



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

MSDS Date: March 16, 2015

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

IDENTIFICATION OF PREPARATION: IS420 Prepreg

USE OF PREPARATION: Resin-impregnated woven fiberglass.

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., (800) 420-9311, on the date shown above.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations of Canada 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 (E-glass) - nonrespirable	65997-17-3	266-046-0	35-60	X _i , R36/37/38
Proprietary Epoxy Resin Blend	Proprietary	Proprietary	15-40%	X _i , R36/38-43 N, R51/53
Brominated Flame Retardant	79-94-7	201-236-9	7-13%	N, R50/53
Proprietary Filler	Proprietary	xxx-xxx-x	10-20%	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 2A – Very Toxic Material Causing Chronic Toxic Effects and Carcinogenicity
Class D, Division 2B – Toxic Material Causing Eye and Skin Irritation, and Skin Sensitization

EU PREPARATION CLASSIFICATION (1272/2008/EC):

Irritant (X_i), R36/37/38-43;
Dangerous for the Environment (N), R51/53

EMERGENCY OVERVIEW: Inhalation of product particulates or of residual solvent vapors may be harmful. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. May cause skin sensitization.

HAZARDS IDENTIFICATION (continued)

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 hazardous substances other than those classified as X_n, X_i, or category 3 carcinogens, mutagens or toxic for reproduction). May cause irritation of the eyes, skin, and respiratory and digestive tract. May cause skin sensitization. May be harmful if swallowed in large quantities. May cause delayed pulmonary edema. Long-term or repeated exposure may have effects on the lungs, including pneumoconiosis, and may cause cancer. This product contains less than one percent total residual solvents (methyl ethyl ketone, methyl isobutyl ketone, and methanol). Exposure to residual vapors may cause eye, skin, and respiratory tract irritation, effects on the central nervous system, blindness, or death. Repeated or prolonged exposure to residual vapors may have toxic effects on human reproduction, or result in persistent or recurring headaches, dermatitis, and impaired vision. Dust generated during routine handling, machining, grinding, or sawing may cause mechanical irritation of skin, eyes, nose, and throat.

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 "possibility of carcinogenic in humans." 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. Seek 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 eyes, skin, and respiratory and digestive tract, difficulty breathing, allergic skin reaction, skin sensitization, nausea, vomiting, diarrhea, cough, fibrotic pneumoconiosis, headache, dizziness, weakness, visual disturbance, sore throat, central nervous system depression, unconsciousness, and loss of appetite.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Carbon dioxide, foam or dry chemical powder. Water may be ineffective as an extinguishing medium, but can be used to cool fire-exposed containers. If using a fire extinguisher, make sure that it is an NFPA Class B extinguisher (e.g. label rating will read AB, ABC or BC)

FIRE FIGHTING EQUIPMENT: Wear full bunker gear including a positive pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

GENERAL: Under conditions of inadequate ventilation, explosive vapor concentrations may form. Avoid contact with skin, eyes or clothing. Sweep or scrape into approved container for proper disposal. Avoid generating dusty conditions. See Section 13 for Disposal Considerations.



7. HANDLING AND STORAGE

HANDLING: May contain residual volatile organic compounds. Avoid contact with eyes, skin and clothing. Do not eat drink or smoke while handling this product. Use only in a well ventilated area. Avoid inhalation and ingestion. 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. Wash thoroughly after handling this product.

STORAGE: Store in a tightly closed container in a cool, dry 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 ^(a)	ACGIH TLV ^(b)	NIOSH REL ^(c)
Woven continuous filament glass fibers (including special purpose glass fibers)	15 mg/m ^{3(d)} TWA ^(e) Total Dust (PNOR) ^(f) 5 mg/m ^{3(d)} TWA ^(e) Respirable Dust ^(g)	1 f/cc ^(h) TWA ^(e) Fibers ⁽ⁱ⁾ 5 mg/m ^{3(d)} TWA ^(e) Inhalable Dust ^(g)	3 f/cc ^(h) TWA ^(e) Fibers ⁽ⁱ⁾ 5 mg/m ^{3(d)} TWA ^(e) Total Fibrous Glass
Proprietary Epoxy Resin Blend	None Established	None Established	None Established
Brominated Flame Retardant	None Established	None Established	None Established
Proprietary Filler	20 mppcf ^(j) TWA	2 mg/m ³ TWA Respirable Dust	2 mg/m ³ TWA Respirable Dust

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

(a) U.S. Department of Labor, Occupational Safety and Health Administration, permissible exposure limit (PEL); (b) American Conference of Governmental Industrial Hygienists', threshold limit value (TLV); (c) National Institute for Occupational Safety and Health, recommended exposure limit (REL); (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 (PNOR); (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 $\geq 3:1$; (j) million particles per cubic foot.

ENGINEERING CONTROLS:

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

EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY PROTECTION: In the absence of adequate general or local ventilation, or other appropriate engineering controls, 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:	Not Applicable
Auto-ignition Temperature:	Not Determined
Lower Explosive Limit (LEL):	Not Applicable Under Foreseeable Uses
Upper Explosive Limit (UEL):	Not Applicable Under Foreseeable Uses
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:	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 exposure to excessive heat, flames, sparks and other ignition sources. Avoid contact with incompatible materials. Hazardous polymerization is not expected to occur.

INCOMPATIBLE MATERIALS: Strong Oxidizers, Strong Bases.

HAZARDOUS DECOMPOSITION: Dense smoke, acrid vapors and fumes, aliphatic and aromatic hydrocarbons of variable composition, bromine, hydrogen bromide, CO_x, NO_x, silicon dioxide.

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 the eyes, skin and respiratory system, and may cause difficulty breathing.

Chronic Effects 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: Eyes, skin, respiratory system.

Carcinogenicity: ACGIH A4, IARC Group 3

Special purpose glass fibers (E-Glass): ACGIH A3, IARC Group 2B

Toxicity Data: LD₅₀ data not available in sources utilized.

Mouse-Intratracheal Lethal Dose > 20 mg/kg

TOXICOLOGICAL INFORMATION (continued)

PROPRIETARY EPOXY RESIN BLEND

NIOSH RTECS No.: Not listed.

Acute Effects of Overexposure: May cause eye and skin irritation.

Chronic Effects of Overexposure: Repeated or prolonged exposure may lead to skin sensitization.

Target Organs: Eyes, skin.

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

Toxicity Data: No information available in sources utilized.

BROMINATED FLAME RETARDANT

NIOSH RTECS No.: SM0894500

Acute Effects of Overexposure: Causes eye, skin, and respiratory tract irritation. May cause digestive tract irritation.

Chronic Effects of Overexposure: Adverse reproductive effects have occurred in experimental animals.

Target Organs: Eyes, skin, respiratory system, digestive system.

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

Toxicity Data: Rat-Oral LD₅₀ > 5,000 mg/kg
Rabbit-Dermal LD₅₀ > 2,000 mg/kg

Rat-Inhalation LC₅₀ > 2,550 mg/m³/2h

PROPRIETARY FILLER

NIOSH RTECS No.:

Acute Effects of Overexposure: May cause eye, skin, and respiratory and digestive tract irritation.

Chronic Effects of Overexposure: Long-term or repeated exposure may have effects on the lungs, including pneumoconiosis.

Target Organs: Respiratory system, eyes, skin, digestive system.

Carcinogenicity: ACGIH A4, IARC 3

Toxicity Data: No information available in sources utilized.

12. ECOLOGICAL INFORMATION

NO DATA AVAILABLE ON THE SPECIFIC MIXTURE.

CONTINUOUS FILAMENT GLASS FIBERS (E-GLASS)

Information not available in sources utilized.

PROPRIETARY EPOXY RESIN BLEND

Information not available in sources utilized.

BROMINATED FLAME RETARDANT

Ecotoxicity: LC₅₀(96h) 0.40 mg/l Rainbow Trout
LC₅₀(96h) 0.54 mg/l Fathead Minnow
LC₅₀(48h) 0.96 mg/l Daphnia Magna

Mobility: Low water solubility.

Persistence and Degradability: Not readily biodegradable.

Bioaccumulation Potential: Bioconcentration potential in aquatic organisms is considered moderate to high.

PROPRIETARY FILLER

Ecotoxicity: LC₅₀(24h) > 100 g/l Brachydanio Rerio

Mobility: Not soluble in water.

Persistence and Degradability: No information available in sources utilized.

Bioaccumulation Potential: No information available in sources utilized.



13. DISPOSAL CONSIDERATIONS

GENERAL: Follow all applicable local, national, provincial, territorial, and international regulations. As supplied, this material is not regulated as a hazardous waste under the US EPA Resource Conservation and Recovery Act (RCRA). 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

CANADIAN ENVIRONMENTAL PROTECTION ACT: All of the components of this product are listed on the Canadian Domestic Substances List (DSL).

EPA TOXIC SUBSTANCES CONTROL ACT (TSCA) STATUS: All of the components of this product are listed on the TSCA inventory.

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES (EINECS): All of the components of this product are listed on the EINECS inventory, are no longer polymers (NLP), or are polymer exempt.

ADDITIONAL OCCUPATIONAL EXPOSURE LIMITS (OELs). There are currently no established international OELs for Proprietary Epoxy Resin Blend. See Section 8 for OSHA, ACGIH and NIOSH OELs.

Country	CONTINUOUS FILAMENT GLASS FIBERS (based on mineral wool)	Brominated Flame Retardant	Proprietary Filler
Arab Republic of Egypt	Not Listed	Not Listed	Not Listed
Australia	Not Listed	Not Listed	2.5 mg/m ³ TWA
Austria	Not Listed	Not Listed	
Belgium	Not Listed	Not Listed	2 mg/m ³ TWA
Canada			
-Alberta	1.0 f/cc 8-hour OEL	Not Listed	2 mg/m ³ TWA Respirable Dust 4 mg/m ³ TWA Total Dust
-British Columbia	1 f/cc 8-hour TWA 5 mg/m ³ 8-hour TWA Inhalable Dust	Not Listed	2 mg/m ³ TWA Respirable Dust
-Manitoba, New Brunswick, Nova Scotia, Prince Edward Island	See ACGIH TLV	Not Listed	See ACGIH TLV
-Northwest Territory	3 f/cc 8-hour OEL 5 mg/m ³ 8-hour OEL (Total Mass)	Not Listed	3 mg/m ³ TWA Respirable Dust 6 mg/m ³ TWA Total Dust



ADDITIONAL OELs (continued)

Country	CONTINUOUS FILAMENT GLASS FIBERS (based on mineral wool)	Brominated Flame Retardant	PROPRIETARY FILLER
-Ontario	1 f/cc TWAEV 5 mg/m ³ TWAEV Inhalable Dust	Not Listed	2 mg/m ³ TWAEV Respirable Dust
-Quebec	10 mg/m ³ VEMP (8-hour OEL)	Not Listed	3 mg/m ³ VEMP Respirable Dust
-Saskatchewan	Not Listed	Not Listed	2 mg/m ³ TWA Respirable Dust
-Yukon Territory	10 mg/m ³ 8-hour OEL	Not Listed	20 mppcf TWA
Denmark	Not Listed	Not Listed	Not Listed
Finland	Not Listed	Not Listed	5 mg/m ³ TWA
France	Not Listed	Not Listed	Not Listed
Germany	Not Listed	Not Listed	Not Listed
Hungary	Not Listed	Not Listed	Not Listed
India	Not Listed	Not Listed	Not Listed
Italy	Not Listed	Not Listed	Not Listed
Japan	Not Listed	Not Listed	Not Listed
Mexico	Not Listed	Not Listed	2 mg/m ³ TWA Respirable Dust
The Netherlands	2 fibers/cm ³ MAC-TGG Respirable Dust	Not Listed	1 mg/m ³ MAC-TGG
New Zealand	Not Listed	Not Listed	Not Listed
Norway	Not Listed	Not Listed	Not Listed
The Philippines	Not Listed	Not Listed	Not Listed
Poland	Not Listed	Not Listed	Not Listed
Russia	Not Listed	10 mg/m ³ STEL	Not Listed
Sweden	Not Listed	Not Listed	Not Listed
Switzerland	Not Listed	Not Listed	2 mg/m ³ MAK-week Respirable Dust
Thailand	Not Listed	Not Listed	Not Listed
United Kingdom	Not Listed	Not Listed	1 mg/m ³ TWA Respirable Dust
Argentina, Bulgaria, Colombia, Jordan, Korea, New Zealand, Singapore, Vietnam	See ACGIH TLV	Not Listed	See ACGIH TLV



16. OTHER INFORMATION

HAZARD CLASSIFICATIONS:

X_i=Irritant

N=Dangerous to the environment

R-PHRASES:

R36/38-Irritating to eyes and skin.

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

R43-May cause sensitisation by skin contact.

R50/53-Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R51/53-Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Current MSDS Revision Date: March 16, 2015

Previous MSDS Date(s): November 18, 2008; December 6, 2005, August 1, 2004

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

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 IS420 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.