



# Informational SAFETY DATA SHEET

This i-SDS complies with REACH 1907/2006 and 2001/58/EC, GHS, OSHA 29CFR 1910.1200

## Section 1: Chemical Product and Company Identification

### MANUFACTURER'S NAME

Isola Group  
6565 West Frye Road 3100  
Chandler, Arizona 85226

### EMERGENCY TELEPHONE

INFOTRAC U.S.-Canada: 800-535-5053

Safety Data Sheet Competent Person: Eva Ho

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**REVISION DATE:** July 19, 2020

### PRODUCT NAME:

**415HR LAMINATE**

### FORMULA:

N/A (Product is an Article)

### PRODUCT USE:

Resin impregnated woven fiberglass used in the manufacture or copper-clad laminate for printed circuit boards.

## Section 2: Hazards Identification

Regulation (EC) No 1907/2006 and 29 CFR 1910.1200

### GHS Hazard Classification

Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)  
Product is an article that is **not subject to SDS requirements**

### Hazard Pictogram(s):

None

### Signal word:

None

### Hazard Statement:

None

### Precautionary Statement(s):

None

### Other Hazards:

No Data Available

## Section 3: Composition, Information on Ingredients

Product Composition	CAS No.	EC Inventory No.	Approx. %	Hazard Statements
Non-Respirable Woven Continuous Filament Glass Fiber	65997-17-3	266-046-0	30-60	None
Nonhazardous Reacted Resin Matrix	xxx-xx-xxx	-	30-60	None
Copper Foil	7440-50-8	231-159-6	10-30	None

## Section 4: First Aid Measures

### INHALATION:

Remove to fresh air. If not breathing, provide CPR (cardio pulmonary resuscitation). Get immediate medical attention.

### SKIN CONTACT:

Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing.

### EYE CONTACT:

Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention if irritation persists.

### INGESTION:

Not expected to be a significant route of exposure. If ingestion occurs, get immediate medical attention.



## Section 5: Fire-fighting Measures

FLASH POINT:	Not applicable
FLAMMABLE LIMITS IN AIR (% by vol):	Not applicable
EXTINGUISHING MEDIA:	Foam, Dry Chemical Powder, or Carbon Dioxide
SPECIAL FIREFIGHTING PROCEDURES:	None
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Emits toxic fumes under fire conditions.

## Section 6: Accidental Release Measures

### ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Wear proper protective equipment as specified in Section 8: Exposure Controls/Personal Protection  
If material is released or spilled, sweep, or vacuum material and place in closed containers for subsequent reuse or disposal.

DISPOSAL METHOD: disposal should be made in accordance with federal, state and local regulations.

## Section 7: Handling and Storage

### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

HANDLING: Cured composite parts and resins are solid articles and do not pose a health hazard as shipped.

STORAGE: Store at room temperature. Avoid contact with incompatible materials.

INFORMATION ON EMPTIED CONTAINER: Not applicable

SPECIFIC USES: Resin impregnated woven fiberglass used in the manufacture of copper-clad laminate for printed circuit boards.

## Section 8: Exposure Controls/Personal Protection

VENTILATION:	Provide general ventilation and local exhaust ventilation to meet TLV requirements of individual ingredients (see Section 2) and to control dusting conditions. If cutting or rimming with power equipment, dust collectors and local ventilation should be used. Avoid unnecessary exposure to dust and handle with care. Keep work area clean of dust and fibers by using an industrial vacuum cleaner with high efficiency filter or wetting down area with water. Never use compressed air and avoid dry sweeping.
EYE PROTECTION:	Wear safety glasses with side shields. Always provide good general, mechanical room ventilation where this chemical/material is used.
RESPIRATORY PROTECTION:	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or the CEN European Standards (EU). Use a NIOSH/MSHA or European Standard (EN) approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
PROTECTIVE GLOVES:	Recommend use of gloves.
EYE PROTECTION:	Recommend eye protection using safety glasses, face shield or goggles.
SKIN PROTECTION:	Suitable protective clothing to prevent skin contact
WORK/HYGIENE PRACTICES:	Provide good personal hygiene after handling. Avoid contact with eyes. Wash hands after handling.
EXPOSURE LIMITS	Reference Section 2
OTHER EQUIPMENT:	Make safety shower, eyewash stations, and hand washing equipment available in the work area.



## Section 9: Physical and Chemical Properties

APPEARANCE - COLOR: Reinforced resin / copper laminate  
 PHYSICAL STATE: Solid  
 ODOR: Odorless

### PRODUCT CRITERIA

	PRODUCT CRITERIA
ODOR THRESHOLD	Not Available for product
PH	Not Available for product
FLASH POINT:	Not Available for product
LOWER EXPLOSIVE LIMIT; UPPER EXPLOSIVE LIMIT	Not Available for product
FLAMMABILITY (Solid, gas)	Not Available for product
EXPLOSIVE PROPERTIES	Not Available for product
OXIDIZING PROPERTIES	Not Available for product
SPECIFIC GRAVITY (@25 °C):	Not Available for product
EVAPORATION RATE:	Not Available for product
% VOLATILE by VOLUME	Not Available for product
PARTITION COEFFICIENT	Not Available for product
AUTO IGNITION TEMPERATURE	Not Available for product
DECOMPOSITION TEMPERATURE	Not Available for product
BOILING POINT:	Not Available for product
MELTING POINT:	Not Available for product
VAPOR PRESSURE	Not Available for product
VAPOR DENSITY (AIR = 1)	Not Available for product
SOLUBILITY IN WATER:	Insoluble
WATER SOLUBILITY IN THE SOLVENT	Not Available for product
FREEZING POINT:	Not Available for product
VISCOSITY	Not Available for product
VOC CONTENT	Not Available for product
VOLATILITY %	Not Available for product

## Section 10: Stability and Reactivity

STABILITY: Stable  
 CONDITIONS TO AVOID: Avoid exposure to heat, flames, sparks and other ignition sources. Hazardous polymerization will not occur. Avoid contact with incompatible materials. Avoid dust generation.  
 HAZARDOUS DECOMPOSITION PRODUCTS: Dense smoke, acrid vapors and fumes, aliphatic and aromatic hydrocarbons of variable composition, silicon dioxide, CO<sub>x</sub>, NO<sub>x</sub>.  
 HAZARDOUS POLYMERIZATION: Will not occur  
 INCOMPATIBLE MATERIALS: Strong acids, strong bases, strong oxidizers, amines, and some metallic salts.  
 EXOTHERMIC REACTION FIGHTING PROCEDURES: Dissipate heat by spreading material apart and dousing with water. Contain vapors with local exhaust.

## Section 11: Toxicological Information

There is no toxicological information available for the product mixture.

MATERIAL	EXPOSURE LIMITS*		
	OSHA PEL <sup>(a)</sup>	ACGIH TLV <sup>(b)</sup>	NIOSH REL <sup>(c)</sup>
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 Fraction <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</sup> TWA <sup>(e)</sup> Total Fibrous Glass
Copper	0.1 mg/m <sup>3(d)</sup> TWA <sup>(e)</sup> Fume 1 mg/m <sup>3(d)</sup> TWA <sup>(e)</sup> Dust/Mist	0.2 mg/m <sup>3(d)</sup> TWA <sup>(e)</sup> Fume 1 mg/m <sup>3(d)</sup> TWA <sup>(e)</sup> Dust/Mist	0.1 mg/m <sup>3(d)</sup> TWA <sup>(e)</sup> Fume 1 mg/m <sup>3(d)</sup> TWA <sup>(e)</sup> Dust/Mist



(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  $\geq 3:1$ .

## Section 12: Ecological Information

BIODEGRADATION:	No Information available	
BIOACCUMULATION:	No Information available	
ECO TOXICITY:	LC <sub>50</sub> (96h) 52-150 µg/l Rainbow Trout	Copper
	LC <sub>50</sub> (48h) 24-101 µg/l Daphnia Magna	Copper
	LC <sub>50</sub> (72h) 62.3 µg/l Green Algae	Copper
MOBILITY:	No Information available	

Note: all of the ingredients have been tested for Ecotoxicity.

## Section 13: Disposal Considerations

### WASTE FROM RESIDUES / UNUSED PRODUCTS:

Follow the waste disposal requirements of your country, state, or local authorities.

### CONTAMINATED PACKAGING:

Recommend contaminated packaging material should be disposed of as stated above for residues and unused product.

RINSATE: Do not dispose of rinse water containing product in a sanitary sewer system or storm water drainage system.

## Section 14: Transport Information

DOT TRANSPORT: Not Regulated

ADR = International Carriage of Dangerous Goods by Road Not Regulated

RAIL TRANSPORT: Not Regulated

SEA TRANSPORT: IMDG Not Regulated

AIR TRANSPORT: IATA/ICAO Not Regulated

## Section 15: Regulatory Information

### OSHA HAZARD COMMUNICATION STANDARD

This product is a not "Hazardous Chemical" as defined by 29 CFR 1910.1200.

### TOXIC SUBSTANCES CONTROL ACT (TSCA) STATUS:

This product is in compliance with all rules, regulations, and orders of TSCA.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA) TITLE III (EPCRA) SECTIONS 311 AND 312: None

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA) TITLE III (EPCRA) SECTION 313  
SUPPLIER NOTIFICATION: None

### CALIFORNIA PROPOSITION 65:

This regulation requires a warning for California Proposition 65 chemical(s) under the statute.

The California proposition 65 chemical(s) contained in this product are: None.

### CANADA:

This MSDS contains all of the information required by the Controlled Products Regulations (CPR).



#### WHMIS-INFORMATION:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR), SOR/88-66. The classes of controlled products listed in the CPR, Section 32, Part IV, have been reviewed and based on Professional Judgment this product has been determined to not be WHMIS controlled.

#### EUROPEAN UNION:

This product has been reviewed for compliance with the following European Community Directives: REACH 1907/2006; Regulation (EC) No 1272/2008 on classification, labeling and packaging (CLP) of substances and mixtures.

## **Section 16: Other Information**

Revision Comments: Initial version (August 1, 2004)  
Revision Number: 5 (July 19, 2020)  
Previous Revisions: April 23, 2018 (4); March 16, 2015 (3); November 18, 2008 (2); December 6, 2005(1)  
Information Sources: REACH, OSHA 29CFR 1910.1200, Manufacturer SDSs.

#### FOR INDUSTRIAL USE ONLY

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