

MATERIAL SAFETY DATA SHEET

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HUGHES ASSOCIATES
18116 MINNETONKA BLVD.
WAYZATA, MN 55391
PHONE: (612) 404-2626

Date Printed: 3/11/96

HAZARD RATINGS:

ACUTE HEALTH 2	FIRE 1	REACTIVITY 0	HAZARD RATING - LEAST-0 SLIGHT-1 MODERATE-2 HIGH-3 EXTREME- 4
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PRODUCT NAME: EPOXY 220 A; (a combination of the following two epoxy resins.
Formula is Proprietary)

CHEMICAL NAME: EPOXY RESIN
CHEMICAL FAMILY: EPICHLOROHYDRIN-BISPHENOL A RESIN.
EPICHLOROHYDRIN-POLYGLYCOL

1. INGREDIENTS: (% W/W, UNLESS OTHERWISE NOTED)

REACTION PRODUCTS OF EPICHLOROHYDRIN & BISPHENOL A
CAS# 025085-09-8

EPICHLOROHYDRIN-POLYGLYCOL REACTION PRODUCT
CAS#028142-30-3

(The combination of the above two resins equal 100% Formula is Proprietary.)

THIS DOCUMENT IS PREPARED PURSUANT TO THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).
IN ADDITION, OTHER SUBSTANCES NOT "HAZARDOUS" PER THIS OSHA STANDARD MAY BE LISTED. WHERE
PROPRIETARY INGREDIENT SHOWS, THE IDENTITY MAY BE MADE AVAILABLE AS PROVIDED IN THIS STANDARD.

2. PHYSICAL DATA:

BISPHENOL A RESIN.

BOILING POINT: NOT APPLICABLE
VAP. PRESS: NOT APPLICABLE
VAP. DENSITY: NOT APPLICABLE
SOL. IN WATER: NONE
SP. GRAVITY: 1.18
APPEARANCE: WATER-WHITE TO
YELLOW LIQUID TO SEMI-SOLID.
ODOR: FAINT EPOXY ODOR.

POLYGLYCOL

BOILING POINT: >200C @ 760 mmHg
VAP. PRESS. 1.4mm @ 50C
VAP. DENSITY: NOT AVAILABLE.
SOL. IN WATER: NONE
SP. GRAVITY: 1.06
APPEARANCE: LIQUID.
ODOR: ETHEREAL

3. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: 485F, 252C
METHOD USED: ASTM D89, FMCC

FLASH POINT: 310F
METHOD USED: FMCC

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Epoxy 220, Amber
Resin & Curing Agent
TBS # 703008

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PRODUCT NAME: EPOXY 220 A**3. FIRE AND EXPLOSION HAZARD DATA: (CONTINUED)**

FLAMMABLE LIMITS FOR BOTH RESINS.

LFL: NOT APPLICABLE

UFL: NOT APPLICABLE

EXTINGUISHING MEDIA: FOAM, CO2, DRY CHEMICAL

FIRE & EXPLOSION HAZARDS: NONE KNOWN.

FIRE-FIGHTING EQUIPMENT: WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS.

4. REACTIVITY DATA:

STABILITY: (CONDITIONS TO AVOID) EXCESS HEATING OVER LONG PERIODS OF TIME
DEGRADES THE RESIN. AVOID AMINE COMPOUNDS.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) BASE, ACID, AMINES AND
OXIDIZING MATERIALS.

HAZARDOUS DECOMPOSITION PRODUCTS: THE BY-PRODUCTS EXPECTED IN INCOMPLETE
PYROLYSIS OR COMBUSTION OF EPOXY RESINS ARE MAINLY PHENOLICS, CARBON
MONOXIDE, HYDROGEN CHLORIDE AND WATER. THE THERMAL DECOMPOSITION PRODUCTS
OF EPOXY RESINS THEREFORE SHOULD BE TREATED AS POTENTIALLY HAZARDOUS
SUBSTANCES, AND APPROPRIATE PRECAUTIONS SHOULD BE TAKEN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR BY ITSELF, BUT MASSES OF MORE THAN
ONE POUND OF PRODUCT PLUS AN ALIPHATIC AMINE WILL CAUSE IRREVERSIBLE
POLYMERIZATION WITH CONSIDERABLE HEAT BUILDUP.

5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

ACTION TO TAKE FOR SPILLS/LEAKS: SOAK UP IN ABSORBENT MATERIAL SUCH AS SAND
AND COLLECT IN SUITABLE CONTAINERS. RESIDUAL RESIN MAY BE REMOVED USING
STEAM OR HOT SOAPY WATER. SOLVENTS ARE NOT RECOMMENDED FOR CLEANUP UNLESS
THE RECOMMENDED EXPOSURE GUIDELINES AND SAFE HANDLING PRACTICES FOR THE
SPECIFIC SOLVENT ARE FOLLOWED. CONSULT APPROPRIATE SOLVENT MSDS FOR
HANDLING INFORMATION AND EXPOSURE GUIDELINES. KEEP SPARK PRODUCING EQUIPMENT
AWAY. FOR LARGE SPILLS EVACUATE UPWIND OF SPILLS AND CONTAIN WITH DIKE.

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5. ENVIRONMENTAL AND DISPOSAL INFORMATION:(CONTINUED)

DISPOSAL METHOD: BURN IN ADEQUATE INCINERATOR OR BURY IN AN APPROVED LANDFILL; IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

6. HEALTH HAZARD DATA:

EYE: MAY CAUSE SLIGHT TRANSIENT (TEMPORARY) EYE IRRITATION. CORNEAL INJURY IS UNLIKELY.

SKIN CONTACT: REPEATED EXPOSURE MAY CAUSE SKIN IRRITATION. HAS CAUSED ALLERGIC SKIN REACTION IN HUMANS.

SKIN ABSORPTION: A SINGLE PROLONGED EXPOSURE IS NOT LIKELY TO RESULT IN THE MATERIAL BEING ABSORBED THROUGH SKIN IN HARMFUL AMOUNTS. THE LD50 FOR SKIN ABSORPTION IN RABBITS IS 20,000 MG/KG.

INGESTION : SINGLE DOSE ORAL TOXICITY IS LOW. THE ORAL LD50 FOR RATS IS >4000 MG/KG. NO HAZARDS ANTICIPATED FROM SWALLOWING SMALL AMOUNTS INCIDENTAL TO NORMAL HANDLING OPERATIONS.

INHALATION: ELEVATED TEMPERATURES MAY GENERATE VAPOR LEVELS SUFFICIENT TO CAUSE EYE AND RESPIRATORY IRRITATION.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:
EXCEPT FOR SKIN SENSITIZATION, REPEATED EXPOSURES TO LOW MOLECULAR WEIGHT DIGLYCIDYL ETHER OF BISPHENOL A ARE NOT ANTICIPATED TO CAUSE ANY SIGNIFICANT ADVERSE EFFECTS.

CANCER INFORMATION: A POORLY CHARACTERIZED SAMPLE OF LOW MOLECULAR WEIGHT DIGLYCIDYL ETHER OF BISPHENOL A HAS BEEN REPORTED TO PRODUCE SKIN CANCER IN A HIGHLY SENSITIVE STRAIN OF MICE. HOWEVER, HIGH LEVELS OF IMPURITIES (INCLUDING A KNOWN ANIMAL SKIN CARCINOGEN) COMPROMISE THE VALIDITY OF THE FINDINGS.

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6. HEALTH HAZARD DATA: (CONTINUED)**CANCER INFORMATION:**

DIGLYCIDYL ETHER OF BISPHENOL A THAT IS REPRESENTATIVE OF CURRENT
MANUFACTURING PROCESSES IS NOT BELIEVED TO BE A CANCER HAZARD TO HUMANS.

TERATOLOGY (BIRTH DEFECTS):

DID NOT CAUSE BIRTH DEFECTS OR OTHER ADVERSE EFFECTS ON THE FETUS WHEN
PREGNANT RABBITS WERE EXPOSED BY SKIN CONTACT, THE MOST LIKELY ROUTE OF
EXPOSURE.

**MUTAGENICITY (EFFECTS ON GENETIC MATERIAL): RESULTS OF MUTAGENICITY TEST IN
ANIMALS HAVE BEEN NEGATIVE. HAS BEEN SHOWN TO BE NEGATIVE IN SOME IN VITRO
(TEST TUBE) MUTAGENICITY TESTS AND POSITIVE IN OTHERS.**

7. FIRST AID:

EYES: IRRIGATE IMMEDIATELY WITH WATER FOR AT LEAST 5 MINUTES.

SKIN: WASH OFF IN FLOWING WATER OR SHOWER.

**INGESTION: NO ADVERSE EFFECTS ANTICIPATED BY THIS ROUTE OF EXPOSURE INCIDENTAL
TO PROPER INDUSTRIAL HANDLING.**

INHALATION: REMOVE TO FRESH AIR IF EFFECTS OCCUR. CONSULT A PHYSICIAN.

**NOTE TO PHYSICIAN: NO SPECIFIC ANTIDOTE. SUPPORTIVE CARE. TREATMENT BASED ON
JUDGEMENT OF THE PHYSICIAN IN RESPONSE TO REACTIONS OF THE PATIENT.**

8. HANDLING PRECAUTIONS:

EXPOSURE GUIDELINES: NONE ESTABLISHED.

**VENTILATION: GOOD GENERAL VENTILATION SHOULD BE SUFFICIENT FOR MOST CONDITIONS.
LOCAL EXHAUST VENTILATION MAY BE NECESSARY FOR SOME OPERATIONS.**

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8. HANDLING PRECAUTIONS: (CONTINUED)

RESPIRATORY PROTECTION: NO RESPIRATORY PROTECTION SHOULD BE NEEDED; HOWEVER, IN MISTY ATMOSPHERES, USE AN APPROVED MIST RESPIRATORY. IF RESPIRATORY IRRITATION IS EXPERIENCED, USE AN APPROVED AIR-PURIFYING RESPIRATOR.

SKIN PROTECTION: FOR BRIEF CONTACT, NO PRECAUTIONS OTHER THAN CLEAN BODY-COVERIN SHOULD BE NEEDED. USE IMPERVIOUS GLOVES WHEN PROLONGED OR FREQUENTLY REPEATED CONTACT COULD OCCUR. REMOVE CONTAMINATED CLOTHING NO LATER THAN THE END OF THE WORK PERIOD AND CLEAN BEFORE REUSE.

EYE PROTECTION: USE SAFETY GLASSES. WHERE CONTACT WITH THIS MATERIAL IS LIKELY, CHEMICAL GOGGLES ARE RECOMMENDED BECAUSE EYE CONTACT MAY CAUSE DISCOMFORT EVEN THOUGH IT IS UNLIKELY TO CAUSE INJURY.

9. ADDITIONAL INFORMATION:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
PRACTICE GOOD CAUTION AND PERSONAL CLEANLINESS TO AVOID SKIN AND EYE CONTACT. AVOID BREATHING VAPORS OF HEATED MATERIAL.

REGULATORY INFORMATION: (NOT MEANT TO BE ALL-INCLUSIVE--SELECTED REGULATIONS REPRESENTED).

NOTICE: THE INFORMATION HEREIN IS PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE AS OF THE EFFECTIVE DATE SHOWN ABOVE. HOWEVER, NO WARRANTY, EXPRESS OR IMPLIED, IS GIVEN. REGULATORY REQUIREMENTS ARE SUBJECT TO CHANGE AND MAY DIFFER FROM ONE LOCATION TO ANOTHER; IT IS THE BUYER'S RESPONSIBILITY TO ENSURE THAT ITS ACTIVITIES COMPLY WITH FEDERAL, STATE OR PROVINCIAL, AND LOCAL LAWS. THE FOLLOWING SPECIFIC INFORMATION IS MADE FOR THE PURPOSE OF COMPLYING WITH NUMEROUS FEDERAL, STATE OR PROVINCIAL, AND LOCAL LAWS AND REGULATIONS. SEE MSD SHEET FOR HEALTH AND SAFETY INFORMATION

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SARA HAZARD CATEGORY: THE PRODUCTS HAS BEEN REVIEWED ACCORDING TO THE EPA "HAZARD CATEGORIES" PROMULGATED UNDER SECTION 311 & 312 OF THE SUPERFUND AMENDMENT & REAUTHORIZATION ACT OF 1996 (SARA TITLE 111) & IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES: AN IMMEDIATE HEALTH HAZARD.

CANADIAN REGULATIONS

The Workplace Hazardous Material Information System Classification for this product is: D28

OTHER REGULATORY INFORMATION

THE INFORMATION HEREIN IS GIVEN IN GOOD FAITH, BUT NO WARRANTY, EXPRESS OR IMPLIED, IS MADE. CONSULT HUGHES ASSOCIATES FOR FURTHER INFORMATION.

EYE PROTECTOR USE SAFETY GLASSES WHERE CONTACT WITH THE MATERIAL IS LIKELY. CHEMICAL GOGGLES ARE RECOMMENDED BECAUSE EYE CONTACT MAY CAUSE DISCOMFORT EVEN THOUGH IT IS UNLIKELY TO CAUSE INJURY.

ADDITIONAL INFORMATION:
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