

MATERIAL SAFETY DATA SHEET

MSDS No. 73188-E

Issue Date: 11/Nov./2002

1. Product and Company Identification

Product Name : EPOXY MOLDING COMPOUND for IC: MP-8000C

Supplier Name : NITTO DENKO CORPORATION

Address : 919, FUKU, KAMEYAMA, MIE, 519-0193, Japan

Responsibility : QA Department

Person in charge : H. Kouyama

Telephone number : 05958-4-2835 (EMERGENCY : 05958-2-1151)

Fax number : 05958-2-8613

2. Composition / Information in ingredients

Substance/Mixture : Mixture material

| Component | CAS No. | Content (%) | Hazardous |
|--------------------|------------|-------------|----------------|
| Solid Epoxy Resin | --- | 2 - 20% | not restricted |
| Phenol Resin | --- | 2 - 20% | not restricted |
| Antimony Oxide | 1309-64-4 | 1.4% | Yes |
| Carbon Black | 1333-86-4 | < 1% | not restricted |
| Fused Silica | 60676-86-0 | 60 - 95% | not restricted |
| Crystalline Silica | 14808-60-7 | < 5% | Yes |

3. Hazards Identification

Human Health Effect

Harmful if ingested and inhaled after molding..

Physical and chemical hazards

May occur abrupt exothermic reaction with heating, strong alkali or acid.

4. First-Aid Measures

Inhalation:

Move victim to fresh air if victim breathes gas after molding. If breathing is difficult, give oxygen. If headache, nausea persists, consult a physician.

Ingestion:

Give plenty of water and try to spit out the substance. Never give anything by mouth to an unconscious person. Consult a physician.

Skin

Contact:

Remove the attached substance using gauze, and wash using soap. If irritation persists, consult a physician.

Eye

Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Consult a physician.

5. Fire-Fighting Measures

Fire Extinguishing Media: Dry chemical powder, Foam, Carbon dioxide, Water.

Fire & Explosion Hazards: During fire case, may occur black smoke.

Specific Methods: Break off the root of fire. Fire fighting must be done from windward.

Protection of Firefighters: Firefighters should wear normal protective equipment (full bunker gear) and positive-pressure self-contained breathing apparatus.

6. Accidental Release Measures

Personal Precautions: Wear suitable protective equipment to avoid contact with skin and eye, and inhale gas.

Environmental Precautions: Prevent spills from entering sewers, watercourses or low area.

Method for clean up: Waste materials using a broom or cleaning machine not to raise dust.

Consult a waste disposal company for optimum treatment, or abandon by fire according to the local regulation.

7. Handling and Storage

Handling: Handle material with suitable protection like gloves, mask and protective clothes.

Ventilate the mold area and local ventilation on mold machine to avoid outer gas after molding.

Storage: Store away from sunlight in well-ventilated and darkroom at below 5 degrees C. Keep container tightly closed not touch with strong alkali and acid. Protect against physical damage. Isolate from any source of heat or ignition. Isolate from incompatible substances.

8. Exposure Controls / Personal Protection

Engineering Control: Use exhaust ventilation to keep airborne concentrations below exposure limits. Use only with adequate ventilation.

Control Parameters:

OSHA (1998) PEL-TWA 3.5 mg/m³

ACGIH (1998) TLV-TWA 3.5 mg/m³

Personal Protective Equipment:

Respiratory protection: Mask with active carbon

Hand protection: Chemical resistant gloves

Eye protection: Safety glasses (goggles)

Skin protection: Protective clothes with long sleeve

9. Physical and chemical properties

Form: Tablet or Powder

Color: Black

Odor: Epoxy, acid

pH: 3 - 5

Boiling Point: Not available

Melting Point: 70 – 110 degrees C

Flash Point: > 200 degrees C

Autoignition Temperature: > 200 degrees C

Solubility : Insoluble in water, Soluble in ketone.

Specific Gravity: 1.8 – 2.0

| | | | | |
|-------|----------|----------|-----|-----------|
| Vapor | Density | (Air=1): | Not | available |
| Vapor | Pressure | (mm Hg): | Not | available |

10. Stability and Reactivity

Stability:

Stable under unopened conditions at below 5 degrees C in the dark for 6 months.

Possible Hazardous Reactions:

May occur hazardous gas if react with strong acid, oxidizers.

Condition to Avoid:

Sunlight, heat, high humidity

Material to Avoid:

Strong acid, oxidizers.

Hazardous Decomposition Product:

CO, CO₂, NO_x, Vapor

11. Toxicological Information

Carcinogenic Toxicity:

Fused Silica: IARC(USA) Level 3

Crystalline Silica: IARC(USA) Level 1

Irritation Data: Irritation persists if attach to skin often or for a long time.

Special Effect: Need caution for silicosis if inhale plenty of crystal silica for a long time.

12. Ecological Information

Possible Environmental Effects: No information

13. Disposal Considerations

Waste Disposal methods:

Burn in a chemical incinerator equipped with an afterburner and scrubber in accordance with all applicable regulations. Any disposal must be in compliance with country, local, state and federal laws and regulations (contact country, local or state environmental agency specific rules).

14. Transport Information

Transportation Methods (land route, by water and sea):

Must be transported without damage, load shifting and leakage by packing, under dark at below 5 degrees C.

Transportation Methods (by air):

Must be transported without damage, load shifting and leakage by packing, with adding sufficient dry ice.

UNITED NATION No.: Not applicable

15. Regulatory Information

US Regulations

CAA: Listed (Sb_2O_3)

IARC: Level 1 (Crystalline Silica), Level 3 (Fused Silica)

ACGIH: Level A2(Sb_2O_3)

EPA: Not listed

EU Regulations

EACEM: RQ=10ppm (Sb_2O_3)

TA-luft: Level 3D (Sb_2O_3)

16. Other Information

1. Since the evaluation for hazardous is not sufficient, be careful for treatment.
2. The content value or physical and chemical value in listed above is not specification of item.
3. Caution described in above is applicable to normal used only, not to abnormal use.
4. The content may be revised after getting new information.

Reference Document:

MSDS of each ingredient