

MATERIAL SAFETY DATA SHEET**SECTION I**

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EMERGENCY TELEPHONE #: 0414 746 211
CHEMICAL NAME: POLYMERIC : 4,4 - DIPHENYLMETHANE DIISOCYANATE
TRADE NAME: **Replicast 101**
CHEMICAL FAMILY: POLYMERIC ISOCYANATE
THIS PRODUCT MEETS THE REQUIREMENTS OF SECTION 313 OF TITLE III OF (SARA)
HMIS RATING: HEALTH- 1, FLAMMABILITY- 1, REACTIVITY- 1, PERSONAL HEALTH- C
DOT(HM-181) Domestic Surface) : NOT REGULATED UNDER 5,000#

SECTION II HAZARDOUS INGREDIENTS

COMPONENTS:	COMPONENT %
DIPHENYLMATHANE DIISOCYANATE CAS 101-68-8	30-50
Modified MDI CAS 25686-28-6	30-50
Diisodecyl Phthalate CAS 26761-40-0	10-40

SECTION III PHYSICAL DATA

BOILING POINT (F): @5MM HG 350-410 F; DECOMPOSES >646F
SPECIFIC GRAVITY: 1.20
VAPOR PRESSURE (mm Hg): @25C 3MM
PERCENT VOLATILE BY VOLUME (%) 40
VAPOR DENSITY (AIR=1): APPROX 8.6
SOLUBILITY IN WATER: Reacts
VOC % : 0
APPEARANCE AND ODOR: NO ODOR; VISCOUS LIQUID WITH AMBER TO CLEAR PEACH COLOR.





SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): 262F ASTM D56 TAG CLOSED CUP

FLAMMABLE LIMITS: ETHANOL LeI - N/A, UeI - N/A

EXTINGUISHING MEDIA: WATER FOG, ALCOHOL FOAM, FOAM CO2 DRY CHEMICAL

SPECIAL FIRE FIGHTING PROCEDURES: USE APPROVED RESPIRATOR & PROTECTIVE CLOTHING.
FLAMMABLE MATERIAL DUE TO SOLVENTS.

UNUSUAL FIRE AND EXPLOSION HAZARDS: SOLVENT VAPORS FORM EXPLOSIVE MIXTURES WITH AIR.

SECTION V HEALTH HAZARD DATA

ANIMAL TOXICITY:

ORAL, LD 50 (INGESTION).....:N.E.

DERMAL, LD (SKIN CONTACT).....:N.E.

INHALATION, LC 50 (4 HOUR).....:N.E.

AQUATIC, LC 50 (24 HOUR).....:N.E.

EYES.....:N.E.

SKIN.....:N.E.

OTHER.....:NONE

NO CONCLUSIVE EVIDENCE HAS BEEN DEVELOPED TO INDICATE THAT MDI IS A CARCINOGENIC, TERATOGENIC, OR THAT IT CAUSES REPRODUCTIVE DEFECTS IN ANIMALS AND HUMANS; HOWEVER, MDI HAS BEEN REPORTED BY NIOSH TO BE MUTAGENIC TO SALMONELLA TYPHIMURIUM BACTERIA. THERE IS NOT FULL AGREEMENT IN THE SCIENTIFIC COMMUNITY AS TO THE SAFETY OF HUMAN CANCER RISKS.

HUMAN EFFECTS OF OVEREXPOSURE:

INHALATION: MAY CAUSE BREATHLESSNESS, SEVERE COUGHING, CHEST DISCOMFORT, IRRITATION OF MUCOUS MEMBRANE AND REDUCED PULMONARY FUNCTION (REACTION MAY BE DELAYED 4-8 HOURS). SOME INDIVIDUALS MAY DEVELOP SENSITIVITY LEADING TO ASTHMA-LIKE SYMPTOMS ON SUBSEQUENT EXPOSURES BELOW THE TLV. THIS PRODUCT CONTAINS PETROLEUM SOLVENTS. INHALATION OF THESE VAPORS MAY ALSO CAUSE HEADACHES, DIZZINESS, AND HAVE OTHER EFFECTS ON THE CENTRAL NERVOUS SYSTEM.

SKIN: MINOR IRRITATION MAY RESULT FROM ISOCYANATE REACTION WITH SKIN MOISTURE AND PROTEIN. TEMPORARY STAINS OF THE SKIN MAY RESULT. ALLERGIC SENSITIVITY MAY OCCUR FOR SOME INDIVIDUALS. REPEATED CONTACT WITH THE SOLVENT IN THIS PRODUCT MAY LEAD TO DERMATITIS.

EYES: MAY LEAD TO IRRITATION WITH TEARING. MDI MAY REACT WITH MOISTURE IN THE EYES.



INGESTION: IRRITATION AND POSSIBLE CORROSIVE ACTION IN THE MOUTH, THROAT, AND STOMACH TISSUES. VOMITING MAY OCCUR.

THRESHOLD LIMIT VALUE (ACGIH): 0.02 PPM (0.2 MG/M³) FOR THE MDI 100 PPM (563 MG/M³) PER 8 HOUR WORK DAY; RECOMMENDED BY EXXON PERMISSIBLE EXPOSURE LIMIT (OSHA): SAME.

EMERGENCY AND FIRST AID PROCEDURES:

EYE CONTACT: FLUSH WITH CLEAN, WARM WATER AT LOW PRESSURE FOR AS LEAST 15 MINUTES, OCCASIONALLY LIFTING THE EYELIDS. CONSULT A PHYSICIAN IMMEDIATELY.

SKIN CONTACT: WASH EXPOSED SKIN WITH WARM, SOAPY WATER THOROUGHLY, ALCOHOL MAY BE HELPFUL. CONSULT A PHYSICIAN IF SWELLING OR REDNESS APPEARS.

INHALATION: MOVE PERSONNEL OUT OF EXPOSURE AREA IMMEDIATELY. IF BREATHING IS LABORED OR DIFFICULT, OXYGEN SHOULD BE ADMINISTERED BY TRAINED PERSONNEL. IF BREATHING HAS STOPPED, APPLY ARTIFICIAL RESPIRATION. CONSULT A PHYSICIAN IMMEDIATELY. RESPIRATORY RESPONSE MAY BE DELAYED 4-8 HOURS AFTER EXPOSURE.

INGESTION: DO NOT INDUCE VOMITING. CONSULT A PHYSICIAN IMMEDIATELY. ASPIRATION OF THE PETROLEUM SOLVENT CAN CAUSE SEVERE PULMONARY DAMAGE OR DEATH.

NOTE TO PHYSICIAN: TREAT SYMPTOMATICALLY: BRONCHODIALATORS; OXYGEN.

SECTION VI REACTIVITY DATA

STABILITY: STABLE

CONDITIONS TO AVOID: AVOID TEMPERATURES GREATER THAN 100 F

INCOMPATIBILITY (MATERIALS TO AVOID): WATER, STRONG BASES, ALCOHOLS, METAL COMPOUNDS AND SURFACE ACTIVE AGENTS. WILL CAUSE SOME CORROSION TO COPPER ALLOYS AND ALUMINUM. STRONG OXIDENTS AND IGNITION SOURCES DUE TO PETROLEUM SOLVENT.

HAZARDOUS DECOMPOSITION PRODUCTS: @ >400F: CARBON MONOXIDE, OXIDES OR NITROGEN AND TRACES OF HYDROGEN CYANIDE AS WELL AS CO AND ALDEHYDES.

HAZARDOUS POLYMERIZATION: MAY OCCUR; CONTAMINATION BY MOISTURE OR OTHER MATERIALS, WHICH REACT WITH ISOCYANATES SHOULD BE AVOIDED; CONTAMINATED CONTAINERS SHOULD BE LEFT VENTED AND MOVED TO A SAFE AREA FOR NEUTRALIZATION AND PROPER DISPOSAL.



SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: ONLY PROPERLY PROTECTED PERSONNEL SHOULD REMAIN IN THE AREA. CONTAIN THE SPILL, COVER LIQUID WITH ABSORBENT MATERIAL (SAW DUST, OIL ABSORBENT, ETC.) PLACE IN OPEN TOP CONTAINERS AND TREAT WITH DECONTAMINATION SOLUTION (90% WATER, 6% AMMONIA, 4% DETERGENT). REMOVE CONTAINERS TO A SAFE AREA AND LET STAND 24-48 HOURS. VENTILATE AREA TO REMOVE VAPORS. ALL SOURCES OF IGNITION SHOULD BE REMOVED.

SECTION VIII SPECIAL PROTECTION INFORMATION

EYE PROTECTION: LIQUID CHEMICAL GOGGLES OR FULL FACE SHIELD. NO CONTACT LENSES SHOULD BE WORN.

SKIN PROTECTION: CHEMICAL RESISTANT GLOVES SUCH AS NATURAL RUBBER OR POLYVINYL ALCOHOL. COVER AS MUCH OF THE EXPOSED SKIN AS POSSIBLE WITH APPROPRIATE CLOTHING. IF SKIN CREAMS ARE USED, KEEP AREA COVERED BY CREAM TO MINIMUM.

RESPIRATORY PROTECTION: FOR SHORT TERM EXPOSURES, USE AN ORGANIC FILTER RESPIRATOR MASK OF A TYPE APPROVED BY NIOSH OR U.S. MINING ENFORCEMENT AND SAFETY ADMINISTRATION. SUPPLIED AIR OR SELF-CONTAINED BREATHING APPARATUS IS PREFERRED. MDI HAS A LOW VAPOR PRESSURE AND IS MANDATORY. NO SMOKING OR OPEN LIGHTS ARE PERMITTED.

VENTILATION: GENERAL MECHANICAL OR LOCAL EXHAUST TO MAINTAIN LEVELS BELOW TLV.

OTHER: SAFETY SHOWERS AND EYE WASH STATIONS SHOULD BE ACCESSIBLE IN ALL WORK AREAS. ALL EMPLOYEES SHOULD BE PROPERLY TRAINED.

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: KEEP CONTAINER CLOSED. STORE IN A COOL PLACE.

OTHER PRECAUTIONS: KEEP AWAY FROM HEAT, SPARKS AND FLAME. USE ONLY WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING.



MATERIAL SAFETY DATA SHEET
" B " COMPONENT

SECTION I

CHEMICAL NAME: POLYMERIC ALCOHOL

TRADE NAME: **Replicast 101**

CHEMICAL FAMILY: POLYETHER POLYOL

FORMULA: POLYOL, URETHANE RESIN

SARA 313 - NOT LISTED

HMIS RATING : HEALTH- 1, FLAMMABILITY- 1, RACTIVITY- 0, PROTECTIVE EQUIPMENT- D

SECTION II HAZARDOUS INGREDIENTS

COMPONENTS: (UNITS) %

HYDROXYL TERMINATED POLY

(OXYALKYLENE) POLYETHER-CAS 9082-00-2 50

AMINE BEARING HYDROXYL TERMINATED POLY (OXYALKYLENE): 50

POLYETHER-CAS 25214-63-5

SECTION III PHYSICAL DATA

BOILING POINT (F): DECOMPOSES SPECIFIC GRAVITY: 1.02

VAPOR PRESSURE (mm Hg.)@ N.E.

PERCENT VOLATILE BY VOLUME: N/A

SOLUBILITY IN WATER: SLIGHTLY SOLUBLE

VAPOR DENSITY (AIR=): N.E. EVAPORATION RATE: N/A

APPEARANCE & ODOR: VISCOUS LIQUID, AMBER TO CLEAR IN COLOR, SLIGHT PUNGENT ODOR.

SILWHITE B- WHITE IN COLOR

SECTION IV

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): 262F ASTM D56 TAG CLOSED CUP

FLAMMABLE LIMITS: NOT MEASURED

EXTINGUISHING MEDIA: DRY CHEMICAL SUCH AS MONOAMMONIUM PHOSPHATE, POTASSIUM SULFATE, POTASSIUM CHLORIDE; CARBON DIOXIDE, HIGH EXPANSION (PROTEINIC) CHEMICAL FOAM, WATER SPRAY FOR LARGE FIRES.

SPECIAL FIRE FIGHTING PROCEDURES: NOT REQUIRED

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE

SECTION V HEALTH HAZARD DATA

ANIMAL TOXICITY:



ORAL, LD 50 (INGESTION).....N.E.
DERMAL, LD 50 (SKIN CONTACT).....N.E.
INHALATION, LC 50 (4 HOURS).....N.E.
AQUATIC, LC 50 (24 HOURS).....N.E.
EYES.....N.E.
SKIN.....N.E.

EMERGENCY AND FIRST AID PROCEDURES:

THRESHOLD LIMIT VALUE: NO TLV HAS BEEN REQUIRED- N/A
EFFECTS OF OVEREXPOSURE: N/A
EYE CONTACT: MAY CAUSE SLIGHT IRRITATION; FLUSH WITH WATER 15 MINUTES
INGESTION: INDUCE VOMITING, NO EVIDENCE OF ADVERSE EFFECTS TO DATE.
INHALATION: REMOVE TO FRESH AIR, NO ADVERSE EFFECT TO DATE
SKIN: WASH WITH WARM WATER AND SOAP, REMOVE CLOTHING WASH BEFORE WEARING AGAIN.

SECTION VI REACTIVITY DATA

STABILITY: STABLE
CONDITIONS TO AVOID: N/A
INCOMPATIBILITY: (MATERIALS TO AVOID) CONTACT WITH ISOCYANATES OR SUBSTANCES WITH REACTIVE HYDROXYL GROUPS
HAZARDOUS DECOMPOSITION PRODUCTS: ALIPHATIC FRAMENTS, CO, NH3, CO2
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

SECTION VII SPECIAL PRECAUTIONS & STORAGE DATA

STORAGE TEMPERATURE (MIN./MAX): 64F (18C) TO 86F (30C)
STORAGE SHELF LIFE: 6 MONTHS
SPECIAL SENSITIVITY (HEAT, LIGHT, MOISTURE): MATERIAL HYGROSCOPIC, KEEP CONTAINER TIGHTLY SEALED DO NOT EXPOSE TO HIGH TEMPERATURES FOR ANY LENGTH OF TIME AS ALDEHYDES MAY BE FORMED.
PRECAUTIONS IN HANDLING AND STORAGE... STORE IN TIGHTLY SEALED CONTAINERS TO PREVENT MOISTURE CONTAMINATION

SECTION VIII SHIPPING DATA

TECHNICAL SHIPPING NAME.....: POLYMERIC POLYOL
DOT HAZARD CLASSIFICATION...: NON-REGULATED
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: CONTAIN THE SPILL OR LEAK, SCRAPE UP WITH CARDBOARD OR A BAG AND PLACE IN A CONTAINER.
WASTE DISPOSAL METHOD: DISPOSED WITH LOCAL REGULATIONS.

SECTION IX SPECIAL PROTECTION INFORMATION



PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: KEEP CONTAINER CLOSED. STORE IN A COOL PLACE AND KEEP AWAY FROM HEAT OR FLAME. DON'T LAY CONTAINER ON ITS SIDE. OTHER PRECAUTION: AVOID PROLONGED CONTACT WITH EYES AND REPEATED CONTACT WITH SKIN.

