



SAFETY DATA SHEET

Date Prepared : 09/17/2015
 SDS No : UMR 411 Iso
 Date Revised : 11/17/2015
 Revision No : 1

IsoMold UMR 411 Iso

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: IsoMold UMR 411 Iso

MANUFACTURER

Isotec® International, Inc.
 201 Longview Street
 Canton, GA 30114
Customer Service: 800-234-6300

24 HR. EMERGENCY TELEPHONE NUMBERS

Poison Control Center (Medical) : (877) 800-5553
ChemTel (USA) : (800) 255-3924
ChemTel (International) : (813) 248-0585

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATIONS

Health:

Acute Toxicity (Inhalation), Category 2
 Skin Irritation, Category 2
 Eye Irritation, Category 2
 Respiratory Sensitization, Category 1
 Skin Sensitization, Category 1
 Target Organ Toxicity (Single exposure), Category 3
 Carcinogenicity, Category 2

GHS LABEL



Health
hazard



Skull and
crossbones

SIGNAL WORD: DANGER

HAZARD STATEMENTS

H315: Causes skin irritation.
 H317: May cause an allergic skin reaction.
 H319: Causes serious eye irritation.
 H330: Fatal if inhaled.
 H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H335: May cause respiratory irritation.
 H351: Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).

PRECAUTIONARY STATEMENT(S)

Prevention:

P260: Do not breathe mist, vapors or spray.
 P264: Wash hands thoroughly after handling.
 P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves, protective clothing, eye protection and face protection.

P284: In case of inadequate ventilation wear respiratory protection.

Response:

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P333+P313: If skin irritation or rash occurs: Get medical attention.

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P342+P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313: If eye irritation persists: Get medical attention.

P308+P313: IF exposed or concerned: Get medical attention.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS
TDI Prepolymer	65 - 75	9057-91-4
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	15 - 25	6846-50-0
Toluene diisocyanate mixed isomers	≤ 5	26471-62-5

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water. Remove contact lenses, if present. Seek medical attention if irritation persists.

SKIN: Immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Seek medical attention if rash or irritation occurs.

INGESTION: Give one or two glasses of water to drink. Never give anything by mouth to an unconscious person. Obtain immediate medical attention. Do not induce vomiting unless instructed to do so by poison center or physician.

INHALATION: Move person to fresh air. If breathing is difficult, oxygen should be administered by qualified personnel. Obtain medical attention. Symptoms can be delayed for several hours.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Water fog, foam, dry chemical or carbon dioxide.

HAZARDOUS COMBUSTION PRODUCTS: Carbon oxides, nitrogen oxides, isocyanates and trace amounts of hydrogen cyanide.

EXPLOSION HAZARDS: Water contamination produces carbon dioxide gas. This may cause pressurization or explosion of containers.

FIRE FIGHTING EQUIPMENT: Exposed firefighters must wear NIOSH-approved positive pressure self-contained breathing apparatus with full-face mask and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Isolate the area and prevent entry of unnecessary and unprotected personnel. Do not walk through or otherwise scatter spilled product. Absorb with dry chemical absorbent, earth, sand or any other inert material. Place in a chemical waste container. Allow to stand uncovered 48 hours before closing container.

LARGE SPILL: Isolate the area and prevent entry of unnecessary and unprotected personnel. Do not walk through or otherwise scatter spilled product. Create a dike or trench to contain product. Prevent entry into waterways, sewers, basements or confined areas. Absorb with dry chemical absorbent, earth, sand or any other inert material. Place in a chemical waste container. Allow to stand uncovered 48 hours before closing container.

GENERAL PROCEDURES: Clean spill area with a decontamination solution. Suggested formulation: Sodium carbonate (5 -

IsoMold UMR 411 Iso

10%), liquid detergent (1 - 2%), water (88 - 94%). Alternate formulation: Concentrated ammonia (3 - 8%), liquid detergent (1 - 2%), water (90 - 96%). Ensure adequate ventilation to prevent overexposure of ammonia.

SPECIAL PROTECTIVE EQUIPMENT: Wear protective equipment listed in Section 8.

7. HANDLING AND STORAGE

HANDLING: Do not get in eyes, on skin or on clothing. Wash hands before eating, drinking or smoking. Do not breathe vapors or mists. Use only with adequate ventilation. Keep container closed when not in use. Do not reseal if contaminated. Keep away from heat and flame.

STORAGE: Store in tightly closed containers in a cool, dry and well-ventilated area away from heat or sources of ignition. Keep out of direct sunlight.

STORAGE TEMPERATURE: 4.4°C (40°F) Minimum to 37.8°C (100°F) Maximum

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)					
		EXPOSURE LIMITS			
		OSHA PEL		ACGIH TLV	
Chemical Name		ppm	mg/m ³	ppm	mg/m ³
Toluene diisocyanate mixed isomers	TWA	0.005		0.005	
	STEL	0.02		0.02	

ENGINEERING CONTROLS: Local exhaust ventilation used in combination with general ventilation as necessary to control air contaminants.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear a face shield and chemical safety glasses or goggles.

SKIN: Wear impervious gloves. Cover exposed skin.

RESPIRATORY: For airborne exposure above the permissible exposure limit(s), wear a NIOSH approved air-purifying respirator equipped with organic vapor cartridges. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator.

WORK HYGIENIC PRACTICES: Avoid eating, drinking or smoking while using this material. Wash hands thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR: Slightly pungent.

APPEARANCE: Dark liquid.

FLASH POINT AND METHOD: > 93.3°C (200°F) Closed cup.

AUTOIGNITION TEMPERATURE: Not established.

VAPOR PRESSURE: < 0.014 hPa at 20°C (68°F)

VAPOR DENSITY: Heavier than air.

BOILING POINT: Not established.

FREEZING POINT: Not established.

IsoMold UMR 411 Iso

SOLUBILITY IN WATER: Insoluble, reacts with water.**SPECIFIC GRAVITY:** 1.05 (water = 1) at 23.3°C (74°F)**VISCOSITY #1:** 1500 Centipoise at 23.3°C (74°F)**10. STABILITY AND REACTIVITY****HAZARDOUS POLYMERIZATION:** Can be caused by elevated temperatures.**STABILITY:** Stable.**CONDITIONS TO AVOID:** Moisture and high temperatures.**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon oxides, nitrogen oxides, isocyanates and trace amounts of hydrogen cyanide.**INCOMPATIBLE MATERIALS:** Water, amines, oxidizers, alcohols and strong bases.**11. TOXICOLOGICAL INFORMATION****ACUTE**

Chemical Name	ORAL LD ₅₀ (rat)	DERMAL LD ₅₀ (rabbit)	INHALATION LC ₅₀ (rat)
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	> 3200 mg/kg	> 18900 mg/kg	> 5.3 mg/L/6h
Toluene diisocyanate mixed isomers	5110 mg/kg	> 9400 mg/kg	0.48 mg/L/1h

CARCINOGENICITY**IARC:** Toluene diisocyanate: 2B - Possibly carcinogenic to humans.**NTP:** Toluene diisocyanate is reasonably anticipated to be a human carcinogen**OSHA:** Not regulated as a carcinogen.**SENSITIZATION:** This material is a skin and respiratory sensitizer.**12. ECOLOGICAL INFORMATION****ECOTOXICOLOGICAL INFORMATION:** Toluene diisocyanate: LC₅₀ (Oncorhynchus) 133 mg/L/96h; EC₅₀ (Daphnia magna) 12.5 mg/L/48h**13. DISPOSAL CONSIDERATIONS****DISPOSAL METHOD:** Dispose in accordance with local, state, provincial or national regulations.**EMPTY CONTAINER:** Decontaminate and pass to an approved drum recycler or destroy.**RCRA/EPA WASTE INFORMATION:** If discarded in its purchased form, this material is not a RCRA hazardous waste.**GENERAL COMMENTS:** The generation of waste should be avoided or minimized whenever possible. Chemical waste, even small quantities, should never be poured into drains, sewers or waterways.**14. TRANSPORT INFORMATION****DOT (DEPARTMENT OF TRANSPORTATION)****PROPER SHIPPING NAME:** Not regulated when shipped below RQ.

AIR (ICAO/IATA)**SHIPPING NAME:** Not regulated when shipped below RQ.**VESSEL (IMO/IMDG)****SHIPPING NAME:** Not regulated when shipped below RQ.**15. REGULATORY INFORMATION****UNITED STATES****SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)****311/312 HAZARD CATEGORIES:** Acute, Chronic, Reactive.**EPCRA SECTION 313 SUPPLIER NOTIFICATION**

Chemical Name	Wt.%	CAS
Toluene diisocyanate mixed isomers	≤ 5	26471-62-5

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

Chemical Name	Wt.%	CERCLA RQ
Toluene diisocyanate mixed isomers	≤ 5	100 lbs.

TSCA (TOXIC SUBSTANCE CONTROL ACT)**TSCA REGULATORY:** All components are in TSCA inventory.**RCRA STATUS:** If discarded in its purchased form, this material is not a RCRA hazardous waste.**NATIONAL RESPONSE CENTER:** Any spill or release to the environment above the RQ must be reported to the National Response Center (800-424-8802).**16. OTHER INFORMATION****PREPARED BY:** L. Priest **Date Revised:** 11/17/2015**COMMENTS:**

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service
EC ₅₀	Median effective concentration
EINECS	European Inventory of Existing Commercial Chemical Substances
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
LC ₅₀	Lethal concentration to 50% of exposed laboratory animals
LD ₅₀	Lethal dose to 50% of exposed laboratory animals
TWA	Time-weighted average
TLV	Threshold limit value
NIOSH	US National Institute of Occupational Safety and Health
NE	Not established
NTP	US National Toxicology Program
OEL	Occupational exposure limit
OSHA	US Occupational Safety Health Administration
PEL	Permissible exposure limit
RQ	Reportable quantity
STEL	Short term exposure limit

MANUFACTURER DISCLAIMER: The information in this SDS was obtained from sources that we believe are reliable. The information is provided without warranty, implied or expressed, concerning accuracy. The manufacturer assumes no legal responsibility for use or reliance on this information. This SDS is provided solely for the purpose of conveying health, safety and environmental information. This SDS is not a specification data sheet. Some of the information and conclusions may be derived from sources other than test data on the material itself.



SAFETY DATA SHEET

Date Prepared : 09/17/2015
SDS No : UMR 411 Pol

IsoMold UMR 411 Pol

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: IsoMold UMR 411 Pol

MANUFACTURER

Isotec® International, Inc.
201 Longview Street
Canton, GA 30114
Customer Service: 800-234-6300

24 HR. EMERGENCY TELEPHONE NUMBERS

Poison Control Center (Medical) : (877) 800-5553
ChemTel (USA) : (800) 255-3924
ChemTel (International) : (813) 248-0585

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATIONS

Health:

Skin Irritation, Category 2
Eye Irritation, Category 2B
Target Organ Toxicity (Repeated exposure), Category 2

GHS LABEL



Exclamation
mark



Health
hazard

SIGNAL WORD: DANGER

HAZARD STATEMENTS

H315: Causes skin irritation.
H320: Causes eye irritation.
H373: May cause damage to pancreas through prolonged or repeated exposure.

PRECAUTIONARY STATEMENT(S)

Prevention:

P260: Do not breathe mist or spray.
P264: Wash hands thoroughly after handling.
P280: Wear protective gloves, protective clothing, eye protection and face protection.

Response:

P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical attention.
P314: Get medical advice if you feel unwell.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS
Polyether Polyol	65 - 75	9082-00-2
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	10 - 15	6846-50-0
Distillates, petroleum, hydrotreated heavy naphthenic	8 - 12	64742-52-5
Diethylmethylbenzenediamine	4 - 6	68479-98-1
1-hexadecanamine, N, N-dimethyl-	2 - 3	112-69-6

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water. Remove contact lenses, if present. Seek medical attention if irritation persists.

SKIN: Wash with soap and water. Seek medical attention if irritation persists. Discard contaminated clothing and shoes.

INGESTION: Give one or two glasses of water to drink. Never give anything by mouth to an unconscious person. Obtain immediate medical attention. Do not induce vomiting unless instructed to do so by poison center or physician.

INHALATION: Move person to fresh air. If symptoms of respiratory distress develop, seek medical attention.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Water fog, water spray, foam, dry chemical or carbon dioxide.

HAZARDOUS COMBUSTION PRODUCTS: Carbon oxides.

FIRE FIGHTING EQUIPMENT: Exposed firefighters must wear NIOSH-approved positive pressure self-contained breathing apparatus with full-face mask and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Isolate the area and prevent entry of unnecessary and unprotected personnel. Do not walk through or otherwise scatter spilled product. Absorb with dry chemical absorbent, earth, sand or any other inert material. Place in a chemical waste container.

LARGE SPILL: Isolate the area and prevent entry of unnecessary and unprotected personnel. Do not walk through or otherwise scatter spilled product. May be a slipping hazard. Create a dike or trench to contain product. Prevent entry into waterways, sewers, basements or confined areas. Absorb with dry chemical absorbent, earth, sand or any other inert material. Place in a chemical waste container.

SPECIAL PROTECTIVE EQUIPMENT: Wear protective equipment listed in Section 8.

7. HANDLING AND STORAGE

HANDLING: Do not get in eyes, on skin or on clothing. Wash hands before eating, drinking or smoking. Keep container closed when not in use. Do not reseal if contaminated. Keep away from heat and flame.

STORAGE: Store in tightly closed containers in a cool, dry and well-ventilated area away from heat or sources of ignition. Keep out of direct sunlight.

STORAGE TEMPERATURE: 4.4°C (40°F) Minimum to 37.8°C (100°F) Maximum

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)						
			EXPOSURE LIMITS			
			OSHA PEL		ACGIH TLV	
Chemical Name			ppm	mg/m ³	ppm	mg/m ³
Distillates, petroleum, hydrotreated heavy naphthenic			TWA	5 oil mist		5 oil mist

ENGINEERING CONTROLS: Local exhaust ventilation used in combination with general ventilation as necessary to control air contaminants.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear a face shield and chemical safety glasses or goggles.

SKIN: Wear impervious gloves. Cover exposed skin.

RESPIRATORY: For airborne exposure above the permissible exposure limit(s), wear a NIOSH approved air-purifying respirator equipped with organic vapor cartridges. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator.

WORK HYGIENIC PRACTICES: Avoid eating, drinking or smoking while using this material. Wash hands thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR: Amine-like.

APPEARANCE: Dark liquid.

FLASH POINT AND METHOD: > 93.3°C (200°F)

AUTOIGNITION TEMPERATURE: Not established.

VAPOR DENSITY: Heavier than air.

BOILING POINT: Not established.

FREEZING POINT: Not established.

SOLUBILITY IN WATER: Slight.

SPECIFIC GRAVITY: 0.99 (water = 1) at 23.3°C (74°F)

VISCOSITY #1: 500 Centipoise at 23.3°C (74°F)

10. STABILITY AND REACTIVITY

HAZARDOUS POLYMERIZATION: Will not occur.

STABILITY: Stable.

CONDITIONS TO AVOID: Moisture and high temperatures.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon oxides.

INCOMPATIBLE MATERIALS: Strong oxidizers.

11. TOXICOLOGICAL INFORMATION

ACUTE

Chemical Name	ORAL LD ₅₀ (rat)	DERMAL LD ₅₀ (rabbit)	INHALATION LC ₅₀ (rat)
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	> 3200 mg/kg	> 18900 mg/kg	> 5.3 mg/L/6h
Diethylmethylbenzenediamine	738 mg/kg	> 2000 mg/kg	
1-hexadecanamine, N, N-dimethyl-	> 3000 mg/kg (mouse)		

CARCINOGENICITY

IARC: Not regulated as a carcinogen.

NTP: Not regulated as a carcinogen.

OSHA: Not regulated as a carcinogen.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Diethylmethylbenzenediamine: EC₅₀ (Daphnia magna) 0.5 mg/L/48h

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose in accordance with local, state, provincial or national regulations.

EMPTY CONTAINER: Decontaminate and pass to an approved drum recycler or destroy.

RCRA/EPA WASTE INFORMATION: If discarded in its purchased form, this material is not a RCRA hazardous waste.

GENERAL COMMENTS: The generation of waste should be avoided or minimized whenever possible. Chemical waste, even small quantities, should never be poured into drains, sewers or waterways.

14. TRANSPORT INFORMATION**DOT (DEPARTMENT OF TRANSPORTATION)**

PROPER SHIPPING NAME: Not regulated.

AIR (ICAO/IATA)

SHIPPING NAME: Not regulated.

VESSEL (IMO/IMDG)

SHIPPING NAME: Not regulated.

15. REGULATORY INFORMATION**UNITED STATES****SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**

311/312 HAZARD CATEGORIES: Acute, Chronic.

313 REPORTABLE INGREDIENTS: None.

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: None.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: All components are in TSCA inventory.

RCRA STATUS: If discarded in its purchased form, this material is not a RCRA hazardous waste.

16. OTHER INFORMATION

PREPARED BY: L. Priest **Date Prepared:** 09/17/2015

COMMENTS:

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service
EC ₅₀	Median effective concentration
EINECS	European Inventory of Existing Commercial Chemical Substances
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
LC ₅₀	Lethal concentration to 50% of exposed laboratory animals
LD ₅₀	Lethal dose to 50% of exposed laboratory animals
TWA	Time-weighted average
TLV	Threshold limit value
NIOSH	US National Institute of Occupational Safety and Health
NE	Not established
NTP	US National Toxicology Program
OEL	Occupational exposure limit
OSHA	US Occupational Safety Health Administration
PEL	Permissible exposure limit
RQ	Reportable quantity
STEL	Short term exposure limit

MANUFACTURER DISCLAIMER: The information in this SDS was obtained from sources that we believe are reliable. The information is provided without warranty, implied or expressed, concerning accuracy. The manufacturer assumes no legal responsibility for use or reliance on this information. This SDS is provided solely for the purpose of conveying health, safety and environmental information. This SDS is not a specification data sheet. Some of the information and conclusions may be derived from sources other than test data on the material itself.