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**1) PRODUCT IDENTIFICATION**

**Product:** MC7680-UFS **Product Type:** FLIP-CHIP UNDERFILL  
**Product Description:** Low dielectric constant and loss, Low ionic impurities, Low moisture absorption, High temperature stability.  
**Recommendation On Use:** Ultra high temp encapsulation, flip chip underfill **General Use:** Underfill . **Restriction On Use:** Intended for designated use only.

**2) HAZARD IDENTIFICATION**

**Signal Word:** Warning



**Precautionary Statement:** For industrial use only **Physical Appearance:** Paste **Immediate Concerns:** None

**Primary Route Entry:** Skin **Medical Conditions Aggravated:** No specific data

**Potential Health Effects:**

**Eyes:** Irritant **Skin:** Adverse symptoms may include irritation and redness **Ingestion:** No specific data **Inhalation:** Irritant

**Signs and Symptoms of Overexposure:**

**Eyes:** Adverse symptoms may include irritation, watering and redness **Skin:** Irritant **Ingestion:** None under normal use **Inhalation:** No specific data

**Acute Toxicity:** No known significant effects or critical hazards **Chronic Exposure:** Repeated skin contact may cause irritation **Carinogenicity:** Not classifiable as a carcinogen **Mutagenicity:** Not considered to be mutagenic

**Reproductive Effects:** Not known to cause any reproductive effects **Teratogenic Effects:** None under normal use **Target Organ Stament:** No known significant effects or critical hazards **Sensitization:** May cause sensitization

**3) COMPOSITION / INFORMATION ON INGREDIENTS**

MATERIAL:	CAS NO	%
Silicon dioxide	14808-60-7	65-80
Cyanate Ester Admixture	1156-51-0	30-05
Polybutadiene, modified	129288-65-9	02-05
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	25265-77-4	01-05
Nonylphenol	84852-15-3	02-05

NOTE: \* For powders only; in adhesive product, powders are bound in adhesive and values are not applicable.

**4) FIRST AID MEASURES**

**First Aid Eye:** Immediately flush eyes with eye wash solution or clean water holding the eyelids apart for 15 minutes. If symptoms develop, seek medical attention. **First Aid SKIN:** Wash with soap and water. If symptoms develop, seek medical attention. **FIRST AID INHALE:** Move to fresh air. Seek medical attention.

**First Aid Ingest:** If swallowed, do not induce vomiting. Keep person resting and seek medical attention. **Physician Note:** No specific treatment. Treat symptomatically. **Acute Symptoms:** Seek medical treatment

**Delayed Symptoms:** Seek medical treatment

**5) FIRE FIGHTING MEASURES**

**Flammable Class:** 1 **Flame Propagation or Burning Rate of Ssolids:** Unknown

**General Hazard:** No specific fire or explosion hazard.

**Extiguish Media:** Sodium Bicarbonate and water

**Hazardous Combustion Products:** Unknown

**Fire Fighting Procedures:** Use self-contained breathing apparatus; decomposition and combustion products may be toxic. **Unsuitable Firefighting Equipment:** Self-contained breathing apparatus should be available for fire fighters.

**Suitable Firefighting Equipment:** Not determined

**Sensitive To Static Discharge:** No **Sensitive To Impact:** No

## 6) ACCIDENTAL RELEASE MEASURES

**Small Spill:** Cover with sand and place in waste containers for disposal

**Large Spill:** Contain spill and place in waste containers for disposal

**Water Spill:** Keep from going into water systems

**Land Spill:** Contain spill and place in waste containers for disposal

### General Procedures:

Use the necessary tools and protective equipment

### Release Notes:

Unknown

## 7) HANDLING AND STORAGE

### Handling:

Use latex gloves and safety glasses

### Storage:

-40C

## 8) EXPOSURE CONTROLS / PERSONAL PROTECTION

**PPE Eye And Face:** Personal protective equipment should be worn based on the task being performed

**PPE Skin:** Personal protective equipment should be worn based on the task being performed

### Engineering Controls:

**PPE Respiratory:** Respirator selection must be based on known or anticipated exposure levels

### OSHA PEL

0.1 mg/m<sup>3</sup> \*

### ACGIH TLV

0.1 mg/m<sup>3</sup> \*

### EINECS

**PPE Ventilation:** Emissions from ventilation equipment should be checked to ensure they comply with the requirements of environmental protection legislation

None Established

None Established

**PPE Other:** Personal protective equipment should be worn based on the task being performed

None Established

None Established

**Work Hygienic Practices:** Emissions from ventilation equipment should be checked to ensure they comply with the requirements of environmental protection legislation

None Established

None Established

None Established

None Established

## 9) PHYSICAL AND CHEMICAL PROPERTIES

**Flashpoint And Method:** Unknown

**Lower Flammable Limits:** Unknown

**Upper Flammable Limits:** Unknown

**Physical State:** Paste

**Autoignition Temperature:** Unknown

**Odor:** Slight chemical odor

**Color:** Light beige

**Odor Threshold:** Not Determined

**Vapor Pressure:** Unknown

**PH:** Not tested

**Vapor Density:** Not tested

**Freezing Point:** -45 deg C

**Boiling Point:** Not Determined

**Solubility In Water:** None

**Melting Point:** 240 deg C

**Density:** 1.8

**Evaporation Rate:** <0.1 %

**Viscosity:** 9,000 cp

**Specific Gravity:** 1.8

**Coeff. Oil/Water:** Not tested

**Molecular Weight:** Not tested

**Appearance:** Paste

## 10) STABILITY AND REACTIVITY

**Hazardous Polymerization:** Stable under normal conditions of storage and use

**Chemical Stability:** Stable

**Polymerization:** Hazardous polymerization may occur.

**Conditions To Avoid:** Avoid excessive heat. Do not store near heat or flame

### Hazardous Decomposition Products:

Not determined

### Incompatibility Materials:

Not determined

## 11) TOXICOLOGICAL INFORMATION

### Acute:

**Eyes:** Stable under recommended storage and handling cond

**Dermal LD50:** Not tested

**Oral LD50:** Not tested

**Inhalation LC50:** Not tested

**Eye Effects:** May cause burning and watery eyes

**Skin Effects:** Unknown

**Carcinogenicity:**

**IARC:** Not tested

**NTP:** Not tested

**OSHA:** 0.1 mg/m<sup>3</sup> \*

**Sensitization:** May cause sensitization by skin contact

**Reproductive Effects:** Not tested

**TARGET ORGANS:**

**Eyes:** Irriting

**Skin:** Moderate irritant, may cause rash.

**Gastrointestinal:** Not Determined

**Respiratory System:** Not Determined

**Teratogenic Effects:** May cause sensitization by skin contact

**Mutagenicity:**

**12) ECOLOGICAL INFORMATION**

**Ecotoxicity:** No known significant effects or critical hazards

**Mobility In Soil:** No known significant effects or critical hazards

**Persistence And Degradability:** No known significant effects or critical hazards

**Bioaccumulative Potential:** No known significant effects or critical hazards

**13) DISPOSAL CONSIDERATIONS**

**Disposal Method:** Dispose of in an approved landfill.

**For Large Spills:** Disposal of this product should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements

**Product Disposal:** Disposal of this product should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements

**Empty Container:** Disposal of this product should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements

**14) TRANSPORT INFORMATION**

**Road And Rail (ADR/RID)**

**Transport Information:**

Not Regulated

**Kemler Number:**

Unknown

**Hazard Class:**

Irritant

**Air (CIAO/IATA)**

**Shipping Name:** Not Regulated

**Technical Name:** N.A.

**UN Number:** N.A.

**Primary Hazard Class:** N.A.

**Packing Group:** N.A.

**Label:** N.A.

**Vessel (IMO/IMDG)**

**Shipping Name:** Not Regulated

**Technical Name:** N.A.

**UN Shipping Name:** N.A.

**Primary Hazard Class:** N.A.

**Packing Group:** N.A.

**Label:** N.A.

**15) REGULATORY INFORMATION**

**TCSA:** This product, or its components, are listed on or are exempt from the Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

**Skin:** Not determined

**Gastrointestinal:** Not Determined

**Respiratory System:** Not Determined

**16) OTHER INFORMATION**

**HMIS Health Rating (1-4):** 1

**HMIS Flammability Rating (1-4):** 1

**HMIS Physical Hazard Rating (1-4):** 0

**Long Term Health Effects (Y/N):** N

**Note:** All ingredients in this product are on the Toxic Substances Control Act (TSCA) inventory or are not required to be listed and are compliant with EC regulation 1907-2006 Art. 31 Annex II. The ingredients are compliant with RoHS, REACH and are halogen free.. No ingredient in this product is known to be carcinogenic.

Ingredients listed on the New Jersey "RIGHT TO KNOW" substance list: None

**Section X:** HMIG Rating: Health-1, Flammability-1, Reactivity-0, Protective Equipment-D

**Version:** A- 10/23/2014