



## Material Safety Data Sheet

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### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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**PRODUCT NAME:** FaradFlex™  
**OTHER/GENERIC NAMES:** Copper clad polymer dielectric – **BC8, BC12, BC16 and BC24**  
**PRODUCT USE:** Substrate for printed circuit boards  
**MANUFACTURER:** Oak-Mitsui Technologies  
 80 First Street  
 Hoosick Falls, NY 12090

<b>FOR MORE INFORMATION CALL:</b> (Monday-Friday, 9:00am-4:30pm EST) 518-686-4961	<b>IN CASE OF EMERGENCY CALL:</b> (24 Hours/Day, 7 Days/Week) 518-686-4961
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### 2. COMPOSITION/INFORMATION ON INGREDIENTS

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<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Proprietary polymer dielectric	Proprietary	2-8
Copper	7440-50-8	92-98

Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

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### 3. HAZARDS IDENTIFICATION

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**EMERGENCY OVERVIEW:** A nonflammable sheet material. Vapors if decomposed may irritate eyes, nose and throat.

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#### POTENTIAL HEALTH HAZARDS

**SKIN:** No irritation expected  
**EYES:** Not a probable route of exposure  
**INHALATION:** Not a probable route of exposure  
**INGESTION:** Not a probable route of exposure  
**DELAYED  
EFFECTS:** None expected

# MATERIAL SAFETY DATA SHEET

**FaradFlex™**

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**Ingredients found on one of the OSHA designated carcinogen lists are listed below.**

<u>INGREDIENT NAME</u>	<u>NTP STATUS</u>	<u>IARC STATUS</u>	<u>OSHA LIST</u>
No ingredients listed in this section.	None	none	None

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## **4. FIRST AID MEASURES**

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**SKIN:** Wash with soap and water after handling. If skin irritation develops, consult a physician.

**EYES:** Flush with water. If irritation persists, consult a physician.

**INHALATION:** If overcome by fumes from decomposition, remove to fresh air. If condition persists, consult a physician.

**INGESTION:** Not a probable route of exposure.

**ADVICE TO PHYSICIAN:** Treat symptomatically.

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## **5. FIRE FIGHTING MEASURES**

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### **FLAMMABLE PROPERTIES**

**FLASH POINT:** N/A

**FLASH POINT METHOD:** N/A

**AUTOIGNITION TEMPERATURE:** N/A

**UPPER FLAME LIMIT (volume % in air):** N/A

**LOWER FLAME LIMIT (volume % in air):** N/A

**FLAME PROPAGATION RATE (solids):** This product is self extinguishing, does not burn.

**OSHA FLAMMABILITY CLASS:** N/A

**EXTINGUISHING MEDIA:** water, foam, dry chemical, CO<sub>2</sub>

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** May give off CO, CO<sub>2</sub> when thermally decomposed.

**SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:** Fireman should wear proper PPE and breathing apparatus.

# MATERIAL SAFETY DATA SHEET

## **FaradFlex™**

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### **6. ACCIDENTAL RELEASE MEASURES**

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**IN CASE OF SPILL OR OTHER RELEASE:** Not applicable, material is an article.

**Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.**

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### **7. HANDLING AND STORAGE**

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**NORMAL HANDLING:** (Always wear recommended personal protective equipment.) Wash thoroughly after handling.

**STORAGE RECOMMENDATIONS:** N/A

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### **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**ENGINEERING CONTROLS:** Safe handling of polymers at high temperatures requires adequate ventilation. Adequate ventilation will be dependent on temperature and exposure time.

#### **PERSONAL PROTECTIVE EQUIPMENT**

**SKIN PROTECTION:** Gloves are recommended as good industrial practice.

**EYE PROTECTION:** Safety glasses are recommended as good industrial practice.

**RESPIRATORY PROTECTION:** Atmospheric copper dust from machining or lasing operations should be maintained below exposure guidelines.

**ADDITIONAL RECOMMENDATIONS:** N/A

#### **EXPOSURE GUIDELINES**

<b><u>INGREDIENT NAME</u></b>	<b><u>ACGIH TLV</u></b>	<b><u>OSHA PEL</u></b>	<b><u>OTHER LIMIT</u></b>
Copper dust	1 mg/M <sup>3</sup>	1 mg/M <sup>3</sup>	None

\* = Limit established by Honeywell International, Inc.

\*\* = Workplace Environmental Exposure Level (AIHA).

\*\*\* = Biological Exposure Index (ACGIH).

# MATERIAL SAFETY DATA SHEET

**FaradFlex™**

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**OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:** none

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## **9. PHYSICAL AND CHEMICAL PROPERTIES**

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**APPEARANCE:** Light yellow sheet, copper clad  
**PHYSICAL STATE:** Solid  
**MOLECULAR WEIGHT:** N/A  
**CHEMICAL FORMULA:** N/A  
**ODOR:** None  
**SPECIFIC GRAVITY (water = 1.0):** 8.5 to 8.8  
**SOLUBILITY IN WATER (weight %):** Insoluble  
**pH:** N/A  
**BOILING POINT:** N/A  
**MELTING POINT:** N/A  
**VAPOR PRESSURE:** N/A  
**VAPOR DENSITY (air = 1.0):** N/A  
**EVAPORATION RATE:** N/A      **COMPARED TO:** N/A  
**% VOLATILES:** N/A  
**FLASH POINT:** N/A

(Flash point method and additional flammability data are found in Section 5.)

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## **10. STABILITY AND REACTIVITY**

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**NORMALLY STABLE? (CONDITIONS TO AVOID):** stable

**INCOMPATIBILITIES:** none determined

**HAZARDOUS DECOMPOSITION PRODUCTS:** CO and CO<sub>2</sub> above 400 deg. C

**HAZARDOUS POLYMERIZATION:** none

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## **11. TOXICOLOGICAL INFORMATION**

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**IMMEDIATE (ACUTE) EFFECTS:** none

**DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:** none determined

**OTHER DATA:** N/A

# MATERIAL SAFETY DATA SHEET

**FaradFlex™**

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## **12. ECOLOGICAL INFORMATION**

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not biodegradable

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## **13. DISPOSAL CONSIDERATIONS**

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### **RCRA**

**Is the unused product a RCRA hazardous waste if discarded?** No

**If yes, the RCRA ID number is:**

**OTHER DISPOSAL CONSIDERATIONS:** Observe all Federal, State, and Local Environmental regulations.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

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## **14. TRANSPORT INFORMATION**

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**US DOT PROPER SHIPPING NAME:**N/A

**US DOT HAZARD CLASS:** Not regulated

**US DOT ID NUMBER:** N/A

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

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## **15. REGULATORY INFORMATION**

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### **TOXIC SUBSTANCES CONTROL ACT (TSCA)**

**TSCA INVENTORY** N/A

**STATUS:**

**OTHER TSCA ISSUES:** N/A

# MATERIAL SAFETY DATA SHEET

**FaradFlex™**

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## SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

<u>INGREDIENT NAME</u>	<u>SARA/CERCLA RQ</u> <u>(lb)</u>	<u>SARA EHS TPQ (lb)</u>
Copper	5000	N/A

**Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.**

**SECTION 311 HAZARD CLASS:** N/A

## **SARA 313 TOXIC CHEMICALS:**

The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

<u>INGREDIENT NAME</u>	<u>COMMENT</u>
Copper CAS 7440-50-8	Recycle

## STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

<u>INGREDIENT NAME</u>	<u>WEIGHT</u> <u>%</u>	<u>COMMENT</u>
No ingredients listed in this section.	N/A	N/A

**ADDITIONAL REGULATORY INFORMATION:** N/A

# **MATERIAL SAFETY DATA SHEET**

**FaradFlex™**

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**WHMIS CLASSIFICATION (CANADA):** N/A

**FOREIGN INVENTORY STATUS:** N/A

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## **16. OTHER INFORMATION**

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**CURRENT ISSUE**      February 11, 2004

**DATE:**

**PREVIOUS ISSUE**      None

**DATE:**

**CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:**

**OTHER  
INFORMATION:**