

MATERIAL SAFETY DATA SHEET

SECTION I

POLYMERIC IMAGING INC.
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ISSUED: 03.16.03
REVISED:
REVISION NUMBER:

PRODUCT NAME: CATALYST
PRODUCT CODE: 2980+
COMMON NAME: ALIPHATIC
POLYISOCYANATE
HMIS
HEALTH: 2
FLAMMABILITY: 1
REACTIVITY: 1

SECTION II HAZARDOUS COMPONENTS

HAZARDOUS COMPONENTS	CAS #	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMENDED
HOMOPOLYMER OF HDI	28182-81-2	NE	NE	MANUF.: .5 MG/M3 8 HRS. 1.0 MG/M3 STEL(15 MIN)
HEXAMETHYLENE DIISOCYANATE	822-06-0	NE	.005 PPM TWA .034 MG/M3 TWA	MANUF: .02 PPM CEILING

ALL COMPONENTS USED ARE EITHER LISTED OR EXCLUDED FROM LISTING ON THE TSCA INVENTORY.

SARA TITLE III SECTION 313 INFORMATION:

THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICALS SUBJECT TO THE ANNUAL REPORTING REQUIREMENTS OF SECTION 313 TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR 372.

HEXAMETHYLENE DIISOCYANATE 822-06-0 .7-1.60%

DOT/IATA SHIPPING INFORMATION

DOT COMMON NAME: NOT REGULATED(UNDER 6250 POUNDS)
DOT HAZARD CLASS:NOT REGULATED
IATA COMMON NAME:NOT REGULATED
IATA HAZARD CLASS:NOT REGULATED

SECTION III PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: °CELSIUS/°FAHRENHEIT	NOT MEASURABLE
VAPOR PRESSURE: MMHG	HDI POLYISOCYANATE: 9.30 X 10-6 MM HG @20°C
VAPOR DENSITY: AIR=1	NOT ESTABLISHED
SPECIFIC GRAVITY: H2O=1	1.14 G/CM3@20°C
MELTING POINT: °CELSIUS/°FAHRENHEIT	NOT ESTABLISHED
EVAPORATION RATE: BUTYL ACETATE=1	NOT AVAILABLE
SOLUBILITY IN WATER:	RESIN IS INSOLUBLE-REACTS SLOWLY WITH H2O TO LIBERATE CO2 GAS
APPEARANCE AND ODOR:	CLEAR/PALE YELLOW LIQUID, NEARLY ODORLESS

SECTION IV**FIRE AND EXPLOSION HAZARD DATA**

FLASHPOINT: °CELSIUS/°FAHRENHEIT	375°F SETAFLASH(ASTM D-3243, D-3278, D-3828)
FLAMMABLE LIMITS:	
LEL	NOT DETERMINED
UEL	NOT DETERMINED
EXTINGUISHING MEDIA:	ALCOHOL FOAM CO2
	DRY CHEMICAL WATER FOG

SPECIAL FIREFIGHTING PROCEDURES:

FULL PROTECTIVE EQUIPMENT IS RECOMMENDED TO PROTECT FIRE FIGHTERS FROM ANY HAZARDOUS DECOMPOSITION PRODUCTS. WATER MAY BE UNSUITABLE FOR USE ON BURNING LIQUIDS. IF WATER MUST BE USED, FOG NOZZLES ARE HIGHLY PREFERABLE. WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTO-IGNITION, EXPLOSION, OR RUPTURE WHEN EXPOSED TO EXTREME HEAT. DURING A FIRE, HDI VAPORS AND OTHER IRRITATING, HIGHLY TOXIC GASES MAY BE GENERATED BY THERMAL DECOMPOSITION OR COMBUSTION. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT OR BURST WHEN CONTAMINATED WITH WATER.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, SPARKS, ELECTRICAL EQUIPMENT AND OPEN FLAMES. CLOSED CONTAINERS MAY RUPTURE OR EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY CONDITIONS, OVEREXPOSURE TO DECOMPOSITION PRODUCTS MAY CONSTITUTE A HEALTH HAZARD. SYMPTOMS MAY NOT BE IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

SECTION V**REACTIVITY DATA**

STABILITY:	IF CONTAINER IS EXPOSED TO HIGH HEAT, IT CAN BE PRESSURIZED AND POSSIBLY RUPTURE EXPLOSIVELY. HDI REACTS SLOWLY WITH WATER TO FORM CO2 GAS. THIS GAS CAN CAUSE SEALED CONTAINERS TO EXPAND AND POSSIBLY RUPTURE EXPLOSIVELY.
CONDITIONS TO AVOID:	EXTREME TEMPERATURES, DIRECT SUNLIGHT, XRAY, ELECTRON BEAM/UV SOURCES
INCOMPATIBILITY: MATERIALS TO AVOID	STRONG ACIDS, OXIDIZERS, ALKALI METAL HYDROXIDES, POLYMERIZATION INITIATORS, PEROXIDES, INERT GASES, AMINES
HAZARDOUS DECOMPOSITION OR BYPRODUCTS	CARBON MONOXIDE, CARBON DIOXIDE, MIXED OXIDES OF NITROGEN, SULFUR AND METHACRYLATE MONOMERS
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR UNDER NORMAL CONDITIONS

SECTION VI**HEALTH HAZARD DATA**

ROUTES OF ENTRY:	INHALATION, SKIN, EYE
HEALTH HAZARDS: ACUTE/CHRONIC	INHALATION, SKIN, EYE, INGESTION
CARCINOGENICITY:	NOT ESTABLISHED
NTP: OSHA:	NOT LISTED

IARC MONOGRAPHS:	NOT LISTED
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SIGNS AND SYMPTOMS OF OVEREXPOSURE:

INGESTION: MAY CAUSE IRRITATION OF THE MOUTH, THROAT, ESOPHAGUS, AND STOMACH. THERE MAY BE DISCOMFORT OR PAIN IN THE MOUTH, THROAT, CHEST AND ABDOMEN, WITH NAUSEA, VOMITING, DIARRHEA, DIFFICULTY SWALLOWING, WEAKNESS, THIRST, DIZZINESS, AND DROWSINESS. ASPIRATION INTO THE LUNGS MAY OCCUR DURING INGESTION OR VOMITING, RESULTING IN LUNG INJURY.

INHALATION: HDI VAPORS OR MIST AT CONCENTRATIONS ABOVE THE TLV OR MGL CAN IRRITATE THE MUCOUS MEMBRANES IN THE RESPIRATORY TRACT CAUSING RUNNY NOSE, SORE THROAT, COUGHING, CHEST CONGESTION, SHORTNESS OF BREATH AND REDUCED LUNG FUNCTION. PERSONS WITH PREEXISTING, NONSPECIFIC BRONCHIAL HYPERREACTIVITY CAN RESPOND TO CONCENTRATIONS BELOW THE TLV OR MGL WITH SIMILAR SYMPTOMS AS WELL AS AN ASTHMA ATTACK. EXPOSURE WELL ABOVE THE TLV OR MGL MAY LEAD TO BRONCHITIS, BRONCHIAL SPASM AND PULMONARY EDEMA. THESE EFFECTS ARE USUALLY REVERSIBLE. CHEMICAL OR HYPERSENSITIVE PNEUMONITIS, WITH FLU-LIKE SYMPTOMS HAS ALSO BEEN REPORTED.

SKIN: CONTAINS MATERIAL THAT MAY CAUSE SEVERE SKIN IRRITATION (REDDENING AND SWELLING) AND/OR SENSITIZATION. PROLONGED CONTACT MAY CAUSE BLISTER FORMATION (BURNS). SINCE IRRITATION MAY NOT OCCUR IMMEDIATELY, CONTACT CAN GO UNNOTICED.

EYE: CONTAINS MATERIALS THAT MAY CAUSE MODERATE IRRITATION, INCLUDING BURNING SENSATION TEARING, REDNESS OR SWELLING.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED BY OVEREXPOSURE: LUNG CONDITIONS, SENSITIZATION, OR ALLERGIES, SKIN AND EYE CONDITIONS.

MEDICAL CONDITONS AGGRAVATED BY EXPOSURE:

DERMATITUS, LUNG CONDITIONS(I.E. ASTHMA), SENSITIZATION, ALLERGIES, SKIN AND EYE CONDITIONS.

EMERGENCY AND FIRST AID PROCEDURES:

INGESTION: DRINK TWO GLASSES OF WATER OR MILK TO DILUTE. DO NOT INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. CONSULT PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY. BE PREPARED TO PROVIDE THE ATTENDING PHYSICIAN WITH A COPY OF THIS DOCUMENT.

INHALATION: REMOVE VICTIM TO A WELL VENTILATED AREA. GIVE OXYGEN OR ARTIFICIAL RESPIRATION AS REQUIRED. TREAT SYMPTOMATICALLY AND CONSULT PHYSICIAN.

SKIN CONTACT: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH MILD SOAP AND WARM WATER. CONSULT A PHYSICIAN IF THERE IS ANY PERSISTING IRRITATION.

EYE CONTACT: FLUSH WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST FIFTEEN MINUTES. CONSULT PHYSICIAN.

SECTION VII**PRECAUTIONS FOR SAFE HANDLING & USAGE****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

PLACE LEAKING CONTAINERS IN A WELL VENTILATED AREA. AVOID BREATHING VAPORS. ELIMINATE ALL SOURCES OF HEAT, AS WELL AS ALL CONDITIONS NOTED IN SECTION VII, ABOVE. NOTIFY PROPER AUTHORITIES IF PUBLIC WATERS OR SEWERS ARE CONTAMINATED.

WASTE DISPOSAL METHODS:

AS A HAZARDOUS WASTE, THIS MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL ORDINANCES. INQUIRE OF YOUR LOCAL ENVIRONMENTAL AGENCIES FOR THE EXACT LEGAL REQUIREMENTS IN YOUR AREA.

REFER TO SECTIONS IV, V, VI, VII AND IX OF THIS DOCUMENT BEFORE ATTEMPTING ANY CLEANUP.

SECTION VIII CONTROL MEASURES

RESPIRATORY PROTECTION:

EXPOSURE TO VAPORS IS UNLIKELY DUE TO LOW VAPOR PRESSURE OF INGREDIENTS, BUT INHALATION OF MIST, AEROSOLS OR VAPORS MAY RESULT IN IRRITATION OF RESPIRATORY TRACT COUGHING, SHORTNESS OF BREATH AND DIZZINESS. IF VAPORS OR MIST EXCEEDS AIR MONITORING LEVELS, A NIOSH APPROVED RESPIRATOR MAY BE USED.

VENTILATION:

LOCAL EXHAUST RECOMMENDED WHEN APPROPRIATE TO CONTROL EXPOSURE TO MISTS OR AEROSOLS. GENERAL EXHAUST IS NORMALLY ADEQUATE TO MINIMIZE EXPOSURE TO VAPORS.

PROTECTIVE EQUIPMENT:

GLOVES **GOGGLES** **SAFETY GLASSES**
 APRON **RESPIRATOR**

***IF ABOVE LIMITS SET IN SECTION II**

WORK/HYGIENIC PRACTICES:

WASH HANDS BEFORE EATING, USING TOBACCO PRODUCTS, OR USING THE WASHROOM. TOBACCO AND FOOD SHOULD BE CONSUMED IN DESIGNATED AREAS ONLY.

PURCHASERS OBLIGATION

POLYMERIC URGES THE CUSTOMER RECEIVING THIS MATERIAL SAFETY DATA SHEET TO STUDY IT CAREFULLY TO BECOME AWARE OF HAZARDS, IF ANY OF THE PRODUCTS INVOLVED. IN THE INTEREST OF SAFETY, YOU SHOULD (1) NOTIFY YOUR EMPLOYEES, AGENTS AND CONTRACTORS OF THE INFORMATION ON THIS SHEET, (2) FURNISH A COPY TO EACH OF YOUR CUSTOMERS FOR THIS PRODUCT, AND (3) REQUEST YOUR CUSTOMERS TO INFORM THEIR EMPLOYEES, CUSTOMERS AND AGENTS AS WELL.

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