



PRODUCT SAFETY INFORMATION SHEET

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

TRADE NAME: RO4000® Series Laminates
CHEMICAL FAMILY: Thermoset Composite Materials
HMIS RATING: H 1 F 1 R 0
USE OF ARTICLE: Printed Circuit Boards
DATE ISSUED: 02/19/2018
COMPANY/UNDERTAKING IDENTIFICATION: Rogers Corporation
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2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE MATERIAL: NE
LABELING REQUIREMENTS: NE
EFFECTS OF OVEREXPOSURE: None anticipated with normal handling. Machining may create dust. Processing material at temperatures exceeding decomposition temperature may release toxic fumes.
INHALATION: Dusts may cause respiratory irritation. Exposure to copper fume may cause symptoms of Metal or Polymer Fume Fever. This is characterized by flu like symptoms (fever, chills, muscle aches) that last about 24 hours.
EYE CONTACT: Dust may cause irritation. Flush eyes with water and seek medical attention if necessary.
SKIN CONTACT: Dust may cause mechanical irritation.
INGESTION: None known.
CHRONIC: IARC has listed Glass filament, continuous as Group 3 (Not classifiable as to its carcinogenicity to humans).

3. COMPOSITION/INFORMATION ON INGREDIENTS

This material is produced as an "article" as defined in 20 CFR 1910.1200 and REGULATION (EC) N° 1907/2006 is therefore exempt from the Hazard Communication Standard and REACH. Since this material does not release and will not result in exposure to a hazardous chemical under normal conditions of use, no Safety Data Sheet is required.

<u>Chemical Name</u>	<u>CAS No.</u>	<u>EINECS /ELINCS</u>	<u>%</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>EU Classification</u>
Fused Silica	60676-86-0	262-373-8	Varies	5 mg/m ³ (Resp. Dust)	3 mg/m ³ (Resp. Dust)	Not Classified Under 67/548/EEC

Continuous Filament Fiber Glass	65997-17-3	266-046-0	Varies	5 mg/m ³ (Resp. Dust)	1 f/cc	Not Classified Under 67/548/EEC
Copper	7440-50-8	231-159-6	Varies	1 mg/m ³ (dust & mist)	1 mg/m ³ (dust & mist)	Not Classified Under 67/548/EEC

4. FIRST-AID MEASURES

INHALATION:	Remove to fresh air. Obtain medical attention if symptoms persist.
EYE CONTACT:	Flush eyes with large amounts of water for 15 to 20 minutes. Obtain medical attention if symptoms persist.
SKIN CONTACT:	Immediately take off all contaminated clothing and flush area with water for 15 to 20 minutes. Obtain medical attention if symptoms persist.
INGESTION:	NA

5. FIRE-FIGHTING MEASURES

FLASH POINT:	NE °C (°F)	Flammable Limits: NE												
AUTOIGNITION TEMPERATURE:	NE °C (°F)													
EXTINGUISHING MEDIA:	<table border="0"> <tr> <td><u>X</u></td> <td>Water Spray</td> <td><u>X</u></td> <td>Foam</td> <td><u>X</u></td> <td>CO₂</td> </tr> <tr> <td><u>X</u></td> <td>Dry Chemical</td> <td><u>X</u></td> <td>Other –</td> <td></td> <td></td> </tr> </table>	<u>X</u>	Water Spray	<u>X</u>	Foam	<u>X</u>	CO ₂	<u>X</u>	Dry Chemical	<u>X</u>	Other –			
<u>X</u>	Water Spray	<u>X</u>	Foam	<u>X</u>	CO ₂									
<u>X</u>	Dry Chemical	<u>X</u>	Other –											
SPECIAL FIRE FIGHTING PROCEDURES:	Decomposition in a fire may produce toxic fumes. Firefighters should be equipped with self-contained breathing apparatus and turnout gear.													
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None known.													

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:	In case of fire toxic fumes are emitted. Wear suitable protective equipment. Do not breathe dust. Eliminate sources of ignition. Avoid contact with skin and eyes.
ENVIRONMENTAL PRECAUTIONS:	Prevent from entering sewer system, surface water or soil.
CLEANING METHODS:	Sweep or shovel into appropriate container for disposal. Avoid creation of nuisance dust.

7. HANDLING AND STORAGE

HANDLING:	Wear suitable protective equipment, refer to Section 8.
STORAGE:	Keep in a cool, well-ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION:	None needed under normal conditions. If mechanical ventilation is absent or inadequate to maintain exposure levels below those listed in Section 2, a respirator meeting NIOSH requirements should be used. A qualified individual should evaluate each situation.
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VENTILATION

LOCAL:	Recommended for all industrial operations.
GENERAL:	Recommended for all industrial operations.
<u>PERSONAL PROTECTION</u>	
HAND:	Gloves to avoid skin contact if desired.
EYE:	Safety glasses with side-shields are recommended in all industrial operations
SKIN:	None required.
OTHER:	Safety shower/eyewash in the area.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	White Board Clad with Copper
ODOR:	None
PHYSICAL STATE:	Solid
BOILING POINT:	NA
MELTING POINT:	NA
FREEZING POINT:	NA
FLASH POINT:	NA
WATER SOLUBILITY:	NA
VAPOR DENSITY:	NA
VAPOR PRESSURE:	NA
SPECIFIC GRAVITY:	NA (Water = 1)
PARTITION COEFFICIENT:	NA
EVAPORATION RATE:	NA
RELATIVE DENSITY:	NA
VISCOSITY:	NA
AUTO-IGNITION TEMPERATURE:	NA
DECOMPOSITION TEMPERATURE:	NA
PH:	NA
FLAMMABILITY:	NA

10. STABILITY AND REACTIVITY

STABILITY	Stable
CONDITIONS TO AVOID:	NE
MATERIALS TO AVOID:	NE
HAZARDOUS POLYMERIZATION:	Does not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	Decomposition may emit hydrogen bromide, oxides of carbon, acrolein, halogenated compounds, ketones, aldehydes, methane, and methanol.

11. TOXICOLOGICAL INFORMATION

CARCINOGENIC STATUS:	IARC has listed Glass filament, continuous as Group 3 (Not classifiable as to its carcinogenicity to humans).
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12. ECOLOGICAL INFORMATION

ECOTOXICITY:	NA
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13. DISPOSAL CONSIDERATION

PHYSICAL/CHEMICAL PROPERTIES AFFECTING DISPOSAL:	None
ENVIRONMENTAL TOXICITY DATA:	NA
WASTE DISPOSAL METHOD:	Dispose of in accordance with applicable federal, state, provincial, and local laws and regulations.

14. TRANSPORT INFORMATION

UN NUMBER: Not Regulated
UN PROPER SHIPPING NAME: Not Regulated
HAZARD CLASS (ES): Not Regulated
PACKING GROUP: Not Regulated
ENVIRONMENTAL HAZARDS: NE

15. REGULATORY INFORMATION

INTERNATIONAL REGULATIONS:
Canadian (DSL/NDSL): Article - exempt
Australian (ACIS): Article - exempt
Korea (KECI): Article - exempt
Japan (ENCS, MITI): Article - exempt
China (IECSC): Article – exempt.
EU Directive 2011/65/EC (RoHS): Does not contain any intentionally added substances mentioned by the RoHS directive.

European:
Symbol: Not classified according to directive 1999/45/EC & 2001/60/EC (dangerous preparations).

R-Phase(s): NA
S-Phase(s): NA
TSCA: All materials are listed or exempt from TSCA listing.
(*Toxic Substances Control Act*):
CERCLA: NA
(*Comprehensive Emergency Response, Compensation, and Liability Act*):
SARA TITLE III: NA
(*Superfund Amendments and Reauthorization Act*):
311/312 HAZARD CATEGORIES: None

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR 372:

<u>CAS #</u>	<u>CHEMICAL NAME</u>	<u>PERCENT BY WEIGHT</u>
7440-50-4	Copper	Varies

16. OTHER INFORMATION

NA = Not Applicable
NE = Not Established
NC = Not Classified

FILE: 99038-RO4000 Series Laminates-02192018

PREPARED BY: Curtis Kempton
REVIEWED BY: Michal Werbecki
REVIEWED BY: EHS Department

Date Prepared: 03/13/2014

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