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## **MSDS, Part A – Resin**

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MATERIAL SAFETY DATA SHEET (Barrier-1 High Performance Topical System 1503, Part A, Resin)

**EMERGENCY CONTACT: (877) 224-5850**

### **SECTION I. IDENTIFICATION**

**PRODUCT NAME:** *Barrier-1 High Performance Topical System 1503, Part A, Resin*

**CHEMICAL FAMILY:** EPOXIDE

**PRODUCT TYPE:** MODIFIED LIQUID EPOXY RESIN

**IMPORTANT:** THIS MATERIAL WILL NOT BE SOLD FOR USE IN PRODUCTS FOR WHICH PROLONGED CONTACT WITH MUCOUS MEMBRANES, ABRADED SKIN, OR IMPLANTATION WITHIN THE HUMAN BODY IS SPECIFICALLY INTENDED. BECAUSE OF THE WIDE RANGE OF SUCH POTENTIAL USES, WOLVERINE COATINGS CORPORATION IS NOT ABLE TO RECOMMEND THIS MATERIAL AS SAFE AND EFFECTIVE FOR SUCH USES AND ASSUMES NO LIABILITY FOR ANY SUCH USES.

**HAZARD STATEMENT:** THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200. THIS PRODUCT IS CONSIDERED TO BE A HAZARDOUS CHEMICAL UNDER THAT STANDARD.

### **SECTION II. HAZARDOUS INGREDIENTS**

**SPECIFIC CHEMICAL NAME:** PHENOL 4,4'-(1-METHYLETHYLIDENE) BISPOLYMER WITH (CHLOROMETHYL) OXIRANE)  
OXIRANE, ((2- methylphenoxy)methyl)

**COMMON NAME:** BISPHENOL-A DIGLYCIDYL ETHER POLYMER, 2-ETHYL HEXYL GLYCIDYL ETHER CAS# - 2461-15-6

**EXPOSURE LIMITS:**

OSHA PEL,STEL - NOT ESTABLISHED

ACGIH TWA,STEL - NOT ESTABLISHED

CARCINOGENICITY: THIS CHEMICAL IS NOT CONSIDERED TO BE A CARCINOGENIC BY NTP., IARC, OR OSHA.

### **SECTION III. PHYSICAL DATA**

**APPEARANCE AND ODOR:** TRANSLUCENT LIQUID, MODERATE ODOR.

**DECOMPOSITION TEMP:** > 250 F  
**PERCENT VOLATILE:** > NIL  
**SOLUBILITY IN WATER:** NEGLIGIBLE  
**SPECIFIC GRAVITY:** > 1.0 @ 25°C (77°F)

## **SECTION IV. FIRE AND EXPLOSION DATA**

**FLASHPOINT:** > 200° F. (CLOSED CUP)  
**EXTINGUISHING MEDIA:** CARBON DIOXIDE, FOAM, DRY CHEMICAL, WATER SPRAY.  
**SPECIAL FIRE FIGHTING PROCEDURES:** USE SELF-CONTAINED BREATHING APPARATUS.  
**UNUSUAL FIRE AND EXPLOSION HAZARDS:** DECOMPOSITION AND COMBUSTION PRODUCTS MAY BE TOXIC.

## **SECTION V. REACTIVITY DATA**

**STABILITY:** STABLE  
**INCOMPATIBILITY (MATERIALS TO AVOID):** STRONG OXIDIZERS AND ACIDS.  
**HAZARDOUS DECOMPOSITION PRODUCTS:** CARBON MONOXIDE, CARBON DIOXIDE, ALDEHYDES.  
**HAZARDOUS POLYMERIZATION:** WILL NOT OCCUR.  
**CONDITIONS TO AVOID:** MASSES OF 1LB OR MORE PLUS AMINES WILL CAUSE AN IRREVERSIBLE POLYMERIZATION WITH CONSIDERABLE HEAT BUILD UP. STRONG ACIDS OR BASES AND ELEVATED TEMPERATURES.  
**INCOMPATIBILITY:** STRONG OXIDIZING AGENTS.

## **SECTION VI. HEALTH HAZARD DATA**

**PRIMARY ROUTES OF EXPOSURE:** DERMAL, INHALATION

**EMERGENCY OVERVIEW:** WARNING! CAN CAUSE SKIN AND EYE IRRITATION. CAN CAUSE ALLERGIC REACTIONS.

### **PRIMARY RATES OF EXPOSURE:**

**ORAL:** LD50 RATS > 2000 MG/KG  
**DERMAL:** LD50 RABBITS > 5000 MG/KG

### **IRRITATION:**

**SKIN:** (RABBIT) MODERATE  
**EYE:** (RABBIT) MODERATE

**SENSITIZATION:** MODERATE SENSITIZER

**INHALATION:** MAY CAUSE SENSITIZATION.

**EFFECTS OF OVEREXPOSURE:** SEVERE SKIN REACTIONS AND MODERATE TO SEVERE SKIN IRRITATION ALTHOUGH IT IS ONLY SLIGHTLY IRRITATING TO THE EYE. MAY HAVE EFFECTS ON MALE REPRODUCTION.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** ALLERGY, ECZEMA OR SKIN CONDITIONS.

### **EMERGENCY AND FIRST AID PROCEDURES:**

**EYES** - FOR EYE CONTACT, IMMEDIATELY FLUSH EYES FOR AT LEAST FIFTEEN MINUTES WITH RUNNING WATER. HOLD EYELIDS APART TO ENSURE RINSING OF THE ENTIRE EYE SURFACE AND LIDS WITH WATER. IF PHYSICIAN IS NOT AVAILABLE, FLUSH FOR AN ADDITIONAL FIFTEEN MINUTES. GET IMMEDIATE MEDICAL ATTENTION.

**SKIN** - FOR SKIN CONTACT, IMMEDIATELY REMOVE CONTAMINATED CLOTHING AND SHOES UNDER A SAFETY SHOWER. WASH AFFECTED AREAS THOROUGHLY WITH PLENTY OF WATER AND SOAP FOR AT LEAST FIFTEEN MINUTES. DISCARD OR DECONTAMINATE CLOTHING BEFORE RE-USE, AND DESTROY CONTAMINATED SHOES.

**INGESTION** - IF SWALLOWED, IMMEDIATELY GIVE AT LEAST 3-4 GLASSES OF WATER, BUT DO NOT INDUCE VOMITING. IF VOMITING OCCURS, GIVE FLUIDS AGAIN. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON. GET IMMEDIATE MEDICAL ATTENTION. HAVE PHYSICIAN DETERMINE WHETHER VOMITING OR STOMACH EVACUATION IS NECESSARY.

**INHALATION** - IF INHALED, REMOVE FROM AREA TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. GET IMMEDIATE MEDICAL ATTENTION IF BREATHING IS DIFFICULT, TRANSPORT TO MEDICAL CARE AND, IF AVAILABLE, GIVE SUPPLEMENTAL OXYGEN.

**OTHER** - PROMPTLY REMOVE WET CONTAMINATED NON-IMPERVIOUS CLOTHING. WASH BEFORE RE-USE.

## **SECTION VII. SPILL OR LEAK PROCEDURES**

**SPILL PROCEDURES:** AVOID ALL PERSONAL CONTACT. TAKE UP WITH ABSORBENT MATERIAL. SHOVEL INTO CLOSEABLE CONTAINER. FLUSH CONTAMINATED AREA WITH WATER. WEAR PROTECTIVE EQUIPMENT SPECIFIED BELOW. FLUSH CONTAMINATED AREA WITH WATER.

**WASTE DISPOSAL METHODS:** DISPOSE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

## **SECTION VIII. SPECIAL PROTECTION**

**VENTILATION:** GOOD GENERAL MECHANICAL VENTILATION AND LOCAL EXHAUST IS REQUIRED.

**PROTECTIVE GLOVES:** WEAR IMPERVIOUS GLOVES.

**EYE PROTECTION:** WEAR SPLASH-PROOF CHEMICAL RESISTANT GOGGLES.

**RESPIRATORY PROTECTION:** USE OSHA, NIOSH APPROVED RESPIRATOR SUITABLE FOR ORGANIC VAPORS.

**OTHER PROTECTIVE EQUIPMENT:** WEAR PROTECTIVE EQUIPMENT TO PREVENT EXPOSURE AND PERSONAL CONTACT.

## ***SECTION IX. SPECIAL PRECAUTIONS***

### **HMIS CODE:**

HEALTH: 2\* FIRE: 1

REACTIVITY: 0

**HANDLING, SHIPPING, AND STORING PRECAUTIONS:** WARNING! HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH THE SKIN. MAY CAUSE IRRITATION AND SENSITIZATION.

DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING. DO NOT BREATHE VAPOR, MIST, OR SPRAY. GOOD VENTILATION AND PERSONAL HYGIENE ARE ESSENTIAL. WASH THOROUGHLY AFTER HANDLING. KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE TO PREVENT MOISTURE ABSORPTION AND CONTAMINATION.

**FIRST AID:** IN CASE OF CONTACT WITH:

**EYES-** IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST FIFTEEN MINUTES. CALL A PHYSICIAN.

**SKIN-** FLUSH SKIN WITH PLENTY OF WATER.

**CLOTHING-** WASH CLOTHING BEFORE REUSE.

## **SECTION X. TOXICOLOGICAL INFORMATION**

**ACUTE ORAL EFFECTS (LD50):** (RAT) > 3500 MG/KG (COMPONENTS)

**ACUTE DERMAL TOXICITY (LD50):** (RAT) > 2100 MG/KG (COMPONENTS)

**INHALATION TOXICITY (LC50):** (RAT) 6.1 MG/L AIR FOR A 4-HOUR EXPOSURE (COMPONENTS)

**SENSITIZATION:** (HUMAN) SENSITIZER

**SKIN IRRITATION:** (RABBIT) MODERATE IRRITATION

**EYE IRRITATION:** (RABBIT) MILD IRRITATION

**TERATOGENICITY:** TEST RESULTS FOR DIGLYCIDYL ETHER OF BISPHENOL A:  
(RAT, RABBIT) NO ADVERSE EFFECTS ON EMBRYONIC OR FETAL DEVELOPMENT WERE OBSERVED

**MUTAGENICITY:** TEST RESULTS FOR DIGLYCIDYL ETHER OF BISPHENOL A:  
AMES TEST: BOTH POSITIVE AND NEGATIVE RESULTS  
HAMSTER BONE MARROW CYTOGENECTICS (IN VIVO): NEGATIVE  
MOUSE SPERMATOCYTES CYTOGENETICS (IN VIVO): NEGATIVE  
MICRONUCLEUS TEST (IN VIVO): NEGATIVE  
MOUSE DOMINANT LETHAL TEST: NEGATIVE  
ALKYLATION OF DNA: POSITIVE  
HUMAN MONONUCLEATED WBC (IN VIVO): NEGATIVE  
HOST MEDIATED ASSAY: NEGATIVE

**SUB-CHRONIC:** TEST RESULTS FOR O-CRESOL GLYCIDYL ETHER:  
IN A 21-DAY INHALATION STUDY WITH RATS EXPOSED TO CONCENTRATIONS OF 53, 152, AND 305 MG/M3 FOR 6-HR/DAY, 5-DAY/WK, THE HIGHEST EXPOSURE CONCENTRATION PROVED FATAL TO THE MAJORITY OF THE ANIMALS AND 5 OF 10 MALE SHOWED REDUCED SPERMATOGENESIS. ACUTE EFFECTS WERE ALSO SEEN IN THOSE ANIMALS WITH HEMORRHAGING IN THE MYOCARDIUM, LUNGS, LIVER, KIDNEY, ADRENAL, OVARIES AND THE BRAIN. AT THE MID DOSE, SIMILAR ACUTE EFFECTS WERE ALSO SEEN WITH 1 OF 10 MALES SHOWING SOME REDUCTIONS IN SPERMATOGENESIS. THE LOWEST CONCENTRATION USED (53 MG/M3) STILL HAD A SIGNIFICANT REDUCTION IN FOOD CONSUMPTION AND BODY WEIGHT GAIN COMPARED TO CONTROLS.

TEST RESULTS FOR DIGLYCIDYL ETHER OF BISPHENOL A:  
(RAT) NO OBSERVABLE EFFECT AT THE HIGHEST LEVEL STUDIED (1000 MG/KG/DAY FOR 28 DAYS).

**CHRONIC SKIN EXPOSURE EFFECTS:** TEST RESULTS FOR DIGLYCIDYL ETHER OF BISPHENOL A:

2-YEAR DERMAL STUDY IN MICE: NO TREATMENT RELATED EFFECTS

2-YEAR SKIN PAINTING STUDIES:

- A) C3HF/BD MICE: NO INCREASED TUMOR INCIDENCE
- B) C57BL/6BD MICE: SLIGHT INCREASE IN EPIDERMAL LOCALIZED CARINOMAS AT HIGH DOSE
- C) C3H MICE: NO TUMORS

MICE RECEIVING SKIN APPLICATIONS OF DIGLYCIDYL ETHER OF BISPHENOL A OR ESSENTIALLY IDENTICAL RESINS FOR TWO YEARS HAVE YIELDED VERY LIMITED EVIDENCE OF WEAK CARCINOGENICITY. THE PUBLISHED REPORT ON THIS STUDY CONCLUDES THAT THIS RESIN PRODUCT "IS NOT A SYSTEMIC CARCINOGEN WHEN APPLIED TO THE SKIN OF CF-1 MICE" AND THE TUMOR DATA "WAS OF NO BIOLOGICAL IMPORTANCE". BASED ON ALL AVAILABLE DATA, IARC (INTERNATIONAL AGENCY FOR RESEARCH ON CANCER) HAS CONCLUDED IN 1998 THAT DGEBA IS NOT CLASSIFIED AS A CARCINOGEN.

## **SECTION XI. ECOLOGICAL INFORMATION**

**BIODEGRADABILITY:** (MODIFIED STURM METHOD):~12%

**FISH TOXICITY:** RAINBOW TROUT (96 HR.): LC50 1.5 MG/L  
ZEBRA FISH (96 HR.): LC50 2.4 MG/L

**INVERTEBRATE TOXICITY:** DAPHNIA TOXICITY (24 HR.): EC50 3.6 MG/L

## **SECTION XII. REGULATORY INFORMATION**

**DOT CLASS:** NOT REGULATED

**DOT NUMBER:** N/A

**RCRA STATUS:** NOT A HAZARDOUS WASTE UNDER RCRA (40 CFR 261)

**CERCLA STATUS:** SARA/TITLE III - TOXIC CHEMICAL LIST: THIS PRODUCT DOES NOT CONTAIN A TOXIC CHEMICAL FOR ROUTINE ANNUAL "TOXIC CHEMICAL RELEASE REPORTING" UNDER SECTION 313 (40 CFR 372) CAS #. (BISPHENOL-A), LESS THAN 2%.

THIS INFORMATION MUST BE INCLUDED IN EVERY MSDS THAT IS COPIED AND DISTRIBUTED FOR THIS MATERIAL.

**TSCA INVENTORY STATUS:** CHEMICAL COMPONENTS LISTED ON TSCA INVENTORY.

**CANADIAN INVENTORY STATUS:** All components included on the Domestic Substances List (DSL)

**ISSUE DATE:** 07/2006

FOR FURTHER INFORMATION, PLEASE CONTACT PRODUCT SAFETY DIRECTOR.

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN IS, TO THE BEST OF OUR KNOWLEDGE AND BELIEF, ACCURATE. HOWEVER, SINCE THE CONDITIONS OF HANDLING AND USE ARE BEYOND OUR CONTROL, WE MAKE NO GUARANTEE OF RESULTS, AND ASSUME NO LIABILITY FOR DAMAGES INCURRED BY USE OF THIS MATERIAL. ALL CHEMICALS MAY PRESENT UNKNOWN HEALTH HAZARDS AND SHOULD BE USED WITH CAUTION. ALTHOUGH CERTAIN HAZARDS ARE DESCRIBED HEREIN, WE CANNOT GUARANTEE THAT THESE ARE THE ONLY HAZARDS THAT EXIST. FINAL DETERMINATION OF SUITABILITY OF THE CHEMICAL IS THE SOLE RESPONSIBILITY OF THE USER. USERS OF ANY CHEMICAL SHOULD SATISFY THEMSELVES THAT THE CONDITIONS AND METHODS OF USE ASSURE THAT THE CHEMICAL IS USED SAFELY. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER NATURE, ARE MADE HEREUNDER WITH RESPECT TO THE INFORMATION CONTAINED HEREIN, OR TO THE CHEMICAL TO WHICH THE USER REFERS.