



SAFETY DATA SHEET

This SDS complies with EU ECHA, REACH 1907/2006, GHS

Section 1: Chemical Product and Company Identification

1.1 Product identifiers

PRODUCT NAMES: **TERRAGREEN 400G LAMINATE**
FORMULA: N/A (Product is an Article)

1.2 Relevant identified uses of the substance or mixture and uses advised against

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

1.3 Details of the supplier of the safety data sheet

Isola Group
6565 West Frye Road
Chandler, Arizona 85226

Information:(852)2485 7761

Safety Data Sheet Competent Person: Eva Ho

eva.ho@isola-group.com

1.4 Emergency telephone number

INFOTRAC 800-535-5053

Section 2: Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 (GHS/CLP)

Not classified. This product meets the definition for an Article under Reach regulation (REACH REGULATION (EC) No 1907/2006) and is not subject to classification under CLP regulation (REGULATION (EC) No 1272/2008).

“**Article**” means an object which during production is given a special shape, surface, or design which determines its function to a greater degree than does its chemical composition.”

Additional information Reference Section 15

2.2 Label element

Not classified as a hazardous substance or mixture.

2.3 Other hazards: None

Section 3: Composition / Information on Ingredients

PRODUCT COMPOSITION	APPROX %	CAS NO.	EC NUMBER	Classifications	
Copper Foil	10 - 30	7440-50-8	213-159-6	Not classified	N/A
Non-Respirable Woven Continuous Filament Glass Fiber	25 - 50	65997-17-3	266-046-0	Not classified	N/A
Reacted Blended Resin Matrix	25 - 50	-----	-----	-----	-----
Proprietary Flame Retardant	10 - 15	Proprietary	Proprietary	Not classified	N/A
Inorganic Filler	10 - 15	Proprietary	Proprietary	Not classified	N/A



Section 4: First Aid Measures

4.1 Description of 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.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms/Injuries after Inhalation	Not applicable
Symptoms/Injuries after Skin Contact	Not applicable
Symptoms/Injuries after Eye Contact	Not applicable
Symptoms/Injuries after Ingestion	Not applicable

4.3 Indication of any immediate medical attention and special treatment needed

No data available. Treat symptomatically.

Section 5: Fire-fighting Measures

5.1 Suitable extinguishing media	Use foam, dry chemical, or carbon dioxide.
5.2 Special hazards arising from the substance or mixture	No data available.
5.3 Protective actions fire-fighters	Wear standard protective equipment and self-contained breathing apparatus for firefighting if necessary.
5.4 Further information	Thermal decomposition or combustion may give off toxic fumes, gases and vapors.

Section 6: Accidental Release Measures

6.1 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.

6.2 Environmental precautions

No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up

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.

6.4 Reference to other Sections

For personal protection reference section 8. For disposal reference section 13.

Section 7: Handling and Storage

7.1 Precautions for safe handling

No special precautions.
Wash hands after handling this material.
For precautions see section 2.

7.2 Conditions for safe storage, including any incompatibilities

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.



7.3 Specific uses

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

Section 8: Exposure Controls/Personal Protection

8.1 Control Parameters

Contains no substances with occupational exposure limit values.

8.2 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 trimming 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.
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.
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).
SKIN PROTECTION:	Suitable protective clothing to prevent skin contact is recommended.
WORK/HYGIENE PRACTICES:	Wash hands after handling.
OTHER EQUIPMENT:	Make safety shower, eyewash stations, and hand washing equipment available in the work area.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:

	PRODUCT CRITERIA
APPEARANCE - COLOR	Tan to Brown
PHYSICAL STAT	Solid
ODOR	Odorless
ODOR THRESHOLD	Data not available
PH	Data not available
MELTING POINT/FREEZING POINT	Data not available
INITIAL BOILING POINT AND BOILING RANGE	Data not available
FLASH POINT	Data not available
EVAPORATION RATE	Data not available
FLAMMABILITY (Solid, gas)	Data not available
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS	Data not available
VAPOR PRESSURE	Data not available
VAPOR DENSITY (AIR = 1)	Data not available
RELATIVE DENSITY (@25°C)	Data not available
SOLUBILITY(IES)	Insoluble
OXIDIZING PROPERTIES	Data not available
PARTITION COEFFICIENT: n-octanol/water	Data not available
AUTO IGNITION TEMPERATURE	Data not available
DECOMPOSITION TEMPERATURE	Data not available
VISCOSITY	Data not available
EXPLOSIVE PROPERTIES	Data not available



9.2 Other information: None

Section 10: Stability and Reactivity

10.1 Reactivity:	Stable under normal storage conditions.
10.2 Chemical Stability:	Stable under recommended storage conditions.
10.3 Possibility of Hazardous Reactions:	No data available.
10.4 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.
10.5 Incompatibility (Materials to Avoid):	Avoid contact with strong oxidizing agents, strong acids, strong bases, mercaptans, and amines.
10.6 Hazardous Decomposition Products:	Dense smoke, acid vapors and fumes, aliphatic and aromatic hydrocarbons of variable composition, CO _x , NO _x . Decomposition products depend on temperature, air supply, and other materials that may be present.

Section 11: Toxicological Information

11.1 Information on toxicological effects:
There is no toxicological information available for the product mixture.

GHS Required Criteria	Toxicity Criteria	Toxicity Information	Comments	Chemical Constituent
Acute Toxicity	ATE LD50 (Oral/Rat):	mg/kg	Not applicable	Product
	ATE LD50 (Dermal/Rabbit):	mg/kg	Not applicable	Product
	ATE LC50 (Inhalation/Rat):	mg/L	Not applicable	Product
	LD50 (Oral/Rat):	mg/kg	Not applicable	Product
	LD50 (Dermal/Rabbit):	mg/kg	Not applicable	Product
LC50 (Inhalation/Rat):	mg/L	Not applicable	Product	
Skin Corrosion/Irritation		Data not available		
Serious Eye Damage / Eye Irritation		Data not available		
		Data not available		
Respiratory or Skin Sensitization		Data not available		
Germ Cell Mutagenicity		Not Listed		
Carcinogenicity	NTP	Not Listed		
	IARC	Not Listed		
	OSHA	Data not available		
		Data not available		
Reproductive Toxicity		Data not available		
STOT -- Single Exposure		Data not available		
STOT -- Repeated Exposure		Data not available		
Aspiration Hazard		Data not available		
Ames test		Data not available		

STOT = Specific Target Organ Toxicity ATE: Acute Toxicity Estimate calculation

Section 12: Ecological Information

12.1 Toxicity:	Data not available
12.2 Persistence and degradability:	Data not available
12.3 Bioaccumulative potential	Data not available
12.4 Mobility in soil:	Data not available
12.5 PBT and vPvB assessment:	Data not available
12.6 Other adverse effects:	Data not available

Section 13: Disposal Considerations

13.1:

Waste from residues/unused products: Follow the waste disposal requirements of your country, state, or local authorities.

Contaminated packaging: Not applicable

Rinsate: Not applicable.

Revision Date: June 4, 2020



Section 14: Transport Information

14.1 – 14.5:

<u>DOT TRANSPORT:</u>		Not Regulated
<u>ADR = International Carriage of Dangerous Goods by Road</u>		Not Regulated
<u>SEA TRANSPORT:</u>	IMDG	Not Regulated
<u>AIR TRANSPORT:</u>	IATA/ICAO	Not Regulated

14.6 Special precautions for user: Not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code: Not Applicable

Section 15: Regulatory Information

15.1 Safety, health, and environmental regulations / legislation specific for the substance or mixture

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.

Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer (OJ L 286, 31.10.2009, p. 1). **Not applicable**

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC (OJ L 158, 30.4.2004, p. 7). **Not applicable**

Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals (OJ L 201, 27.7.2012, p. 60). **Not applicable**

EU Substances of Very High Concern (SVHC): **This product does not contain any chemicals listed as SVHCs.**

TAIWAN GHS:

This SDS is in compliance with CNS 15030 Classification and Labeling of Chemicals.
Regulation of Labeling and Hazard Communication of Hazardous Chemicals

S. KOREA GHS:

This SDS is in compliance with MoEL's Public Notice No. 2016-19 - The Standard for Classification Labeling of Chemical Substance and Material Safety Data Sheet

SINGAPORE GHS:

This SDS is in compliance with the Work Safety and Health Act;

SS 586 Specification for hazard communication for hazardous chemicals and dangerous goods, which consists of the following three parts:

Part 1 : Transport and storage of dangerous goods,

Part 2 : Globally harmonized system of classification and labelling of chemicals - Singapore's adaptations, and

Part 3 : Preparation of safety data sheets (SDS).

CHINA GHS:

This SDS is in compliance with GB/T 16483-2008 Safety data sheet for chemical products: Content and order of sections;
GB/T 17519-2013 Guidance on the compilation of safety data sheet for chemical products;

PHILIPPINES GHS:

This SDS is in compliance with: The Environmental Management Bureau DENR GHS Department Administrative Order (DAO) for the GHS implementation of industrial chemicals in March 2011.

All chemical importers, manufacturers, suppliers and distributors shall submit 16-sections SDS and labels when securing for permits, licenses, clearances and certification using the GHS format together with a notarized covering letter.



VIETNAM GHS:

This SDS is in compliance with: GHS classification Aligning with Decree 113/2017/ND-CP, Circular 32/2017/ND-CP permits companies to follow GHS classification and labeling based on the 2nd edition and later.

MALAYSIA GHS:

This SDS is in compliance with: the third revision of GHS in 2008 when the Department of Health and Safety (DoHS) implemented the Malaysian Standard on GHS-Specification for Classification, Labelling and Formulation of Safety Data Sheets for Chemical Products (MS1804:2008). This was followed by the Occupational Safety and Health (Classification, Labelling and Safety Data Sheet for Hazardous Chemicals) Regulation 2013, known as CLASS 2013.

All chemical importers, manufacturers, suppliers and distributors shall submit 16-sections SDS and labels when securing for permits, licenses, clearances and certification using the GHS format together with a notarized covering letter.

THAILAND GHS:

This SDS is in compliance with: the third National Strategic Plan for Chemicals Management 2007-2011 which implement GHS. The Ministry of Industry, which oversees GHS implementation, brought Hazard Classification and Communication System for Hazardous Substances BE 2555 into force in March 2012. Based on the third version of GHS.

JAPAN GHS:

This SDS is in compliance with: 16 sections are required to be displayed on Japanese SDS (JIS Z 7253 section 5.4) and are in accordance with UN GHS section 1.2 (Rev. 4). Relevant information is to be entered for each of the 16 headings. If this information is unavailable, the reason should be stated. A change of the term "MSDS" to the shortened "safety data sheet" ("SDS") is stated in JIS Z 7253. No heading should be left blank. However, heading 16 "Other information" may be blank.

INDIA GHS:

This SDS is in compliance with: India has not officially adopted GHS for chemicals yet. However, standard 16-section GHS compliant safety data sheets

15.2 Chemical Safety assessment: Not applicable

Section 16: Other Information

Creation date:	May 8, 2020
Initial issue date:	June 4, 2020
Revision Number:	0
Revision explanation:	Initial development
Information Sources:	ECHA Guidance on the compilation of safety data sheets Version 3.1 November 2015. ECHA Compilation of safety data sheets, Version 2.0, December 2015. ECHA Guidance on requirements for substances in articles June 2017 Version 4.0. ECHA, REACH

Disclaimer:

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