OAK-MITSUI

MITSUI KINZOKU CORPORATE GROUP

Material Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **FaradFlex™**
OTHER/GENERIC NAMES: Copper clad polymer / filler dielectric - **BC16T & BC12TM**
PRODUCT USE: Substrate for printed circuit boards

MANUFACTURER:
Oak-Mitsui Technologies
80 First Street
Hoosick Falls, NY 12090

FOR MORE INFORMATION CALL:
(Monday-Friday, 9:00am-4:30pm EST)
518-686-4961

IN CASE OF EMERGENCY CALL:
(24 Hours / Day, 7 Days / Week)
518-686-4961

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NUMBER	WEIGHT %
Proprietary polymer / s in dielectric	Proprietary	0.5-2.5
Barium Titanate in dielectric	12047-27-7	2-8
Copper	7440-50-8	90-97

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.

3. HAZARDS IDENTIFICATION

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

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

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

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

4. FIRST AID MEASURES

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.

5. FIRE FIGHTING MEASURES

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_2

UNUSUAL FIRE AND EXPLOSION HAZARDS: May give off CO, CO_2 when thermally decomposed.

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

6. ACCIDENTAL RELEASE MEASURES

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

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

7. HANDLING AND STORAGE

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

STORAGE RECOMMENDATIONS: N / A

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

INGREDIENT NAME	ACGIH TLV	OSHA PEL	OTHER LIMIT
Copper dust	1 mg / M^3	1 mg / M^3	None

* = Limit established by Oak-Mitsui, Inc.
** = Workplace Environmental Exposure Level (AIHA).
*** = Biological Exposure Index (ACGIH).

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS: none

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: white 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.)

10. STABILITY AND REACTIVITY

NORMALLY STABLE? (CONDITIONS TO AVOID): stable

INCOMPATIBILITIES: none determined

HAZARDOUS DECOMPOSITION PRODUCTS: CO and CO_2 above 400 deg. C

HAZARDOUS POLYMERIZATION: none

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS: none

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS: none determined

OTHER DATA: N / A

12. ECOLOGICAL INFORMATION

not biodegradable

13. DISPOSAL CONSIDERATIONS

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.

14. TRANSPORT INFORMATION

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.

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: N / A

OTHER TSCA ISSUES: N / A

SARA TITLE III/CERCLA

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

INGREDIENT NAME	SARA/CERCLA RQ (lb)	SARA EHS TPQ (lb)
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.

INGREDIENT NAME	COMMENT
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.

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

ADDITIONAL REGULATORY INFORMATION: N / A

WHMIS CLASSIFICATION (CANADA): N / A

FOREIGN INVENTORY STATUS: N / A

16. OTHER INFORMATION

CURRENT ISSUE DATE: February 11, 2004

PREVIOUS ISSUE DATE: None

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

OTHER INFORMATION: