



## MATERIAL SAFETY DATA SHEET (MSDS) SAFETY DATA SHEET (SDS)

MSDS Date: February 17, 2015

### 1. IDENTIFICATION OF SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**IDENTIFICATION OF PREPARATION:** IS620 Prepreg

**USE OF PREPARATION:** Uncured resin-impregnated woven fiberglass prepreg.

**COMPANY IDENTIFICATION** ISOLA USA Corp.

San Tan II Corporate Center  
3100 West Ray Road  
Chandler, AZ 85226

**PHONE:** 480-963-0022

**FAX:** 800-233-1068

**MSDS PREPARED BY:** Chemistry & Industrial Hygiene, Inc., (303) 420-8242, on the date shown above.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

**EMERGENCY TELEPHONE (24 HOUR): 800-468-1263 (Infotrac)**

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

MATERIAL	CAS NUMBER	EC NUMBER	PERCENT	Hazard Classification
Woven continuous filament glass fiber-Nonrespirable (E-glass)	65997-17-3	266-046-0	35-60	Xi, R36/37/38
Brominated Flame Retardant	79-94-7	201-236-9	1-5	Xi, R36/37/38
Proprietary Filler	60676-86-0	262-373-8	3-7	Not Classified
Proprietary Brominated Resin	Proprietary	Proprietary	5-10	Not Classified
Proprietary Epoxy Resin	Proprietary	Proprietary	5-10	Not Classified
Non-Hazardous Ingredients	Mixture	Mixture	15-40	Not Classified

See Section 16 for details on Hazard Classifications. Information regarding proprietary ingredients is available from the manufacturer upon request.

### 3. HAZARDS IDENTIFICATION

**Canadian WHMIS for the preparation:** Class D, Division 2B-Toxic Material Causing Other Effects-Chronic Toxicity

**EU PREPARATION CLASSIFICATION (1999/45/EC):** R10, Irritant (Xi), R36/37/38

**EMERGENCY OVERVIEW:** FLAMMABLE! Inhalation of residual organic vapors from uncured resins may be harmful. May cause allergic skin reaction in sensitive individuals.

**POTENTIAL HEALTH EFFECTS:** No information is available on this specific mixture as a whole. The information presented is based on each of the components present at concentrations greater than 1% (0.1 % for carcinogens). Exposure to uncured resin vapors may cause eye, skin and respiratory tract irritation, and possible skin sensitization.



Dust generated during routine handling, machining, grinding, or sawing may cause mechanical irritation of skin, eyes, nose, and throat. This product contains less than one percent total residual solvents (N,N-Dimethylformamide, Methyl Ethyl Ketone, and/or Toluene). Animal tests have shown that exposure to N,N-Dimethylformamide, Methyl Ethyl Ketone and Toluene may have toxic effects on reproduction.

Machining, grinding or sawing this material may generate harmful dusts. Continuous filament glass fiber is not considered fibrogenic; however, it is woven from E-Glass fibers which are listed by IARC as "special purpose glass fibers" and designated as "possibly carcinogenic to humans." Repeated or prolonged overexposure to silica may decrease the ability of the lungs to clear particulate matter, resulting in shortness of breath and increased susceptibility to respiratory disease. See Section 8 for exposure controls.

**ROUTES OF ENTRY:** Dermal: YES Inhalation: POSSIBLE Ingestion: SLIGHT Injection: POSSIBLE

#### 4. FIRST AID MEASURES

**SEEK IMMEDIATE MEDICAL ATTENTION IF IRRITATION OCCURS.**

**INHALATION:** Remove the person to fresh air. Treat respiratory distress as appropriate (artificial respiration, etc.) Provide oxygen if necessary. If not breathing, give mouth-to-mouth resuscitation and seek immediate medical attention.

**EYES:** Immediately flush eyes with large amounts of temperate water for a minimum of 15 minutes. Consult an ophthalmologist for a more detailed medical evaluation.

**SKIN:** Remove contaminated clothing. Wash skin thoroughly with mild soap and room temperature running water. DO NOT rub or scratch irritated areas, as this may force fibers into the skin. See immediate medical attention if irritation continues.

**INGESTION:** Not expected to be a significant route of exposure based on expected use. If ingestion occurs, seek immediate medical attention.

**SYMPTOMS OF EXPOSURE:** May include irritation of the skin, eyes, and upper respiratory tract, coughing, wheezing, shortness of breath, headache, dizziness, nausea, and/or vomiting.

#### 5. FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA:** Powder, carbon dioxide, or alcohol-resistant foam. Water may be ineffective as an extinguishing medium, but can be used to cool fire-exposed containers.

**FIRE FIGHTING EQUIPMENT:** Wear full bunker gear including a positive pressure self-contained breathing apparatus in any closed place.

#### 6. ACCIDENTAL RELEASE MEASURES

**GENERAL:** FLAMMABLE! Vapors may form explosive concentrations when mixed with air. Avoid contact with skin, eyes or clothing. Sweep or scrape into approved container for proper disposal.

#### 7. HANDLING AND STORAGE

**HANDLING:** FLAMMABLE! May contains volatile organic compounds. Avoid contact with eyes, skin and clothing. The use of appropriate gloves is recommended to minimize the potential for skin contact (See Section 8). Provide adequate ventilation to minimize exposure. Provide proper NIOSH- or local authority-approved respirators if exposure limits are exceeded. Use only non-sparking tools and equipment.



**STORAGE:** Store in tightly closed containers in a well-ventilated area. Avoid contact with incompatible materials. Keep from ignition sources, such as sparks and flames. NO SMOKING.

## 8. EXPOSURE CONTROLS /PERSONAL PROTECTION

MATERIAL	EXPOSURE LIMITS*		
	OSHA PEL <sup>(a)</sup>	ACGIH TLV <sup>(b)</sup>	NIOSH REL <sup>(c)</sup>
Woven continuous filament glass fibers (including special purpose glass fibers)	15 mg/m <sup>3(d)</sup> TWA <sup>(e)</sup> Total Dust (PNOR) <sup>(f)</sup> 5 mg/m <sup>3(d)</sup> TWA <sup>(e)</sup> Respirable Dust <sup>(g)</sup>	1 f/cc <sup>(h)</sup> TWA <sup>(e)</sup> Fibers <sup>(i)</sup> 5 mg/m <sup>3(d)</sup> TWA <sup>(e)</sup> Inhalable Dust <sup>(g)</sup>	3 f/cc <sup>(h)</sup> TWA <sup>(e)</sup> Fibers <sup>(i)</sup> 5 mg/m <sup>3(d)</sup> TWA <sup>(e)</sup> Respirable Dust <sup>(g)</sup>
Brominated Flame Retardant	None Established	None Established	None Established
Proprietary Filler	10 mg/m <sup>3(d)</sup> TWA <sup>(e)</sup> (% SiO <sub>2</sub> +2) Respirable Dust <sup>(g)</sup>	0.1 mg/m <sup>3(d)</sup> TWA <sup>(e)</sup> Respirable Dust <sup>(g)</sup>	0.05 mg/m <sup>3(d)</sup> TWA <sup>(e)</sup> Respirable Dust <sup>(g)</sup>
Proprietary Brominated Resin	None Established	None Established	None Established
Proprietary Epoxy Resin	None Established	None Established	None Established

\*See Section 15 for additional Occupational Exposure Limits (OELs).

(a) U.S. Department of Labor, Occupational Safety and Health Administration, permissible exposure limit; (b) American Conference of Governmental Industrial Hygienists', threshold limit value; (c) National Institute for Occupational Safety and Health, recommended exposure limit; (d) milligrams per cubic meter; (e) time-weighted average over an 8-hour day, 40-hour work week for OSHA PELs and ACGIH TLVs, or up to a 10-hour day, during a 40-hour work week for NIOSH RELs; (f) Particulates Not Otherwise Regulated; (g) particles in the size range that are hazardous when deposited in the gas-exchange region of the lungs. (h) fibers per cubic centimeter; (i) Respirable fibers longer than 5 microns and having an aspect ratio of  $\geq 3:1$ .

### ENGINEERING CONTROLS:

Use local exhaust to minimize exposures and maintain airborne dust and uncured resin vapor concentrations below occupational exposure limits, especially where heating or machining/grinding/sawing operations occur.

### PERSONAL PROTECTIVE EQUIPMENT:

**RESPIRATORY PROTECTION:** In the absence of adequate general or local ventilation, use a NIOSH- or local authority-approved respirator appropriate for the contaminant if exposure limits are exceeded. Consult an industrial hygienist for assistance as needed.

**SKIN PROTECTION:** Avoid skin contact! Use impervious gloves, and splash-resistant clean body-covering clothing to minimize exposure. Due to the combination of chemical ingredients, an industrial hygienist should be consulted to select appropriate glove material for specific product application. Wash contaminated clothing before reuse.

**EYE PROTECTION:** Use chemical resistant goggles when handling, and safety glasses or a face shield when machining, grinding or sawing.

**WORK/HYGIENE PRACTICES:** Good personal hygiene should be exercised by all users of this product to minimize potential dermal and inhalation exposures.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Off-white resin impregnated woven glass fibers
Odor:	Not Applicable
Odor Threshold:	Not Applicable
Boiling Point:	Not Applicable

Flash Point:	-9°C/16°F (MEK)
Auto-ignition Temperature:	505°C/941°F (MEK)
Lower Explosive Limit (LEL):	1.4% (MEK)
Upper Explosive Limit (UEL):	11.5% (MEK)
Vapor Pressure:	Not Applicable
Specific Gravity:	Not Applicable
Total Volatile Organic Compounds (TVOC) (G/L):	Not Applicable
Solubility in Water:	Not Applicable
Partition Coefficient:	Not Applicable
Viscosity of Solution:	Not Applicable
Vapor density (Air=1.0):	Not Applicable
Percent Volatility of Solution:	Less than 1% Volatile Organic Compounds

## 10. STABILITY AND REACTIVITY

**This material is stable under expected conditions of use, handling and storage.**

**CONDITIONS TO AVOID:** Avoid sparks, flames and excessive heat. Hazardous polymerization can occur with rapid or excessive heating

**INCOMPATIBLE MATERIALS:** Strong acids, strong oxidizers, and halogenated hydrocarbons. This product may attack some plastic materials.

**HAZARDOUS DECOMPOSITION:** Dense smoke, acrid vapors and fumes, hydrocarbons of variable composition, bromine, hydrogen bromide, CO<sub>x</sub>, NO<sub>x</sub>.

**EXOTHERMIC REACTION FIGHTING PROCEDURES:** Dissipate heat by spreading material apart and dousing with water. Contain vapors with local exhaust.

## 11. TOXICOLOGICAL INFORMATION

**NO DATA AVAILABLE ON THE SPECIFIC MIXTURE.**

### CONTINUOUS FILAMENT GLASS FIBERS

NIOSH RTECS No.: LK3651000

Acute Effects of Overexposure: Exposure to dust may cause irritation to skin, eyes, and respiratory system.

Effects Chronic of Overexposure: Repeated or prolonged contact with skin may cause dermatitis. Tumors have been detected in experimental animals but may not be relevant to humans.

Target Organs: Skin, lungs.

Carcinogenicity: ACGIH A4, IARC Group 3

Special purpose glass fibers: ACGIH A3, IARC Group 2B

Toxicity Data: No LD50 data available.

### BROMINATED FLAME RETARDANT

NIOSH RTECS No.: SM0894500

Acute Effects of Overexposure: None Known

Chronic Effects of Overexposure: None Known

Target Organs: None Known

Carcinogenicity: Not listed as a carcinogen by IARC, ACGIH, NTP, OSHA, or NIOSH.

Toxicity Data: IHL-RAT LC50 >10,920 mg/m<sup>3</sup>/4h

IHL-MUS LC50 >500 mg/m<sup>3</sup>/8h

ORL-RAT LD50 >5,000 mg/kg

SKN-RAB LD50 >2,000 mg/kg

## TOXICOLOGICAL INFORMATION (continued)

### **PROPRIETARY FILLER**

NIOSH RTECS No.: VV7328000

Acute Effects of Overexposure: Exposure to high concentrations of dust may cause coughing and respiratory irritation.

Chronic Effects of Overexposure: Repeated or prolonged overexposure may decrease the ability of the lungs to clear particulate matter, resulting in shortness of breath and increased susceptibility to respiratory disease.

Carcinogenicity: NIOSH - Potential, IARC Group 3

Toxicity Data: No LD50 data available.

### **PROPRIETARY BROMINATED RESIN**

NIOSH RTECS No.: Not Listed

Acute Effects of Overexposure: Irritating to eyes, skin and mucous membranes.

Chronic Effects of Overexposure: Repeated or long-term exposure may cause skin sensitization.

Target Organs: Skin

Carcinogenicity: Not listed as a carcinogen by IARC, ACGIH, NTP, OSHA, or NIOSH.

Toxicity Data: ORL RAT LD50 1140 mg/kg

SKN RAB LD50 >2,000 mg/kg

### **PROPRIETARY EPOXY RESIN**

NIOSH RTECS No.: Not Listed.

Acute Effects of Overexposure: May cause eye, skin or respiratory irritation and possible allergic reaction.

Chronic Effects of Overexposure: May cause skin and/or respiratory sensitization..

Target Organs: Skin, lungs.

Carcinogenicity: Not listed as a carcinogen by IARC, ACGIH, NTP, OSHA, or NIOSH.

Toxicity Data: ORL-RAT LD50>2,400 mg/kg

SKN-RAB LD50 6,000 mg/kg

## **12. ECOLOGICAL INFORMATION**

### **NO DATA AVAILABLE ON THE SPECIFIC MIXTURE.**

#### **CONTINUOUS FILAMENT GLASS FIBERS (E-GLASS)**

No available data.

#### **BROMINATED FLAME RETARDANT**

Ecotoxicity: LC50(96h) 0.4 mg/l Rainbow trout

EC50(48h) 0.96 mg/l Daphnia magna

Mobility: Insoluble in water.

Persistence and Degradability: Not readily biodegradable.

Bioaccumulation Potential: Has the potential to bioaccumulate.

#### **PROPRIETARY FILLER**

No available data.

#### **PROPRIETARY BROMINATED RESIN**

Ecotoxicity: LC50(96h) 1.5-7.7 mg/l Rainbow Trout

EC50(24h) 1.1-3.6 mg/l Daphnia Magna

EC50(96h) 220 mg/l Green Algae

Mobility: No additional information.

Persistence and Degradability: Slightly biodegradable.

Bioaccumulation Potential: No additional information.



**ECOLOGICAL INFORMATION (continued)**

**PROPRIETARY EPOXY RESIN**

Ecotoxicity: LC50(96h) 2.4 mg/L Fish  
LC50(96h) 3.6 mg/L Daphnia Magna

Mobility: No addition information.

Persistence and Degradability: Not readily biodegradable.

Bioaccumulation Potential: No additional information.

**13. DISPOSAL CONSIDERATIONS**

**GENERAL:** Follow all applicable local, national, provincial, territorial, and international regulations. This material is regulated as a hazardous waste under the US EPA Resource Conservation and Recovery Act (RCRA). Storage, disposal, treatment, and transportation of this material are regulated by the USEPA. Refer to the European Waste Catalog (EWC) for appropriate waste code(s).

**14. TRANSPORT INFORMATION**

Not regulated by US DOT, ICAO/IATA, RID/ADR, IMDG, Canada TDG

**15. REGULATORY INFORMATION**

**EPA Toxic Substances Control Act (TSCA) Status:** All of the components of this product are listed on the TSCA inventory.

**Canadian Environmental Protection Act:** All of the components of this product are listed on the Canadian Domestic Substances List (DSL).

**European Inventory of Existing Commercial Chemical Substances (EINECS):** All of the components of this product are listed on the EINECS inventory or are polymer exempt.

**ADDITIONAL OCCUPONAL EXPOSURE LIMITS (OELs):** There are currently no international OELs for the Brominated Flame Retardant, Proprietary Brominated Resin, or the Proprietary Epoxy Resin.

	<b>CONTINUOUS FILAMENT GLASS FIBERS (based on mineral wool)</b>	<b>PROPRIETARY FILLER</b>
Australia	0.5 f/cc TWA Fibers 2 mg/m <sup>3</sup> TWA Dust	None Listed
Austria	0.5 f/cc TWA Fibers	0.3 mg/m <sup>3</sup> MAK
Belgium	Not Listed	None Listed
Denmark	1 f/cc TWA Fibers, Carcinogen	None Listed
Finland	10 mg/m <sup>3</sup> TWA Dust	5 mg/m <sup>3</sup> TWA
France	1 f/cc TWA Fibers	None Listed
Germany	0.25 f/cc TWA (Non-exonerated Fibers) 6 mg/m <sup>3</sup> TWA Dust	0.3 mg/m <sup>3</sup> MAK
Hungary	Not Listed	None Listed
India	Not Listed	None Listed



**ADDITIONAL OELs (continued)**

	<b>CONTINUOUS FILAMENT GLASS FIBERS (based on mineral wool)</b>	<b>PROPRIETARY FILLER</b>
Italy	<1 f/cc TWA Fibers 5 mg/m <sup>3</sup> TWA Dust	Not Listed
Japan	2.9 mg/m <sup>3</sup> Dust (administrative control level)	None Listed
The Netherlands	2 f/cc TWA Fibers	None Listed
Norway	1 f/cc TWA Fibers	0.05 mg/m <sup>3</sup> TWA Respirable Dust
The Philippines	Not Listed	None Listed
Poland	Not Listed	None Listed
Russia	Not Listed	None Listed
Sweden	1 f/cc TWA Fibers	None Listed
Switzerland	0.5 f/cc Fibers	0.3 mg/m <sup>3</sup> MAK-W
Thailand	Not Listed	None Listed
United Kingdom	2 f/cc TWA Fibers 5 mg/m <sup>3</sup> TWA Dust	0.08 mg/m <sup>3</sup> TWA Respirable Dust
Argentina, Bulgaria, Colombia, Jordan, Korea, New Zealand, Singapore, Vietnam	Not Listed	SEE ACGIH TLV

**SOURCE:** The Registry of Toxic Effects of Chemical Substances (RTECS), National Institute for Occupational Safety and Health (NIOSH).

**16. OTHER INFORMATION**

**HAZARD SYMBOLS**

X<sub>i</sub>=Irritant

**R-PHRASES**

R10-Flammable

R36/37/38-Irritating to eyes, respiratory tract and skin

**NOTE:** This product contains uncured resin(s). Curing should only be done in well-ventilated or closed systems. In accordance with good industrial hygiene, handle with care and avoid unnecessary personal contact.

**Current MSDS Revision Date:** February 17, 2015

**Previous MSDS Date:** December 22, 2005; November 30, 2001

**DISCLAIMER:** The information contained in this MSDS relates specifically to the product as a whole and may not be valid if used in combination with other materials or in any specified process. The information on IS620 is accurate to the best of our knowledge but does not purport to be all inclusive and should only be used as a general guide. It is the user's responsibility to ensure that the product will be suitable for particular usage. The user assumes all responsibility for compliance with applicable Federal, State and Local Regulations. We do not accept liability for damage or loss that may occur from the use of this information.