ROGERS CORPORATION

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PRODUCT SAFETY INFORMATION SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME:	RT/duroid® 6035HTC High Frequency Material
CHEMICAL FAMILY:	Fluoropolymer Composite Materials
HMIS RATING:	H 1 F 1 R 0
USE OF MATERIAL	Printed Circuit Boards
EMERGENCY PHONE:	860-774-9605 (Monday – Friday 8 a.m. – 5 p.m. EST)

2. 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.

Chemical Name	CAS No.	EINECS /ELINCS	OSHA PEL	ACGIH TLV	EU Classification
DIELECTRIC					
Fused Silica	60676-86-0	262-373-8	80 mg/m^3 %SiO_2	NE	NC according to 67/548/EEC
Titanium Dioxide	13463-67-7	236-675-5	15 mg/m^3 (Total Dust)	10 mg/m^3	NC according to 67/548/EEC
Polytetrafluorethylene (PTFE)	9002-84-0	NE	NE	NE	NC according to 67/548/EEC
Boron Nitride	10043-11-5	NE	15 mg/m^3 (Total Dust)	10 mg/m^3	NC according to 67/548/EEC
CLADDING (Copper, Aluminum or Brass)					
Copper	7440-50-8	231-159-6	1 mg/m^3	1 mg/m^3	NC according to 67/548/EEC

The material contains no other hazardous ingredients as defined in OSHA's Hazard Communication Standard 29 CFR 1910.1200 or EU directive 1999/45/EC, and do not present a health or environmental hazard according to directive 67/548/EC.

3. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE MATERIAL:	NA
LABELING REQUIREMENTS:	NA

EFFECTS OF OVEREXPOSURE:	None anticipated with normal handling. Machining may cause dusting. Processing material at temperatures exceeding decomposition temperature may release toxic fumes.
INHALATION:	Dusts may cause respiratory irritation. Exposure to copper fume or PTFE decomposition products 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 mechanical irritation.
SKIN CONTACT:	Dust may cause mechanical irritation.
INGESTION:	None known.
CHRONIC:	None known.

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:	Wash area of contact thoroughly with soap and water. Do not rub or scratch. Obtain medical attention if symptoms persist.
INGESTION:	Obtain medical attention if symptoms persist.

5. FIRE-FIGHTING MEASURES

FLASH POINT: NA Flammable Limits: LEL NA UEL NA

AUTOIGNITION TEMPERATURE: NA

EXTINGUISHING MEDIA:

X	Water Spray	X	Foam	X	CO_2
X	Dry Chemical		Other –		

SPECIAL FIRE FIGHTING PROCEDURES:	Firefighters should be equipped with self-contained breathing apparatus and turnout gear.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None

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 spills into appropriate container for disposal. Avoid creating airborne dust.

7. HANDLING AND STORAGE

HANDLING:	Wear suitable protective equipment (refer to Section 8). Wash hands with soap and water after handling.
STORAGE:	Keep container tightly closed in a cool, well-ventilated area.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

RESPIRATORY PROTECTION: If mechanical ventilation is absent or inadequate to maintain exposure levels below those listed in Section 2 use NIOSH/MSHA approved respirators.

VENTILATION

LOCAL: Recommended in operations that create airborne dust or where material is heated above 500°F. Local exhaust is recommended in all heating operations where fumes are emitted. Follow good industrial hygiene practice.

GENERAL: Recommended as with all industrial operations.

PERSONAL PROTECTION

HAND: Cut resistant gloves.

EYE: Safety glasses with side shields. Do not wear contact lenses.

OTHER: Safety shower/eyewash in the area if possible exposure to tissue. Do not smoke or keep smoking materials in areas where material is machined or excessive dusting occurs. Wash thoroughly before eating or smoking.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Gray or White Sheet 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:	0
RELATIVE DENSITY:	NA
VISCOSITY:	NA
AUTO-IGNITION TEMPERATURE:	NA
DECOMPOSITION TEMPERATURE:	NA
PH:	NA
FLAMMABILITY:	NA

10. STABILITY AND REACTIVITY

STABLE X UNSTABLE ____

PTFE begins to decompose very slowly above 500°F. Decomposition increases rapidly above 750°F and processing at these temperatures for prolonged periods of time is not recommended.

MATERIALS TO AVOID: None under normal usage.

HAZARDOUS POLYMERIZATION: ____ May Occur X Does Not Occur

HAZARDOUS DECOMPOSITION PRODUCTS: Above 250°C material can evolve toxic gaseous materials such as:

- Tetrafluoroethylene (above 800°F)
- Hexafluoropropylene (above 825°F)
- Perfluoroisobutylene (above 885°F)
- Carbonyl Fluoride (above 930°F)

11. TOXICOLOGICAL INFORMATION

CARCINOGENIC STATUS:	NA

12. ECOLOGICAL INFORMATION

NA

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:	Not Regulated

15. REGULATORY INFORMATION

INTERNATIONAL REGULATIONS:	
Canadian (DSL/NDSL):	NE
Australian (ACIS):	NE
Korea (KECI):	NE
Japan (ENCS, MITI):	NE
China (IECSC)	Article
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 *(Toxic Substances Control Act):*	All ingredients are TSCA listed.
CERCLA *(Comprehensive Emergency Response, Compensation, and Liability Act):*	NA
SARA TITLE III *(Superfund Amendments and Reauthorization Act):*	NA
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:

CAS #	CHEMICAL NAME	PERCENT BY WEIGHT
7440-50-4	Copper	Varies

16. OTHER INFORMATION

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

FILE: 99282-RT6035HTC-10152014

Date Prepared: 10-15-2014

PREPARED BY: Michal Werbecki
REVIEWED BY: Curtis Kempton.

REVISION ITEMS & DATE: 10-15-2014
Updated citation for RoHS, and removed chemtrec phone number, and added comment of the materials being an article.

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