush affected area with water for at least 15 minutes. Destroy contaminated leather apparel. Cover the affected area with a sterile dressing or clean sheeting and transport for medical care. Do not apply greases or ointments. Control shock, if present. Launder contaminated clothing prior to reuse.

**INHALATION**

Move patient to fresh air. If breathing has stopped or is labored give assisted respiration (e.g. mouth-to-mouth). Supplemental oxygen may be indicated. Seek medical advice. Prevent aspiration of vomit. Turn victim's head to the side.

**INGESTION**

In the event of ingestion, administer 3-4 glasses of milk or water. Do not induce vomiting. Seek medical advice.

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**SECTION 5 - FIRE AND EXPLOSION DATA**

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FLASH POINT (closed cup) 92.22 C (198.00 F)

UPPER EXPLOSION LIMIT (UEL) No Data

LOWER EXPLOSION LIMIT (LEL) No Data

AUTOIGNITION TEMPERATURE No Data

FIRE HAZARD CLASSIFICATION (OSHA/NFPA)

Class IIIA

**EXTINGUISHING MEDIA**

Ignition will give rise to a Class B fire. In case of large fire use: water spray, alcohol foam. In case of small fire use: carbon dioxide (CO<sub>2</sub>), dry chemical, dry sand or limestone.

**SPECIAL FIRE FIGHTING PROCEDURES**

A face shield should be worn. Firefighters should wear butyl rubber boots, gloves, and body suit and a self-contained breathing apparatus. Water spray may be used to cool closed containers exposed to fire. Retain expended liquids from fire fighting for later disposal.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

May generate toxic or irritating combustion products.

Contact of liquid with skin must be prevented.

Sudden reaction and fire may result if product is mixed with an oxidizing agent.

May generate carbon monoxide gas. May generate toxic nitrogen oxide gases. May generate ammonia gas.

Personnel in vicinity and downwind should be evacuated.

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**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

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**CONTAINMENT TECHNIQUES (Removal of ignition sources, diking etc)**

Stop the leak, if possible. Ventilate the space involved. Reduce vapor spreading with a water spray. Shut off or remove all ignition sources. Construct a dike to prevent spreading (includes molten liquids until they freeze). Protect workers with water spray.

**CLEAN-UP PROCEDURES**

If recovery is not feasible, admix with dry soil, sand or non-reactive absorbent and place in an appropriate chemical waste container. Transfer to containers by suction, preparatory for later disposal. Place in metal containers for recovery or disposal. Flush area with water spray. Clean-up personnel must be equipped with self contained breathing apparatus and butyl rubber protective clothing. For large spills, recover spilled material with a vacuum truck.

**OTHER EMERGENCY ADVICE**

Open enclosed spaces to outside atmosphere. Wear protective clothing, boots, gloves, and eye protection.

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**SECTION 7 - HANDLING AND STORAGE**

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**STORAGE**

Keep away from: acids, oxidizers, heat, flames, sparks. Keep in cool, dry, ventilated storage and in closed containers. Store away from ignition sources. Ground all containers during transfer. Store in steel containers preferably located outdoors, above ground, and surrounded by dikes to contain spills or leaks. Do not store in reactive metal containers. Recommended suitable container materials include plastic, stainless, and carbon steels.

**HANDLING**

Avoid contact with skin or eyes. Avoid breathing of vapors. Handle in well ventilated work space. Smoking in area is prohibited. Remove all equipment which may be a source of ignition from vicinity while handling. When handling, do not eat, drink, or smoke.

**OTHER PRECAUTIONS**

Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations (e.g. OSHA).

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**SECTION 8 - PERSONAL PROTECTION / EXPOSURE CONTROLS**

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**EYE PROTECTION**

Full face shield with goggles underneath.

**HAND PROTECTION**

Neoprene rubber gloves. Impermeable gloves. Cuffed butyl rubber gloves.

Nitrile rubber gloves. Rubber Gloves. The breakthrough time of the selected glove(s) must be greater than the intended use period.

#### RESPIRATORY PROTECTION

Not required under normal conditions in a well-ventilated workplace. An organic vapor respirator National Institute for Occupational Safety and Health (NIOSH) approved for organic vapors is recommended under emergency conditions.

#### PROTECTIVE CLOTHING

Impervious clothing. Slicker Suit. Rubber boots. Full rubber suit (rain gear). Butyl or latex protective clothing.

#### ENGINEERING CONTROLS

Explosion proof and general local exhaust with 12-30 air changes per hour. Maintain air concentrations in work spaces in accord with standards outlined in Sections 2 and 3.

#### WORK AND HYGIENIC PRACTICES

Provide readily accessible eye wash stations and safety showers. Wash at the end of each workshift and before eating, smoking or using the toilet. Promptly remove clothing that becomes contaminated. Discard contaminated leather articles. Launder or discard contaminated clothing.

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### SECTION 9 - TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

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PHYSICAL FORM	Mobile liquid
COLOR	Colorless /
ODOR	Fishy
pH	11.20
VAPOR PRESSURE (mm Hg at 21C (70F))	4.10
VAPOR DENSITY (Air = 1)	No Data
BOILING POINT	227.00 C (440.60 F)
MELTING POINT	No Data
SOLUBILITY IN WATER	Completely (100%)
SPECIFIC GRAVITY (Water = 1)	0.85
MOLECULAR WEIGHT	Mixture

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### SECTION 10 - STABILITY AND REACTIVITY

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#### CHEMICAL STABILITY

Stable

#### CONDITIONS TO AVOID (if unstable)

Not applicable

#### INCOMPATIBILITY (Materials to Avoid)

Mineral acids (i.e. sulfuric, phosphoric, etc.). Organic acids (i.e. acetic acid, citric acid etc.). Oxidizing Agents (i.e. perchlorates, nitrates etc.). Sodium or Calcium Hypochlorite. Product slowly corrodes

copper, aluminum, zinc and galvanized surfaces. Heat. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. A reaction accompanied by large heat release occurs when the product is mixed with acids. Heat generated may be sufficient to cause vigorous boiling creating a hazard due to splashing or splattering of hot material.

**HAZARDOUS DECOMPOSITION PRODUCTS** (from burning, heating, or reaction with other materials).

Nitrogen oxide can react with water vapors to form corrosive nitric acid (TLV=2 ppm). Carbon Monoxide in a fire. Carbon Dioxide in a fire. Ammonia when heated. Nitrogen Oxides in a fire. Irritating and toxic fumes at elevated temperatures. Nitric acid in a fire. The oxides of nitrogen gases (except nitrous oxide) emitted on decomposition are highly toxic.

**HAZARDOUS POLYMERIZATION**

Will not occur

**CONDITIONS TO AVOID** (if polymerization may occur)

Not applicable

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## **SECTION 11 - TOXICOLOGICAL PROPERTIES**

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**ACUTE ORAL TOXICITY (LD50, RAT)**

1900.00 mg/kg

**ACUTE DERMAL TOXICITY (LD50, RABBIT)**

569.00 mg/kg

**ACUTE INHALATION TOXICITY (LC50, RAT)**

>1.48 mg/l / 1 hr (No deaths)

**OTHER ACUTE EFFECTS**

No Data

**IRRITATION EFFECTS DATA**

Corrosive to the skin of a rabbit.

**CHRONIC/SUBCHRONIC DATA**

This product has been tested and shown not to cause mild sensitization in guinea pigs.

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## **SECTION 12 - ECOLOGICAL INFORMATION**

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No Data

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## **SECTION 13 - DISPOSAL CONSIDERATIONS**

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**WASTE DISPOSAL**

Comply with all Federal, State and Local Regulations.

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**SECTION 14 - TRANSPORT INFORMATION**

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DOT NON-BULK SHIPPING NAME Corrosive liquids, toxic, n.o.s. (BIS (DIMETHYLAMINOPROPYL) METHYLAMINE) // 8 // UN2922 // PG III // (6.1) // NAERG Guide No: 154

DOT BULK SHIPPING NAME Refer to Bill of Lading.

IMO SHIPPING DATA Refer to Bill of Lading.

ICAO/IATA SHIPPING DATA Corrosive liquid, toxic, n.o.s. (BIS (DIMETHYLAMINOPROPYL) METHYLAMINE) // 8 // UN2922 // III // (6.1) // Shipment per 49 CFR 171.11 // NAERG Guide No: 154

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**SECTION 15 - REGULATORY INFORMATION**

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**US FEDERAL REGULATIONS****TOXIC SUBSTANCES CONTROL ACT (TSCA)-**

All components are included in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

**TOXIC SUBSTANCE CONTROL ACT (TSCA) 12(b) COMPONENT(S)**

None

**OSHA Hazard Communication Standard (29CFR1910.1200) hazard class(es)**

Corrosive. Toxic by skin absorption. Combustible.

**EPA SARA Title III Section 312 (40CFR370) hazard class**

Immediate Health Hazard. Fire Hazard.

**EPA SARA Title III Section 313 (40CFR372) toxic chemicals above "de minimis" level are**

None

**PROPOSITION 65 SUBSTANCES (component(s) known to the State of California to cause cancer and/or reproductive toxicity and subject to warning and discharge requirements under the "Safe Drinking Water and Toxic Enforcement Act of 1986")**

Formaldehyde

**NEW JERSEY TRADE SECRET REGISTRY NUMBER(S)**

None

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**SECTION 16 - INTERNATIONAL REGULATIONS**

CANADA

DSL

Included on Inventory.

WHMIS HAZARD CLASSIFICATION

Class B Division 3, Class D Division 1B, Class E Corrosive,  
WHMIS TRADE SECRET REGISTRY NUMBER(S)

This product has been classified in accordance with the hazard  
criteria of the CPR and the MSDS contains all the information  
required by the CPR.

None

WHMIS INGREDIENT DISCLOSURE LIST

None

WHMIS SYMBOLS

Test tube/hand, Skull and Crossbones, Flames,

EUROPEAN ECONOMIC COMMUNITY (EEC)

EINECS/ELINCS MASTER INVENTORY

Included on EINECS inventory or polymer substance, monomers  
included on EINECS inventory or no longer polymer.

EEC SYMBOL

CORROSIVE (C)

EEC RISK (R) PHRASES

Causes burns (R34). Harmful in contact with skin and if swallowed  
(R21/22).

EEC SAFETY PHRASES

In case of contact with eyes, rinse immediately with plenty of  
water and seek medical advice (S26). Wear suitable protective  
clothing, gloves and eye/face protection (S36/37/39). In case of  
accident or if you feel unwell, seek medical advice immediately  
(show the label where possible) (S45).

AUSTRALIA

AICS

Included on Inventory.

JAPAN MITI

Included on Inventory.

PHILIPPINES PICCS

Included on Inventory.

KOREA ECL

Included on Inventory.

CHINA SEPA

Included on Inventory.

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PRODUCT CODE

PC77

END OF DOCUMENT