

SPECIALTY MATERIALS, INC.

Manufacturers of Boron and SCS Silicon Carbide Fibers and Boron Nanopowder

MATERIAL SAFETY DATA SHEET - Boron Prepreg 5521

----- SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION -----

Product Name: Boron Prepreg 5521

Product Use Description: Unidirectional Boron monofilament reinforcement in a 250°F cure epoxy resin system for use in high strength, moderate temperature composite applications

Manufacturer's Name: Specialty Materials, Inc.
Address: 1449 Middlesex Street
City, State, and ZIP: Lowell, MA 01851

Emergency Telephone No.: 978-322-1927

Other Information: 978-322-1900

Date Prepared: August 28, 2009

HMIS LABEL

HEALTH	2
FIRE	1
REACTIVITY	1
PPE	X

----- SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS -----

Amounts specified are typical and do not represent a specification

Component(s)	OSHA PEL	ACGIH TLV	OTHER EXPOSURE LIMITS	% MAXIMUM CONTENT	CAS No.
Proprietary formulation of Multi-Functional Glycidyl Epoxy Resins (TGMDA and DGEBA)	N/E	N/E	N/E		5026-74-4 (typ.)
Epoxy curing agents (type CG)	N/E	N/E	N/E		461-58-5
Diuron Urea 3-(3,4 dichlorophenyl) -1, 1-dimethylurea	10 mg/m ³	10 mg/m ³	10 mg/m ³ (DuPont AEL)	<6%	330-54-1
Fibrous Glass (Micro Glass)	Nus. Dust 15mg/m ³ Resp. Dust 5mg/m ³	Fibrous Glass Dust 10mg/m ³	N/E	<2%	65997-17-3
Boron Filament (excluding Tungsten core)	NONE	NONE	NONE	60-70%	7440-42-8

This Product Contains Components Considered to be Hazardous under OSHA Hazard communication Standard 29 CFR 1910.1200

SPECIALTY MATERIALS, INC.

Manufacturers of Boron and SCS Silicon Carbide Fibers and Boron Nanopowder

----- SECTION 3 - PHYSICAL & CHEMICAL CHARACTERISTICS -----

Boiling Point:	Not Applicable
Specific Gravity (H ₂ O = 1):	2.0
Vapor Pressure (mm Hg):	Negligible
Vapor Density (Air = 1):	Not Applicable
Solubility in Water:	Negligible
Reactivity in Water:	None
Melting Point:	Not Applicable
Appearance and Odor:	Black flat odorless tape

----- SECTION 4 - FIRE & EXPLOSION DATA -----

Flash Point:	>300 °F
Method Used:	Open Cup
Flammable Limits in Air % by Volume:	
LEL Lower:	Not Established
UEL Upper:	Not Established
Auto-Ignition Temperature:	Unknown
Extinguisher Media:	Submerge in water or cover with inert material
Special Fire Fighting Procedures:	Wear Self-Contained Breathing Apparatus to prevent exposure to fumes. Use Foam, CO ₂ Dry Chemical and/or cover with Sand.
Unusual Fire and Explosion Hazards:	None Known

----- SECTION 5 - PHYSICAL HAZARDS (REACTIVITY DATA) -----

Stability:	Unstable () Stable (X)
Conditions to Avoid:	Extended Storage above 80 °F or Exposure to Direct Sunlight, Heating Bulk Quantities above 100 °F.
Incompatibility (Materials to Avoid):	Acids, Bases, Anhydrides, Polysulfides
Hazardous Decomposition Products:	CO, CO ₂ , HCN, NO _x
Hazardous Polymerization:	May Occur (X) Will Not Occur ()

SPECIALTY MATERIALS, INC.

Manufacturers of Boron and SCS Silicon Carbide Fibers and Boron Nanopowder

----- **SECTION 6 - HEALTH HAZARDS** -----

1. Acute: Fiber Splinters, Skin Irritation and/or Allergic Skin Reactions

2. Chronic: Possible allergic reaction, Dermatitis

Signs and Symptoms of Exposure: Irritation of Skin or Eyes from Splinters or Epoxy

Medical Conditions Generally Aggravated by Exposure: Dermatitis

The following Toxicity Data is reported for Diuron, a minor component of the epoxy: Dermal LD50 (Rabbit) = >2,000 mg/kg (Tech), Oral LD50 (Rat) = 2,900 mg/kg (Tech)

Emergency and First Aid Procedures:

1. Inhalation: Unlikely - unless epoxy is cured then pulverized or otherwise finely divided. If inhaled, remove to fresh air. If breathing is difficult, give oxygen and call a physician.
2. Eyes: Potential transfer from hands or gloves – if eye contact occurs, hold eye open and flush gently with water for at least 15 minutes and call a physician.
3. Skin or Clothing: Most Likely – remove contaminated clothing, wash affected area(s) with soap and water. Remove boron fiber splinters as soon as possible and clean the affected area.
4. Ingestion: Unlikely - unless epoxy is cured then pulverized or otherwise finely divided. If swallowed, do not induce vomiting. Call a Poison Control Center or Physician immediately for treatment advice. Do not give anything by mouth to an unconscious or convulsing person.

Chemicals Listed as Carcinogen or Potential Carcinogen:

National Toxicology Program: Yes () No (X)

I.A.R.C. Monographs: Yes () No (X)

OSHA: Yes () No (X)

----- **SECTION 7 - SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES** -----

Precautions to be taken in Handling and Storage: Careful handling to avoid any penetration of skin or eyes by fibers. Unless pulverized, fiber size is too large for inhalation and is encased in catalyzed epoxy resin. Some individuals can develop rashes from epoxy resins. Store in closed containers and use gloves or barrier creams if rash occurs.

Other Precautions: None known. This resin system should be considered more reactive than most epoxy resin systems.

SPECIALTY MATERIALS, INC.

Manufacturers of Boron and SCS Silicon Carbide Fibers and Boron Nanopowder

Steps to be Taken In Case Material Is Released or Spilled:	Clean material can be returned to proper storage. Contaminated material should be cured to prevent inadvertent heating resulting in resin exotherm. Clean up carefully to avoid fiber splinters; sweep up or vacuum.
Waste Disposal Method (Consult Federal, State, and Local Regulations):	Dispose only cured material in accordance with Federal, State and Local Regulations. Cured material may not be considered a Hazardous Waste.

-- SECTION 8 - SPECIAL PROTECTION INFORMATION/CONTROL MEASURES --

Respiratory Protection	None Usually - For Cutting or Grinding, use Approved Respirator suitable for dusts if exposure exceeds TLV level. Respirator For Nuisance Dust (29 CFR 1910.134)
Ventilation:	Recommended
Local Exhaust:	Not Required unless cutting or grinding the product
Mechanical (General):	As Per ACGIH Industrial Vet. Guidelines
Protective Gloves:	Recommended (29 CFR 1910.132)
Eye Protection:	Recommended (29 CFR 1910.133)
Other Protective Clothing or Equipment:	Additional Protective Clothing to include Long-Sleeved Garments, long pants and Face Shield for High Sensitivity Individuals
Work/Hygienic Practices:	Wash hands thoroughly before Eating or Smoking. Do not touch or rub eyes with hands or gloves while handling this material

----- SECTION 9 - TOXICITY INFORMATION -----

Acute Health Hazard	
Ingestion:	No Data on the Product itself. The Diuron component of the epoxy formulation indicates Oral LD50 (Rat) = 2,900 mg/kg (Tech).
Inhalation:	No Data on the Product itself. The Diuron component of this product indicates possible weakness or shortness of breath by formation of methemoglobin due to inhalation.
Skin:	No Data on the Product itself. Epoxy constituents used in this Product have resulted in Positive Patch Test results for Allergic Contact Dermatitis (ACD). The Diuron component of this product indicates Dermal LD50 (Rabbit) = >2,000 mg/kg (Tech).
Eyes:	No Data on the Product itself. The Diuron component of this product indicates possible tearing or blurring of vision as a result of eye contact.

SPECIALTY MATERIALS, INC.

Manufacturers of Boron and SCS Silicon Carbide Fibers and Boron Nanopowder

Chronic Health Hazard

This Product Contains no Listed Carcinogens According to IARC, ACGIH, NTP and/or OSHA in Concentrations of 0.1 Percent or Greater

-----*SECTION 10 – ATTACHMENTS*-----

NOTICE:

THE INFORMATION PRESENTED HERE IN IS BASED UPON DATA CONSIDERED TO BE ACCURATE AS OF THE DATE OF MANUFACTURE OF THIS MATERIAL DATA SAFETY DATA SHEET. HOWEVER, NO WARRANTY OR REPRESENTATION, EXPRESSED OR OTHERWISE, IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THE FOREGOING DATA AND SAFETY INFORMATION, NOR IS ANY AUTHORIZATION GIVEN OR IMPLIED TO PRACTICE ANY PATENTED INVENTION WITHOUT A LICENSE. IN ADDITION, THE VENDOR CAN ASSUME NO RESPONSIBILITY FOR ANY DAMAGE OR INJURY RESULTING FROM ABNORMAL USE, FROM ANY FAILURE TO ADHERE TO RECOMMENDED PRACTICES, OR FROM ANY HAZARDS INHERENT IN THE NATURE OF THE PRODUCT.