
SECTION 1 - IDENTIFICATION

PRODUCT IDENTIFIER..... RayCrete-B
CHEMICAL FAMILY..... Formulated Polyurethane Resin
COMPANY NAME..... Valiant Technologies, Inc., RayCrete Division
6005 Hughes St.
San Diego, CA 92115-6521

SECTION 2 - Hazardous Ingredients

CHEMICAL NAME	PEL (OSHA)	TWA-(ACGIH)	CAS NUMBER
4,4' Methylene bis (phenylisocyanate)	0.02ppm	0.005ppm	101-68-8
Polymethylene polyphenyl isocyanate	None Established	None Established	9016-87-9
may contain silica, quartz, crystalline < 0.002%	0.1 mg/M3	0.1 mg/M3	14808-60-7

As defined by OSHA Hazard Communication Standard 29CFR1910.1200.

Crystalline silica quartz dust has been identified as a carcinogen or probable carcinogen by IARC.

SECTION 3 - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT (F) (C)	: (@ 5mg Hg) 392 °F	MELTING POINT (F)(C)	: ND
VAPOR PRESSURE (MM HG)	: (@25 °C)<0.00001	VOLATILE BY VOLUME	: Nil
VAPOR DENSITY (AIR=1)	: Approx. 8.6	EVAP. RATE (BUTYL ACETATE=1)	: NA
SOLUBILITY IN WATER	: Reacts with water	SPECIFIC GRAVITY (WATER=1)	: 1.63
APPEARANCE & ODOR	: Greenish paste.		

SECTION 4 - Fire & Explosion Data

FLASH POINT (TEST METHOD) : 390 °F (COC) FLAMMABLE LIMITS: LEL:NA UEL: NA
EXTINGUISHING MEDIA : Foam, dry chemical, carbon dioxide, water spray.
SPECIAL FIRE FIGHTING PROCEDURES : Fire fighters should wear self-contained breathing apparatus.
UNUSUAL FIRE & EXPLOSION HAZARDS : Avoid water contamination in closed containers or confined spaces as carbon dioxide and exothermic heat are evolved. Reacts with hydrofluoric acid to form toxic silicon tetrafluoride gas.

SECTION 5 - Reactivity Data

STABILITY : Stable
CONDITIONS TO AVOID : None.

- INCOMPATIBILITY : Water, acids, strong bases, alcohols, metal compounds, and surface active agents; water reacts to form carbon dioxide, exothermic heat and insoluble urea; the combined effect of carbon dioxide and heat could build enough pressure to rupture a closed container; the water reaction is slow at temperatures below 120 °F (49 °C), but accelerated at higher temperatures and in the presence of strong bases and certain metal compounds.
- HAZARDOUS DECOMPOSITION PRODUCTS : Isocyanate vapor, oxides of carbon and nitrogen, trace HCN.
Reacts with hydrofluoric acid to form toxic silicon tetrafluoride gas.
- HAZARDOUS POLYMERIZATION : May occur.
- CONDITIONS TO AVOID : Strong bases, metal compounds, water over 120 °F (49 °C), and temperatures above 347 °F (175 °C).

SECTION 6 - HEALTH HAZARD DATA

Routes Of Entry : Inhalation and skin contact.

HEALTH HAZARDS/SIGNS OF OVEREXPOSURE

- EYE CONTACT : May cause irritation.
- SKIN CONTACT : May cause irritation or possible allergic sensitivity.
- INHALATION : LC 50 values of this mixture are estimated to be 6016 ml/m3.
: May cause respiratory sensitization in susceptible individuals; at room temperature, vapors are minimal due to low vapor pressure; if heated or sprayed as an aerosol, excessive concentrations are attainable that could be hazardous on single exposure; excessive exposure may cause irritation of the eyes, upper respiratory tract and lungs; effects may be delayed; decreased ventilatory capacity has been associated with exposure to similar isocyanates; it is possible that exposure to MDI may cause similar impairment of lung function.
- MOUTH AND STOMACH TISSUES : May have corrosive effects on the linings of the mouth and stomach; symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Preexisting respiratory disorders.

EMERGENCY AND FIRST AID PROCEDURES

- EYE CONTACT : Flush with water for 15 minutes; seek medical attention.
- SKIN CONTACT : Remove with soap and water; if redness or rash develops seek medical attention..
- INHALATION : Remove from exposure immediately; if breathing is impaired oxygen should be administered by trained personnel; seek medical attention.
- INGESTION : Do not induce vomiting unless instructed by a physician. Seek medical attention.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING & USE

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:

Dike and contain; cover liquid with absorbent material; only properly protected personnel should remain in the area; place in open top container; remove to well ventilated area and treat with dilute ammonia solution; leave vented 48 hours.

WASTE DISPOSAL METHOD:

This material contains a hazardous constituent as identified in RCRA Title 40 CFR261 Appendix VIII and must be disposed of in accordance with local, state, and federal regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Harmful if inhaled; may cause eye and skin irritation; vapors, which are significant if heated or sprayed, can cause allergic respiratory reaction; avoid contact with eyes, skin and clothing; protect from moisture contamination; reseal partial containers; use good general housekeeping procedures.

SECTION 8 - Control Measures

- RESPIRATORY PROTECTION : In areas where the PEL is exceeded use self contained breathing apparatus.
VENTILATION
LOCAL EXHAUST : Recommended to control source of vapors.
MECHANICAL (GENERAL) : Recommended
PROTECTIVE GLOVES : Rubber or plastic.
EYE PROTECTION : Safety goggles.
OTHER PROTECTIVE CLOTHING : Clean long leg, long sleeve clothing.
WORK/HYGIENE PRACTICES : Wash thoroughly before eating, smoking or applying make-up.

SECTION 9 - REGULATORY INFORMATION

FEDERAL REGULATIONS

DOT Hazardous Materials Transportation 49CFR 172.101 or Optional Table 172.102

- HAZARD CLASS : NA
UN NUMBER : NA
PROPER SHIPPING NAME : NA

RESOURCE CONSERVATION AND RECOVERY ACT (40CFR261):

This material contains a hazardous constituent as identified in RCRA Title 40 CFR 261 Appendix VIII and must be disposed of in accordance with local, state and federal regulations.

CERCLA REQUIRES NOTIFICATION OF THE NATIONAL RESPONSE CENTER OF RELEASE OF QUANTITIES OF HAZARDOUS SUBSTANCES EQUAL TO OR GREATER THAN THE REPORTABLE QUANTITIES (RQ'S) IN 40CFR302.4:

COMPONENTS THAT REQUIRE REPORTING	RQ	% OF REPORTABLE COMPONENT
None		

SARA TITLE III REQUIRES EMERGENCY PLANNING BASED ON THRESHOLD PLANNING QUANTITIES (TPQ'S) AND RELEASE REPORTING BASED ON REPORTABLE QUANTITIES (RQ'S) IN 40CFR355 (USED FOR SARA 302, 304, 311 AND 312):

COMPONENTS THAT REQUIRE REPORTING	TPQ	RQ	% OF REPORTABLE COMPONENT
None			

RayCrete Part B MSDS for 2003
Material Safety Data Sheet (MSDS)

RayCrete Part B

Page 4

SARA TITLE III SECTION 313 SUPPLIER NOTIFICATION:

THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT OF 1986 AND OF 40CFR372. THIS INFORMATION MUST BE INCLUDED IN ALL MSDS'S THAT ARE COPIED AND DISTRIBUTED FOR THIS MATERIAL:

CAS NUMBER	CHEMICAL NAME	% BY WEIGHT
101-68-8	4,4' Methylene bis (phenylisocyanate)	8.8 max
9016-87-9	Polymethylene polyphenyl isocyanate	12.3 max

TSCA INVENTORY STATUS (40CFR710) : All components of this formulation are listed on the TSCA inventory.

STATE REGULATIONS

CALIFORNIA PROPOSITION 65:

This material contains a chemical which the State of California has found to cause cancer.

FLORIDA, MASSACHUSETTS, MINNESOTA, PENNSYLVANIA AND WASHINGTON SUBSTANCE LIST:

Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in formulations above concentrations listed.

EXTRAORDINARILY HAZARDOUS SUBSTANCES (=>0.0001%):

CHEMICAL NAME	CAS NUMBER	% BY WEIGHT
None		

HAZARDOUS SUBSTANCES (=>1.0%):

CHEMICAL NAME	CAS NUMBER	% BY WEIGHT
4,4' Methylene bis (phenylisocyanate)	101-68-8	8.8 max

Date Prepared : 02/24/2003

Prepared By : Eric R. Nelson, Ph.D.

Title : Chief Technical Officer

Revision # : RC-01-B-0006

Abbreviations:

NE - Not Established

ND - Not Determined

NA - Not Applicable