



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

MSDS Date: November 23, 2010

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

IDENTIFICATION OF PREPARATION: IS400 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
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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)	65997-17-3	266-046-0	35-60	X _i , R36/37/38
Proprietary Bisphenol A-based Epoxy Resin	Proprietary	Proprietary	10-15	X _i , R36/38-43; N, R51/53
Brominated Flame Retardant	79-94-7	201-236-9	7-13	N, R50/53
Curing Agent	Proprietary	Proprietary	5-10	X _n , R21/22
Inorganic Fillers	Proprietary	Proprietary	10-20	Not Classified
Components not Classified as Hazardous	Mixture	Mixture	20-40	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 1B – Toxic Material Causing Oral and Dermal Toxicity

Class D, Division 2B – Toxic Material Causing Eye and Skin Irritation and Skin Sensitization

EU PREPARATION CLASSIFICATION (1999/45/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. May cause skin sensitization. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. May be harmful if swallowed or absorbed through the skin.



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 eye, skin, and respiratory and digestive tract irritation. Exposure to product can produce delayed pulmonary edema. Long-term or repeated exposure to talc and amorphous silica may have effects on the lungs, including pneumoconiosis. This product contains less than one percent total residual solvents (acetone, methyl ethyl ketone, and/or 1-methoxy-2-propanol). Exposure to residual vapors may cause eye, skin and respiratory tract irritation. Breathing vapors can cause central nervous system depression. Long-term or repeated exposures may have effects upon human reproduction.

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. 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 eyes, skin, and respiratory and digestive tracts, an allergic skin reaction, headache, cough, nausea, diarrhea, drowsiness, dizziness, vomiting, shortness of breath, collapse, unconsciousness, and coma.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Carbon dioxide, alcohol-resistant 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	None Established	None Established	None Established
Tetrabromobisphenol A	None Established	None Established	None Established
2-Phenylimidazole	None Established	None Established	None Established
Silica, Amorphous	(10 mg/m ³)/(% SiO ₂ + 2) TWA, Respirable Dust, (30 mg/m ³)/(%SiO ₂ + 2) TWA, Total Dust	None Established	0.05 mg/m ³ TWA Respirable Dust
Talc	20 mppcf ⁹ 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 $\geq 3:1$.

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.

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.

EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

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:	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 as well as moist air and water. Hazardous polymerization will not occur. Avoid contact with incompatible materials. Avoid excessive dust generation.

INCOMPATIBLE MATERIALS: Strong acids, strong bases, strong oxidizers, some metallic salts, and moisture.

HAZARDOUS DECOMPOSITION: Dense smoke, acrid vapors and fumes, aliphatic and aromatic hydrocarbons of variable composition, CO_x, NO_x, hydrogen bromide, cobaltoxide. At high temperatures, fused silica will form cristobalite.

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.

TOXICOLOGICAL INFORMATION (continued)

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

PROPRIETARY EPOXY RESIN

NIOSH RTECS No.: Proprietary

Acute Effects of Overexposure: May cause eye and skin irritation. May be harmful if inhaled or ingested.

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: Rat-Oral LD₅₀ = 1,140 mg/kg

Rabbit-Skin LD₅₀ > 2,000 mg/kg

TETRABROMOBISPHENOL A

NIOSH RTECS No.: SM0894500

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

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

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

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

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

Rabbit-Skin LD₅₀ > 2,000 mg/kg

Rat-Inhalation > 2,550 mg/m³/2h

2-PHENYLIMIDAZOLE

NIOSH RTECS No.: Unlisted

Acute Effects of Overexposure: No Harmful if swallowed or absorbed through the skin. May cause eye, skin, and respiratory tract irritation.

Chronic Effects of Overexposure: No information available in sources utilized.

Target Organs: Eyes, skin, respiratory system.

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

Toxicity Data: Rabbit-Skin LD₅₀ > 200 mg/kg

SILICA, AMORPHOUS

NIOSH RTECS No.: VV7328000

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

Chronic Effects of Overexposure: May cause respiratory abnormalities and silicosis. Animal tests indicate a fibrogenic potential less than that of quartz.

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

Carcinogenicity: IARC Group 3, NIOSH-Ca

Toxicity Data: No information available in sources utilized.

TOXICOLOGICAL INFORMATION (continued)

TALC

NIOSH RTECS No.: WW2710000

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: Eyes, skin, digestive system, respiratory system.

Carcinogenicity: ACGIH A4, IARC Group 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

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 information available in sources utilized.

Persistence and Degradability: Slightly biodegradable.

Bioaccumulation Potential: No information available in sources utilized.

TETRABROMOBISPHENOL A

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.

2-PHENYLIMIDAZOLE

Ecotoxicity: No information available in sources utilized.

Mobility: Insoluble in water.

Persistence and Degradability: No information available in sources utilized.

Bioaccumulation Potential: No information available in sources utilized.

SILICA, AMORPHOUS

Ecotoxicity: No information available in sources utilized.

Mobility: Insoluble in water.

Persistence and Degradability: Not readily biodegradable.

Bioaccumulation Potential: Not expected to bioaccumulate.

TALC

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

Mobility: Insoluble 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) or are exempt from listing.

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

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.

CALIFORNIA PROPOSITION 65: None of the chemicals in this product is listed.

ADDITIONAL OCCUPATIONAL EXPOSURE LIMITS (OELs). There are currently no international OELs for the Proprietary Epoxy Resin or 2-phenylimidazole. See Section 8 for OSHA, ACGIH and NIOSH OELs.

Country	CONTINUOUS FILAMENT GLASS FIBERS (based on mineral wool)	Tetrabromo-bisphenol A	Silica, Amorphous	Talc
Australia	Not Listed	Not Listed	Not Listed	2.5 mg/m ³ TWA
Austria	Not Listed	Not Listed	Not Listed	Not Listed
Belgium	Not Listed	Not Listed	Not Listed	2 mg/m ³ TWA
Canada				
-Alberta	1.0 f/cc 8-hour OEL	Not Listed	0.1 mg/m ³ TWA Resp. 0.3 mg/m ³ TWA Total	2 mg/m ³ TWA Resp. 4 mg/m ³ TWA Total
-British Columbia	1 f/cc 8-hour TWA 5 mg/m ³ 8-hour TWA Inhalable Dust	Not Listed	Not Listed	2 mg/m ³ TWA Resp.
-Manitoba, New Brunswick, Nova Scotia, Prince Edward Island	See ACGIH TLV	See ACGIH TLV	See ACGIH TLV	See ACGIH TLV
-Northwest Territory	3 f/cc 8-hour OEL 5 mg/m ³ 8-hour OEL (Total Mass)	Not Listed	Not Listed	3 mg/m ³ TWA Resp. 6 mg/m ³ TWA Total
-Ontario	1 f/cc TWAEV 5 mg/m ³ TWAEV Inhalable Dust	Not Listed	0.1 mg/m ³ TWAEV Resp.	2 mg/m ³ TWAEV Resp.



ADDITIONAL OELs (continued)

Country	CONTINUOUS FILAMENT GLASS FIBERS (based on mineral wool)	Tetrabromo-bisphenol A	Silica, Amorphous	Talc
-Quebec	10 mg/m ³ VEMP (8-hour OEL)	Not Listed	0.1 mg/m ³ VEMP	3 mg/m ³ VEMP Resp.
-Saskatchewan	Not Listed	Not Listed	0.1 mg/m ³ TWA Resp.	2 mg/m ³ TWA Resp.
-Yukon Territory	10 mg/m ³ 8-hour OEL	Not Listed	2 mg/m ³	20 mppcf TWA
Denmark	Not Listed	Not Listed	0.1 mg/m ³ TWA Resp. Dust	Not Listed
Finland	Not Listed	Not Listed	5 mg/m ³ TWA	5 mg/m ³ TWA
France	Not Listed	Not Listed	Not Listed	Not Listed
Germany	Not Listed	Not Listed	0.3 mg/m ³ MAK Resp. 4 mg/m ³ MAK Inhalable	Not Listed
Hungary	Not Listed	Not Listed	Not Listed	Not Listed
India	Not Listed	Not Listed	Not Listed	Not Listed
Japan	Not Listed	Not Listed	Not Listed	Not Listed
Mexico	Not Listed	Not Listed	0.3 mg/m ³ TWA Resp.	2 mg/m ³ TWA Resp.
The Netherlands	2 fibers/cm ³ MAC-TGG Respirable Dust	Not Listed	Not Listed	1 mg/m ³ MAC-TGG
Norway	Not Listed	Not Listed	0.05 mg/m ³ TWA Resp. Dust	Not Listed
The Philippines	Not Listed	Not Listed	Not Listed	Not Listed
Poland	Not Listed	Not Listed	Not Listed	Not Listed
Russia	Not Listed	10 mg/m ³ STEL	1 mg/m ³ TWA 3 mg/m ³ STEL	Not Listed
Sweden	Not Listed	Not Listed	Not Listed	Not Listed
Switzerland	Not Listed	Not Listed	0.3 mg/m ³ MAK-week	2 mg/m ³ MAK-week Resp.
Turkey	Not Listed	Not Listed	Not Listed	Not Listed
United Kingdom	Not Listed	Not Listed	0.08 mg/m ³ TWA Resp. 6 mg/m ³ TWA Inhalable	1 mg/m ³ TWA Resp.
Argentina, Bulgaria, Colombia, Jordan, Korea, New Zealand, Singapore, Vietnam	See ACGIH TLV	See ACGIH TLV	See ACGIH TLV	See ACGIH TLV



16. OTHER INFORMATION

HAZARD CLASSIFICATIONS:

X_n=Harmful

X_i=Irritant

N=Dangerous to the environment

R-PHRASES:

R21/22-Harmful in contact with skin and if swallowed

R36/38-Irritating to eyes and skin

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

R43-May cause sensitization by skin contact

R50/51-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: November 23, 2010

Previous MSDS Date(s): New MSDS

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 IS400 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.