

NITTO DENKO

Material Safety Data Sheet (MSDS)

Prepared on : 2005/10/18

1. Product and company identification

Product name EPOXY MOLDING COMPOUND for IC

Name of product (chemical name, brand name, etc.) : MP-8000CH-E

Supplier product code: 76183 30-40-0-1-E 2106080061

Company identification

Name of the supplier: NITTO ELECTRONICS KYUSHU CORPORATION

Address : 842-0031 2307-2, YOSHIDA, YOSHINOARI, KANZAKI, SAGA, JAPAN

A Section in Charge : QUALITY ASSURANCE DEPT.

Telephone number : 0952-53-3820

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2. Composition / information on ingredients

Distinction between a substance and a preparation : Compound

| The common chemical name or the generic name | Solid Epoxy Resin | Phenol Resin | Fused Silica |
|--|--------------------|--------------|-------------------|
| Synonyms | - | - | - |
| Chemical formula or structural formula | - | - | SiO ₂ |
| Content (mass%) | 2-20 | 2-20 | 60-95 |
| The serial number of the notifications on the official gazette | - | - | 5-3540 |
| CAS number | - | - | 60676-86-0 |
| The common chemical name or the generic name | Crystalline Silica | Carbon Black | Antimony Trioxide |
| Synonyms | - | - | - |
| Chemical formula or structural formula | SiO ₂ | C | - |
| Content (mass%) | below 5 | below 1 | 1.2 |
| The serial number of the notifications on the official gazette | 1-548 | - | 1-543 |
| CAS number | 14808-60-7 | 1333-86-4 | 1309-64-4 |

3. Hazards identification

Hazards classification : Not classified as flammable but will burn.

Most important hazards and effects of the product

Adverse human health effects :

Dust or small particles abrade skin and irritate eyes.

Silica; See section 11

Crystalline Silica is listed in US California Proposition 65 as chemicals can cause cancer.

Environmental effects :

No specific hazards.

Physical and chemical hazards :

May occur extraordinary reaction and generate high temperature when contact with strong alkalis or acids.

Specific hazards :

May irritate skin and eyes with prolonged and repeated contact.

4. First-aid measures

Inhalation :

If affected, move victims to fresh air. Keep victims at rest.

Skin contact :

Wash exposed area with lots of soap and water. Remove contaminated clothing and launder before re-use.

Eye contact :

Immediately Flush with large amounts of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

Ingestion :

Do not induce vomiting. Get immediate medical attention.

A brief description of the most important symptoms and effect :

NA

Protection of first-aiders :

NA

Special notes to a physician :

NA

5. Fire-fighting measures

Extinguishing media :

Dry chemical, carbon dioxide, water spray or foam.

NOT suitable extinguishing media :

Water in a jet.

Specific hazards :

May produce oxides of carbon if incomplete combustion occurs.

Specific methods :

Keep personnel removed from and upwind of fire.

Protection of firefighters :

Wear full protective clothing and self-contained breathing apparatus with full face-piece.

6. Accidental release measures

Personal precautions :

Persons not wearing protective equipment should be excluded from the area of the spill until clean up has been completed.

Environmental precautions :

Prevent spills from entering sewers, watercourses or low areas.

Methods for cleaning up

- Recovery :** In case of spill wipe up with wipers or vacuum cleaners, then put it into a chemical waste containers.
- Neutralization :**
- Disposal :** See Section 13 for information in disposal.

7. Handling and storage

Handling

- Technical measures :** Use closed or covered containers.
- Prevention of user exposure :** Avoid contact with skin, eyes and clothing. Avoid inhalation of vapors. Wash skin thoroughly after handling.
- Precautions :** Apply local ventilation over processing areas.
- Safe handling advice :** Avoid contact with strong acids or alkalis.
- Storage**
- Technical measures :** Keep containers closed or covered and dry.
- Incompatible products :** Strong acids or alkalis.
- Storage conditions**
- Suitable storage conditions :** Keep under 5 degreeC in covered containers and away from direct sunlight. Heat and open flames when not in use.
- Storage conditions to be avoided :** Avoid keeping in higher temperature.
- Packaging materials :** Closed or covered containers.
- Recommended :** Use closed containers with impervious materials.
- Not suitable :** Avoid overexposure in higher humidity.

8. Exposure controls / personal protection

- Engineering measures :** Provide sufficient ventilation to maintain exposure below established exposure limits or level of overexposure.
- Control parameters :** Silica:
ACGIH
TWA 0.1mg/m3
- Personal protective equipment**
- Respiratory protection :** Half mask respirator with an organic vapor cartridge.
- Hand protection :** Wear impervious protective gloves, such as polyethylene or certain synthetic rubbers (contact your safety equipment supplier).
- Eye protection :** Dust-tight goggles.
- Skin and body protection :** Impervious clothing and boots are recommended.

9. Physical and chemical properties

Physical state

| | |
|---|--|
| Form : | Tablet or Powder |
| Colour : | Gray |
| Odour : | Faint odor |
| pH : | NA |
| Specific temperature / temperature ranges at which changes in physical state occur | |
| Boiling point : | NA |
| Boiling range : | NA |
| Fusing point : | 70-110 degreeC |
| Decomposition temperature : | above 200 degreeC |
| Flash point : | above 200 degreeC |
| Autoignition temperature : | above 200 degreeC |
| Explosion properties : | No data |
| Vapour pressure : | NA |
| Vapour density : | NA |
| Density : | No data |
| Solubility, with indication of the solvent : | Not miscible in water, miscible in Ketone. |

10. Stability and reactivity

| | |
|--|---|
| Stability : | Stable below 5 degreeC, in a closed container. |
| Possible hazardous reactions occurring under specific conditions : | May occur extraordinary reaction when contacted with strong acids, alkalis or hardeners for epoxy resins. |
| Conditions to avoid : | Store in high temperature or humidity. |
| Materials to avoid : | Strong acids, oxidizing agents or hardeners for epoxy resins. |
| Hazardous decomposition products : | Thermal decomposition may form carbon monoxide, carbon dioxide, nitrogen, nitrogen oxide and water vapor. |

11. Toxicological information

| | |
|------------------|--------------|
| Acute toxicity : | NA |
| Local toxicity : | Not cleared. |
| Specific effects | |

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Carcinogenicity :

Fused Silica;
Listed as Level 3 in IARC

Crystalline Silica;
Listed as Level 1 in IARC

12. Ecological information

Information on fate

Mobility : Sinks in water.

Bioaccumulation : Has potential to bioaccumulate.

Ecotoxicity : Practically non-toxic.

13. Disposal considerations

Product : Incineration is the recommended disposal method for chemical waste such as this product. Dispose to licensed disposal processor.

Waste from residues : Dispose to licensed disposal processor.

Contaminated packaging : Remove all packaging for recovery or waste disposal. Dispose as industrial waste

14. Transport information

Informations for Code and classification at International regulations

Land : Assure containers are not damaged to prevent leakage of product before loading.

The UN classification number : NA

15. Regulatory information

Regulations : It is necessary to follow all regulations in your country.

US California Proposition 65

All the ingredients are TSCA listed.

16. Other information

Disclaimer:

This information is made based on data from such as raw material MSDS, and our current knowledge.

The information contained herein is believed to be accurate, and is intended to describe the product for the purposes of health.

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safety and environmental requirements only.

Therefore It should not be construed as guaranteeing any specific property of the product.

Recipient shall assume all responsibility for the use of this information and the use (alone or in combination with any other product),

storage or disposal of the product, including any resultant personal injury or property damage.