



# SAFETY DATA SHEET

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

### EMERGENCY TELEPHONE

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

Safety Data Sheet Competent Person:

Information: 480-812-2561  
Neil Smith: neil.smith@isola-group.com

**REVISION DATE:** October 3, 2016

### PRODUCT NAME:

**FR408 LAMINATE**

### FORMULA:

N/A (Product is an Article)

### PRODUCT USE:

Resin impregnated woven fiberglass used in the manufacture of 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)

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 artificial respiration. Get medical attention if necessary and treat symptomatically.

**SKIN CONTACT:**

Wash skin with soap and water. Get medical attention if irritation persists.

**EYE CONTACT:**

Flush eyes with plenty of water as a precaution. If persistent irritation develops, seek medical attention.

**INGESTION:**

Rinse mouth thoroughly with water. Never give anything to an unconscious person. Get medical attention if symptoms occur.

Most important symptoms and effects, both acute and delayed:

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of any immediate medical attention and special treatment needed:

No Data Available. Treat symptomatically.



## 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:	Wear self-contained breathing apparatus for firefighting if necessary.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Thermal decomposition or combustion may give off toxic fumes, gases and vapors.

## Section 6: Accidental Release Measures

### PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

Prevent dust formation. Ensure adequate ventilation and isolate area. Wear proper protective equipment as specified in Section 8. Do not breathe dust or fumes/vapor from heated product.

### ENVIRONMENTAL PRECAUTIONS:

No special environmental precautions required.

### METHODS AND MATERIAL FOR CONTAINMENT AND CLEANUP:

Wear proper protective equipment as specified in Section 8: Exposure Controls/Personal Protection.  
If material is released or spilled, sweep, shovel 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.

REFERENCE TO OTHER SECTIONS: See Sections 8 and 13.

## Section 7: Handling and Storage

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

Store in a cool dry place. Avoid excessive heat and ignition sources. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.

INFORMATION ON EMPTIED CONTAINER: Not applicable

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

## Section 8: Exposure Controls/Personal Protection

### EXPOSURE CONTROLS:

#### VENTILATION:

Provide general ventilation and local exhaust ventilation to meet TLV requirements of individual ingredients and to control dusting conditions. If cutting or rimming with power equipment then 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. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### RESPIRATORY PROTECTION:

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use a NIOSH/MSHA or European Standard (EN) approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or the CEN European Standards (EU).



**PROTECTIVE GLOVES:**

Glove use is recommended. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with glove contamination. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**SKIN PROTECTION:**

Suitable protective clothing to prevent skin contact is recommended.

**WORK/HYGIENE PRACTICES:**

Provide good personal hygiene after handling. Avoid contact with eyes. Wash hands after handling.

**OTHER EQUIPMENT:**

Make safety shower, eyewash stations, and hand washing equipment available in the work area.

**CONTROL PARAMETERS:**

Component	CAS No.	Value	Control Parameters	Basis
Copper Foil	7440-50-8	TWA	0.1 mg/m <sup>3</sup> Fume 1 mg/m <sup>3</sup> Dust/Mist	OSHA PEL
		TWA	0.1 mg/m <sup>3</sup> Fume 1 mg/m <sup>3</sup> Dust/Mist	NIOSH REL
		TWA	0.2 mg/m <sup>3</sup> Fume 1 mg/m <sup>3</sup> Dust/Mist	ACGIH TLV

## Section 9: Physical and Chemical Properties

APPEARANCE - COLOR:

Copper colored

PHYSICAL STATE:

Solid

ODOR:

None

**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

**OTHER INFORMATION**

None



## Section 10: Stability and Reactivity

REACTIVITY: Stable under normal storage conditions.

CHEMICAL STABILITY: Stable under recommended storage conditions

POSSIBILITY OF HAZARDOUS REACTIONS: No data available.

CONDITIONS TO AVOID: Exposure to excessive heat, flames, sparks and other ignition sources as well as moist air and water. Avoid incompatible materials. Avoid excessive dust generation.

INCOMPATIBLE MATERIALS: Avoid contact with strong oxidizing agents, strong acids, strong bases, mercaptans and amines.

HAZARDOUS DECOMPOSITION PRODUCTS: Dense smoke, acrid vapors and fumes, aliphatic and aromatic hydrocarbons of variable composition, CO<sub>x</sub>, NO<sub>x</sub>. Decomposition products depend on temperature, air supply and other materials that may be present. Uncontrolled exothermic reactions of epoxy resins release phenolics, carbon monoxide and water.

## Section 11: Toxicological Information

There is no toxicological information available for the product (article) itself.

## Section 12: Ecological Information

There is no ecological information available for the product (article) itself.

## Section 13: Disposal Considerations

Dispose according to local, state, and national regulations.

## 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; Directive 1999/45/EC, Regulation (EC) No 1272/2008 on classification, labeling and packaging (CLP) of substances and mixtures.

WGK: 0 (German Federal Water Management Act) (Water Hazard Class)

## Section 16: Other Information

Revision Comments: Initial version (November 30, 2001)  
Revision Number: 5 (October 3, 2016)  
Previous Revisions: January 4, 2006 (1); February 2, 2009 (2); August 23, 2010 (3); September 27, 2013 (4)  
Information Sources: REACH, OSHA 29CFR 1910.1200, Manufacturer SDSs.

**FOR INDUSTRIAL USE ONLY**

**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 FR406 Laminate 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.