



## Material Safety Data Sheet – 3EC Copper Foil

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** 3EC Copper Foil

**OTHER/GENERIC NAMES:** 3EC, 3EC-HTE, MLS-3EC-HTE, 3EC-III

**PRODUCT USE:** Circuit Boards

**MANUFACTURER:** Oak-Mitsui Inc.

80 First Street  
Hoosick Falls, NY 12090

Oak-Mitsui Inc.

29 Battleship Road Extension  
Camden, SC 29020

**FOR MORE INFORMATION CALL:**

(Monday-Friday, 7:00am-4:00pm EST)

803-425-7904 or Cell # 803-338-8583

**IN CASE OF EMERGENCY CALL:**

(24 Hours/Day, 7 Days/Week)

803-425-7904 or 803-425-7918 or Cell # 803-338-8583

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Copper	7440-50-8	99.6 min.
Chromium	7440-47-3	<0.01
Zinc	7440-66-6	<0.04

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 red/orange metal sheet. The only hazards associated with copper foil as shipped are the potential for cuts from sharp edges.

#### POTENTIAL HEALTH HAZARDS

Dusts, mists or fumes may be generated when copper foil is cut or processed. (laminated)

**SKIN:** As produced in foil form, the potential for cuts exists due to sharp edges of the metal.

**EYES:** Dust may irritate eyes.

**INHALATION:** Dust may cause irritation to respiratory tract.

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

**DELAYED EFFECTS:** No chronic effects are expected from this product.

**MATERIAL SAFETY DATA SHEET**  
3EC Copper Foil

**3. HAZARDS IDENTIFICATION (cont)**

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>
Chromium	Known carcinogen	3	No
Zinc	No	No	No

**4. FIRST AID MEASURES**

**SKIN:** Seek medical attention for cuts

**EYES:** Flush eyes with large amounts of water. Seek medical attention if irritation persists.

**INHALATION:** Seek fresh air. Get medical attention if irritation persists.

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

**ADVICE TO PHYSICIAN:** No specific advice. Treat according to symptoms present.

**5. FIRE FIGHTING MEASURES****FLAMMABLE PROPERTIES**

**FLASH POINT:** None

**FLASH POINT METHOD:** Not applicable.

**AUTOIGNITION TEMPERATURE:** Not applicable.

**UPPER FLAME LIMIT (volume % in air):** Not applicable.

**LOWER FLAME LIMIT (volume % in air):** Not applicable.

**FLAME PROPAGATION RATE (solids):** Not applicable

**OSHA FLAMMABILITY CLASS:** Not applicable

**EXTINGUISHING MEDIA:**

Water or carbon dioxide as appropriate for surrounding materials.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

None

**SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:**

None

**6. ACCIDENTAL RELEASE MEASURES**

**IN CASE OF SPILL OR OTHER RELEASE:** (Always wear recommended personal protective equipment.)

As a solid, spills and releases are not a factor. Dust should be swept or vacuumed to reduce airborne dust and particulates.

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

**MATERIAL SAFETY DATA SHEET**

## 3EC Copper Foil

**7. HANDLING AND STORAGE**

**NORMAL HANDLING:** Always wear recommended personal protective equipment. Edges of copper foil are sharp. Dyneema® or Kevlar® cut-resistant gloves are recommended for hand protection.

**STORAGE RECOMMENDATIONS:** No specific storage requirements.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**ENGINEERING CONTROLS:** General exhaust.

**PERSONAL PROTECTIVE EQUIPMENT**

**SKIN PROTECTION:** Dyneema® or Kevlar® cut-resistant gloves

**EYE PROTECTION:** Safety glasses.

**RESPIRATORY PROTECTION:** If dust or fume is present, use negative pressure respirator according to NIOSH/MSHA standards.

**ADDITIONAL RECOMMENDATIONS:** None

**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	0.2 mg/m <sup>3</sup> TWA-fume 1 mg/m <sup>3</sup> TWA-dust/mist	0.1 mg/m <sup>3</sup> TWA-fume 1 mg/m <sup>3</sup> TWA-dust/mist	None
Chromium	0.5 mg/m <sup>3</sup> TWA	1 mg/m <sup>3</sup> TWA	None
Zinc	5 mg/m <sup>3</sup> TWA	10 mg/m <sup>3</sup> TWA	None

**MATERIAL SAFETY DATA SHEET**

## 3EC Copper Foil

---

**9. PHYSICAL AND CHEMICAL PROPERTIES**

---

APPEARANCE:	Red/orange metal.	
PHYSICAL STATE:	Solid	
MOLECULAR WEIGHT:	Not applicable	
CHEMICAL FORMULA:	Not applicable	
ODOR:	Odorless	
SPECIFIC GRAVITY (water = 1.0):	8.93 @ 20 d C	
SOLUBILITY IN WATER (weight %):	Insoluble	
pH:	Not applicable	
BOILING POINT:	4652 d F @ 1 atm.	
MELTING POINT:	1083 d C @ 1 atm.	
VAPOR PRESSURE:	Not applicable	
VAPOR DENSITY (air = 1.0):	Not applicable	
EVAPORATION RATE:	Not applicable	COMPARED TO:
% VOLATILES:	Not applicable	
FLASH POINT:	None	

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

---

**10. STABILITY AND REACTIVITY**

---

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

Stable

**INCOMPATIBILITIES:**

1-bromo-2 propyne

**HAZARDOUS DECOMPOSITION PRODUCTS:**

None

**HAZARDOUS POLYMERIZATION:**

Will not occur

---

**11. TOXICOLOGICAL INFORMATION**

---

**IMMEDIATE (ACUTE) EFFECTS:**

Not applicable in this form

**DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:**

Not applicable in this form

**OTHER DATA:**

None

---

**12. ECOLOGICAL INFORMATION**

---

Not applicable

**MATERIAL SAFETY DATA SHEET**

3EC Copper Foil

**13. DISPOSAL CONSIDERATIONS****RCRA**

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

If yes, the RCRA ID number is: Not applicable

**OTHER DISPOSAL CONSIDERATIONS:** Copper foil is completely recyclable

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 HAZARD CLASS: Not applicable

US DOT ID NUMBER: Not applicable

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: Article - Exempt from TSCA

OTHER TSCA ISSUES: None

**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 (lb)</u>	<u>SARA EHS TPQ (lb)</u>
Copper	5000	None
Chromium	5000	None
Zinc	1000	None

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: None

SARA 313 TOXIC CHEMICALS:

**MATERIAL SAFETY DATA SHEET**  
**3EC Copper Foil**

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	None
Chromium	None
Zinc	None

**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>COMMENT</u>
No ingredients listed in this section		

**ADDITIONAL REGULATORY INFORMATION:**

None

**WHMIS CLASSIFICATION (CANADA):**

Not applicable - Article

**FOREIGN INVENTORY STATUS:**

Not applicable - Article

---

**16. OTHER INFORMATION**

---

**CURRENT ISSUE/REVISION DATE:** November 10, 2006

**PREVIOUS ISSUE/REVISION DATE:** June 30, 2006

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

- Section 1 Changed Emergency Contact Phone Number

**OTHER INFORMATION:** None