

MATERIAL SAFETY DATA SHEET

REVISION DATE: 10-10-2001

SUPERSEDES: 05-23-2001

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Resin Technology, Inc
131-A1 Business Center Drive
Ormond Beach, FL 32174

Medical Emergency Phone Number (24 Hours): 1-888-853-1758

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

PRODUCT INFORMATION

PRODUCT IDENTIFIER: 802589PM
PRODUCT NUMBER: FH3140B
PRODUCT DESCRIPTION: Urethane curative

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for any additional exposure limit guidelines.

Chemical Name	CAS #	PERCENT	OSHA PEL
Phenylenediamine, meta	108-45-2	10 - 30	Not established
Methylpyrrolidone, N-	872-50-4	10 - 30	Not established
Dibutyl phthalate	84-74-2	5 - 10	TWA 4 MG/M3
2-Pyrrolidone	616-45-5	1 - 5	Not established
Toluene	108-88-3	0.1 - 1	TWA 100 ppm STEL 150 ppm

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Combustible

Moderate eye irritant.

Can cause skin irritation. May cause allergic skin reaction.

Harmful if swallowed.

MATERIAL SAFETY DATA SHEET

HMIS RATING: HEALTH -- 2 FLAMMABILITY -- 2 REACTIVITY -- 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

POTENTIAL HEALTH EFFECTS BY ROUTE OF ENTRY

EYE: Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.

SKIN: Continued or prolonged contact may irritate the skin and cause a skin rash (dermatitis). May cause sensitization.

Component(s) may be absorbed through intact skin, but it is unlikely that harmful effects will occur unless contact is prolonged, repeated, and extensive.

INHALATION: No irritation hazard in normal industrial use.

Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination.

INGESTION: Ingestion is not an anticipated route of exposure. Harmful if swallowed. Irritating to mouth, throat, and stomach.

LONG-TERM (CHRONIC) HEALTH EFFECTS

REPRODUCTIVE: Contains a substance that is a possible reproductive hazard based on animal studies at doses that could be encountered in the workplace.

TARGET ORGAN(S): Liver, Reproductive system, Central nervous system

REGULATED CARCINOGEN STATUS:

Unless noted below, this product does not contain regulated levels of NTP, IARC, ACGIH, or OSHA listed carcinogens.

EXISTING HEALTH CONDITIONS AFFECTED BY EXPOSURE: Liver disease

SECTION 4: FIRST AID MEASURES

IF IN EYES: Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician.

IF ON SKIN: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

IF VAPORS INHALED: This material does not present a hazard if inhaled. Remove individual to fresh air after an airborne exposure if any symptoms develop, as a precautionary measure.

IF SWALLOWED: Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Do not give anything by mouth to an unconscious person. Induce vomiting as a last measure. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT:

91C; 196F

AUTOIGNITION TEMPERATURE:

Not established

LOWER EXPLOSIVE LIMIT (% in air):

Not established

UPPER EXPLOSIVE LIMIT (% in air):

Not established

EXTINGUISHING MEDIA:

Use water spray, foam, dry chemical or carbon dioxide.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Vapors are heavier than air and can travel to a source of ignition and flash back.

MATERIAL SAFETY DATA SHEET

SPECIAL FIRE FIGHTING INSTRUCTIONS: Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, Carbon monoxide, Nitrogen containing gases

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION: Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Evaporation of volatile substances can lead to the displacement of air creating an environment that can cause asphyxiation.

CLEAN-UP:

Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: Harmful or irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area.

Keep away from heat, sparks and flame.

Wash thoroughly after handling.

Keep container closed.

Emptied container retains vapor and product residue.

Observe all labeled precautions until container is cleaned.

Drums of this material should be grounded when pouring.

DO NOT CUT OR WELD ON OR NEAR THIS CONTAINER.

Storage: Store in a cool, dry, ventilated location. Keep away from heat and flame. Keep container closed.

Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION: Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.

SKIN PROTECTION: Avoid skin contact by wearing chemically resistant gloves and long sleeved shirt. An apron may be appropriate if splashing can occur. Skin absorption may potentially contribute to the overall exposure to this material. Appropriate measures should be taken to prevent absorption so that the TLV is not invalidated.

GLOVES: Nitrile

RESPIRATORY PROTECTION: No respiratory protection required under normal conditions of use. NIOSH approved air purifying respirator with organic vapor cartridge and dust/mist filter. Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

MATERIAL SAFETY DATA SHEET

VENTILATION:

Use local exhaust ventilation or other engineering controls to minimize exposures.

EXPOSURE LIMITS:

Chemical Name	ACGIH EXPOSURE LIMITS	AHA WEEL
Phenylenediamine, meta	TWA 0.1 MG/M3	Not established
Methylpyrrolidone, N-	Not established	TWA 10 ppm Skin notation
Dibutyl phthalate	TWA 5 MG/M3	Not established
2-Pyrrolidone	Not established	Not established
Toluene	TWA 50 ppm Skin notation	Not established

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	Brown
ODOR:	Amine
ODOR THRESHOLD:	Not established
WEIGHT PER GALLON (lbs.):	8.9
SPECIFIC GRAVITY:	1.07
SOLIDS (% by weight):	75.5
pH:	Not established
BOILING POINT (deg. C):	Not established
FREEZING/MELTING POINT (deg. C):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
EVAPORATION RATE:	Not established
OCTANOL/WATER COEFFICIENT:	Not established

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions.
CHEMICAL INCOMPATIBILITY:	Not established
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide, Nitrogen containing gases

SECTION 11: TOXICOLOGICAL INFORMATION

CHEMICAL NAME	LD50/LC50
---------------	-----------

MATERIAL SAFETY DATA SHEET

Phenylenediamine, meta	Oral LD50 Rat = 280 mg/kg
Methylpyrrolidone, N-	Oral LD50 Rat = 3914 mg/kg
Dibutyl phthalate	Dermal LD50 Rabbit = 8 g/kg Oral LD50 Rat = 8 g/kg Inhalation LC50 Mouse = 4250 mg/cu m/4H Dermal LD50 Rabbit > 20 ml/kg
2-Pyrrolidone	Oral LD50 Rat = 8 mg/kg
Toluene	Oral LD50 Rat = 636 mg/kg Inhalation LC50 Rat = 49000 mg/cu m/4H Dermal LD50 Rabbit = 14.1 ml/kg

TOXICOLOGY SUMMARY: No additional health information available.

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW: No ecological information available

262.9 g VOC/liter of material
(VOC theoretically determined using EPA Publication 450/3-84-019)

SECTION 13: DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Disposal via incineration at an approved facility is recommended. Consult state, local or provincial authorities for more restrictive requirements.

LAND DISPOSAL RESTRICTIONS: Di-n-butyl phthalate, Toluene

SECTION 14: TRANSPORTATION INFORMATION

Consult Bill of Lading for transportation information.

DOT: SINGLE CONTAINER <102 POUNDS: "TOXIC, LIQUIDS, ORGANIC, N.O.S. (M-PHENYLENEDIAMINE), 6.1, UN2810, III". SINGLE CONTAINER >101 POUNDS: "TOXIC, LIQUIDS, ORGANIC, N.O.S. (M-PHENYLENEDIAMINE), 6.1, UN2810, III, RQ (DBP)"
IATA: TOXIC LIQUID, ORGANIC, N.O.S. (M-PHENYLENEDIAMINE), 6.1, UN2810, PG.III

SECTION 15: REGULATORY INFORMATION

INVENTORY STATUS

U.S. EPA TSCA: This product is in compliance with the Toxic Substances Control Act's Inventory requirements.

CANADIAN CEPA DSL: This product is in compliance with the Canadian Domestic Substance List requirements.

If you need more information about the inventory status of this product call 651-236-5858.

TSCA Section 12(b) - Export Notice Requirements

This product contains a chemical substance that is currently on the EPA's Section 12(b) Export List. Contact the company Global Regulatory Group at 651/236-5858 for the identity of the Section 12(b) chemical(s).

This product contains a chemical substance that is subject to a Consent Order: N-Methylpyrrolidinone
Di-n-butyl phthalate

FEDERAL REPORTING

MATERIAL SAFETY DATA SHEET

EPA SARA Title III Section 313

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 72. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
1,3-Phenylenediamine	108-45-2	10 - 30
N-Methyl-2-pyrrolidinone	872-50-4	10 - 30
Dibutyl phthalate	84-74-2	5 - 10
Toluene	108-88-3	0.1 - 1

WHMIS STATUS: Unless listed below, this product is not controlled under the Canadian Workplace Hazardous Materials Information System.

B3

D2B D1B D1A D2A

STATE REPORTING

This MSDS is not prepared for distribution in California.

SECTION 16: ADDITIONAL INFORMATION

This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

Prepared by: The Global Regulatory Department

Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to Fiber Resin Corporation from its suppliers, and because Fiber Resin Corporation has no control over the conditions of handling and use, Fiber Resin Corporation makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and Fiber Resin Corporation assumes no responsibility for use or reliance thereon. It is the responsibility of the user of Fiber Resin Corporation products to comply with all applicable federal, state and local laws and regulations.

MATERIAL SAFETY DATA SHEET

REVISION DATE: 04-09-2002

SUPERSEDES: 10-10-2001

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY INFORMATION

Resin Technology, Inc
131-A1 Business Center Drive
Ormond Beach, FL 32174

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

PRODUCT INFORMATION

PRODUCT IDENTIFIER: 802590PM
PRODUCT NUMBER: FH3140A
PRODUCT DESCRIPTION: Isocyanate crosslinker

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for any additional exposure limit guidelines.

Chemical Name	CAS #	PERCENT	OSHA PEL
Prepolymer, dicyclohexylmethane-4,4-diisocyanate		70 - 100	Not established
Methylene bis(cyclohexyl)isocyanate	5124-30-1	10 - 30	Ceiling 0.01 ppm Skin notation

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Moderate to severe eye irritant.
Causes skin irritation. May cause allergic skin reaction.
May cause an allergic respiratory reaction.
Harmful if swallowed.

HMIS RATING: HEALTH - 2 FLAMMABILITY - 1 REACTIVITY - 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

POTENTIAL HEALTH EFFECTS BY ROUTE OF ENTRY

EYE: Eye contact may cause moderate to severe eye irritation. Eye contact may result in tearing and reddening, but not likely to permanently injure eye tissue. Temporary vision impairment (cloudy or blurred vision) is possible.

SKIN: Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage. May cause sensitization.

MATERIAL SAFETY DATA SHEET

Component(s) may be absorbed through intact skin, but it is unlikely that harmful effects will occur unless contact is prolonged, repeated, and extensive.

INHALATION: Can cause minor respiratory irritation. May cause permanent impairment of respiratory function. May cause allergic respiratory reaction.

Avoid breathing vapors or mists.

Other possible symptoms include; wheezing and coughing due to pulmonary edema (fluid build-up in lungs).

INGESTION: Ingestion is not an anticipated route of exposure. Harmful if swallowed. Severely irritating to mouth, throat, and stomach.

LONG-TERM (CHRONIC) HEALTH EFFECTS

TARGET ORGAN(S): Lungs Skin

REGULATED CARCINOGEN STATUS:

Unless noted below, this product does not contain regulated levels of NTP, IARC, ACGIH, or OSHA listed carcinogens.

EXISTING HEALTH CONDITIONS AFFECTED BY EXPOSURE: Persons with existing asthmatic conditions may experience difficulty breathing. Persons who have been sensitized to isocyanates may experience symptoms at very low exposure levels.

SECTION 4: FIRST AID MEASURES

IF IN EYES: Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician.

IF ON SKIN: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

IF VAPORS INHALED: Remove to fresh air. Call a physician if symptoms persist.

IF SWALLOWED: Severely irritating. Do not induce vomiting. Seek medical attention immediately. Drink 2 glasses of water or milk to dilute. Do not give anything by mouth to an unconscious person. Induce vomiting as a last measure. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT:	149C; 300F
AUTOIGNITION TEMPERATURE:	Not established
LOWER EXPLOSIVE LIMIT (% in air):	Not established
UPPER EXPLOSIVE LIMIT (% in air):	Not established
EXTINGUISHING MEDIA:	Use water spray, foam, dry chemical or carbon dioxide.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Material will burn in a fire.
SPECIAL FIRE FIGHTING INSTRUCTIONS:	Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.
HAZARDOUS COMBUSTION PRODUCTS:	Hydrogen cyanide Nitrogen containing gases Carbon dioxide, Carbon monoxide

MATERIAL SAFETY DATA SHEET

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION: Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred.

CLEAN-UP: Cover with absorbent material. Place in open topped container. Remove to well-ventilated area and treat with aqueous ammonia. Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: Harmful or Irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Wash thoroughly after handling. Moisture contamination in closed containers may produce carbon dioxide gas pressure. Avoid skin contact with product at all times.

Storage: Store in a cool, dry place.

Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION: Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.

SKIN PROTECTION: Avoid skin contact by wearing chemically resistant gloves and long sleeved shirt. An apron may be appropriate if splashing can occur.

GLOVES: Nitrile

RESPIRATORY PROTECTION: Respiratory protection may be required to avoid overexposure when handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. Use supplied-air respiratory equipment as required.

Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

VENTILATION: Use local exhaust ventilation or other engineering controls to minimize exposures.

EXPOSURE LIMITS:

Chemical Name	ACGIH EXPOSURE LIMITS	AIHA WEEL
Prepolymer, dicyclohexylmethane-4, 4-diisocyanate	Not established	Not established
Methylene bis(cyclohexyl)isocyanate	TWA0.005 ppm	Not established

MATERIAL SAFETY DATA SHEET

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	Colorless
ODOR:	Faint Sweet
ODOR THRESHOLD:	Not established
WEIGHT PER GALLON (lbs.):	8.6
SPECIFIC GRAVITY:	1.03
SOLIDS (% by weight):	100.0
pH:	Not established
BOILING POINT (deg. C):	Not established
FREEZING/MELTING POINT (deg. C):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
EVAPORATION RATE:	Not established
OCTANOL/WATER COEFFICIENT:	Not established

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions.
CHEMICAL INCOMPATIBILITY:	Alcohols Amines Strong acids Strong alkalis Water
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Hydrogen cyanide Nitrogen containing gases Carbon monoxide, carbon dioxide

SECTION 11: TOXICOLOGICAL INFORMATION

CHEMICAL NAME	LD50/LC50
Prepolymer, dicyclohexylmethane-4, 4'-diisocyanate	Not established
Methylene bis(cyclohexyl)isocyanate	Oral LD50 Rat 9900 mg/kg Inhalation LC50 Guinea pig 1.25 mg/cu m/4H

TOXICOLOGY SUMMARY: No additional health information available.

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW: No ecological information available

SECTION 13: DISPOSAL CONSIDERATIONS

It is our opinion that this product does not meet the definition of hazardous waste under U.S. EPA Hazardous Waste Regulations 40 CFR 261. Dispose of waste material according to state, local or provincial regulations.

SECTION 14: TRANSPORTATION INFORMATION

Consult Bill of Lading for transportation information.

MATERIAL SAFETY DATA SHEET

DOT: ISOCYANATE SOLUTIONS, TOXIC, N.O.S. (4,4-DICYCLOHEXANEDIISOCYANATE), 6.1,
UN2206, PG.III

SECTION 15: REGULATORY INFORMATION

INVENTORY STATUS

U.S. EPA TSCA: This product is in compliance with the Toxic Substances Control Act's
Inventory requirements.

If you need more information about the inventory status of this product call 651-236-5858.

TSCA Section 12(b) - Export Notice Requirements

This product contains a chemical substance that is currently on the EPA's Section 12(b) Export List. Contact the
company Global Regulatory Group at 651/236-5858 for the identity of the Section 12(b) chemical(s).

FEDERAL REPORTING

EPA SARA Title III Section 313

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section
313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 72. EPA
has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
1,1'-Methylene bis(4-isocyanatocyclohexane)	5124-30-1	10 - 30

WHMIS STATUS: Unless listed below, this product is not controlled under the Canadian Workplace Hazardous
Materials Information System.

D2A D2B D1A

STATE REPORTING

This MSDS is not prepared for distribution in California.

SECTION 16: ADDITIONAL INFORMATION

This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health
Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace
Hazardous Materials Information System (WHMIS).

Prepared by: The Global Regulatory Department

Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information
is derived from information provided to Fiber Resin Corporation from its suppliers, and because Fiber Resin
Corporation has no control over the conditions of handling and use, Fiber Resin Corporation makes no warranty,
expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The
information is supplied solely for your information and consideration, and Fiber Resin Corporation assumes no
responsibility for use or reliance thereon. It is the responsibility of the user of Fiber Resin Corporation products to
comply with all applicable federal, state and local laws and regulations.