

Material Safety Data Sheet

1. Product and company identification

- a) Product Name Epoxy Molding Compound CEL-9240HFseries
- b) Manufacturer Information
- Name of Manufacturer Hitachi Chemical Co.,Ltd. Shimodate Works (Minamiyuki)
 - Address of Manufacturer 1772-1 Kanakubo, Yuki, Ibaraki 307-0015 Japan
 - Responsible department Semiconductor Material Div. Encapsulation Materials R&D Dept.
 - Telephone No. +81-296-32-8111
 - FAX No. +81-296-32-8381
 - Mail address hc_emc_rd@ml.hitachi-chem.co.jp
- c) Recommended use of the chemical and restrictions on use
Encapsulation materials for semiconductor

2. Hazards identification

- a) Hazard/Risk Classification (GHS)
- Physico-chemical Risk Unclassifiable
 - Human health Hazard
 - Acute toxicity (Oral) Unclassifiable
 - Acute toxicity (Dermal) Unclassifiable
 - Acute toxicity (Inhalation (Gas)) Unclassifiable
 - Acute toxicity (Inhalation (Vapor)) Unclassifiable
 - Acute toxicity (Inhalation (dust/mist)) Unclassifiable
 - Skin corrosion/irritation Unclassifiable
 - Serious eye damage/eye irritation Unclassifiable
 - Respiratory or skin sensitization Unclassifiable
 - Germ cell mutagenicity Classification 1
 - Carcinogenicity Classification 2
 - Reproductive toxicity Unclassifiable
 - Specific target organ/systemic toxicity (Single exposure) Unclassifiable
 - Specific target organ/systemic toxicity (Repeated exposure) Unclassifiable
 - Aspiration hazard Unclassifiable
 - Environmental Hazard Unclassifiable

b) Label elements including precautionary statements

- Pictogram or symbol



- Signal Word Dangerous
- Hazard/Risk Statement May cause heritable disease
Cancer-causing hazard

- Precautionary Statement

Read this MSDS carefully before use.

Wear protective equipment for handling, and do not directly contact with product.

Rinse thoroughly with soap or water in case of skin contact.

Wash thoroughly after handling.

Store in a sealed status.

3. Composition/Information on ingredients

Chemical name	Content (%)	Chemical formula	CAS number
Epoxy resin1	0.4~2.4	–	Trade secret
Epoxy resin2	0.1~0.6	–	Trade secret
Epoxy resin3	2~6	–	Trade secret
Hardener	2~5	–	Trade secret
Carbon black	Approx. 0.2	C	1333-86-4
Silica	82~94	SiO ₂	60676-86-0

4. First aid measures

a) Eye contact

Rinse the affected eyes with clean water for at least 15 minutes. Immediately call for an ophthalmologist.

b) Skin contact

Immediately wash affected area with soap and water. If signs/symptoms occur, consult a physician

c) Inhalation

Promptly move individual to fresh air. If breathing has stopped or breathing is difficult, loosen clothes, maintain patient airway and give artificial respiration.

Cover the body with blankets, keep person warm and calm. Seek immediate medical attention.

d) Ingestion

Induce vomiting with plenty of water. Seek immediate medical attention. It is also effective to rinse mouth with water.

e) Possible acute and delayed symptoms/effects

In case of skin contact, it may cause dermatitis depending on individual constitution.

5. Fire-Fighting measures

a) Extinguishing media

Extinguishing agents for Usual Fire (e.g. water spray, powder, carbon dioxide)

b) Specific extinguishing method

Water spray, powder, carbon dioxide or dry sand should be used for small fires.

In case of large-scale fires, it is effective to shut off air with using foam extinguisher.

In case of fire in the surroundings, apply water to surrounding facilities to cool down.

Immediately move containers from fire areas if it can be done without risk.

c) Protection for fire-fighters

Firefighters should wear proper protective equipments during extinguishing operation.

Evacuate personnel from area of fires except the people concerned.

6. Accidental release measures

a) Personal precautions, protective equipment and emergency procedures

Wear proper protective equipments during the operation.

b) Environmental precautions and protective procedures

Take care not to wash spilled product away into public waters such as rivers.

c) Methods and materials for containment and cleaning up

In case of small amount, vacuum spilled material with the vacuum machine and wipe off residual spill using waste cloth absorbed with alcohols.

In case of large amount, collect as much spill as possible into an empty container using riskless shovel, Vacuum with the vacuum machine and wipe off residual spill using waste cloth absorbed with alcohols.

For disposal method, read and follow precautions on product disposal stated in Section 13.

7. Handling and storage

a) Precautions for safe handling

Wear proper protective equipments stated in Section 8 to avoid direct contact during handling.

In case of skin contact, thoroughly wash the effected area with soap or water.

After handling, thoroughly wash hands.

b) Conditions for safe storage

Avoid direct sunlight and be kept under 5⁰C, and do thawing before unsealing.

In case product is unsealed and left, it absorbs moisture, so keep product sealed before storage.

Use product as soon as possible after it is unsealed.

8. Exposure controls & personal protection

a) Control parameters

ACGIH TLV (2007) TWA 0.1mg/m³(Silica)

ACGIH TLV (2007) TWA 3.5mg/m³(Carbon black)

b) Appropriate engineering controls

Install local ventilation system at sealed equipment, or for dust, vapor sources.

Set up the shower and the washing eyes equipment near the working place.

c) Personal protective equipment

Wear dustproof mask, safety goggles, protective gloves and long-sleeved working clothes.

9. Physical and chemical properties

a) Appearance	Gray tablet or powder (product)
b) Odor	No stimulating odor (product)
c) Melting point	1710 ⁰ C(Silica), 70~80 ⁰ C(product)
d) Initial boiling point/boiling range	2230 ⁰ C/ No data (Silica)
e) Flashing point	No data (product :UL-94 V-0)
f) Vapor pressure	No data
g) Relative density	1.94~2.09(product)
h) Auto-ignition temperature	Approx. 600 ⁰ C(product)
i) Decomposition temperature	Approx. 300 ⁰ C(product)

10. Stability and reactivity

a) Stability	Stable under normal condition (ordinary temperature/normal pressure)
b) Possibility of hazardous reactions	None known
c) Conditions to avoid	Long-time leaving at high temperature/high humidity
d) Incompatible materials	Strong acids/alkali
e) Hazardous decomposition products	No data

11. Toxicological information

a) Epoxy resin1 & 2	
- Acute toxicity	Oral Rat LD50>1000mg/kg/day/day/2w
- Corrosive and Irritant property	No data
- Mutageniceffect	Positive
b) Amorphous silica	
- Route of entry	It may cause absorption in the body by inhalation, dermal and oral ingestion.
- Irritant property	It is irritating to eyes, skin, and respiratory tract.
- Carcinogenic effects	IARC:3(the agent is not classifiable as to its carcinogenicity to humans)
- Acute toxicity, isensitizing effects	No data
c) Carbon Black	
- Acute toxicity	Oral LD50(Rat) > 8000mg/kg
	Eye contact (Rabbit) Non-irritative
	Skin contact (Rabbit) Non-irritative
- Carcinogenic effects	IARC:Group 2B(The agent is possibly carcinogenic to humans)
	ACGIH:Group A4(The agent is not classifiable as a human carcinogen)
	NTP: Not specified
- Irritating, sensitizing effects	No data

12. Ecological information

Ecotoxicity, persistence, degradability, and other adverse effects No data

13. Disposal considerations

Please follow your country and your region requirements for waste disposal.

14. Transport information

Transport precaution	Comply with the general precaution on other fragile products stated in Section 7 Handling and storage precautions Check no container damage and no leakage. Prevent products from shock, tumbling, falling and damage during loading, and assuredly prevent cargo loosening.
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15. Regulatory information

It is your responsibility to obtain the regulatory information with regard to this substances from the authority in your country/state/district, etc.

16. Other information

a) Information source and references

- 1) JIS MSDS of chemical substance, etc. JIS Z 7250:2005
- 2) JIS MSDS of chemical substance based on GHS. JIS Z 7251:2006
- 3) NITE Classified substance of GHS of National Institute of Technology and Evaluation. Substance List of GHS Classification (04.Apr.2007)
- 4) 2007 Threshold Limit Values for Chemical Substances and Physical Agents ACGIH(2007)
- 5) Handbook of Danger & Harm of Chemicals (Japan Industrial Safety &Health Association 1992.8)
- 6) International Chemical Safety Cards (The Chemical Daily 1992.8)
- 7) Data-book of Hazardous Chemical Materials 2nd edition (Tokyo Fire Department 1992.4)
- 8) RTECS(Registry of Toxic Effects Chemical Substances 1986-87)
- 9) Sax's Dangerous Properties of Industrial Materials 8th Edition
- 10) Classification and carcinogen and its criteria (JETOC 1992.10)
- 11) Information on carcinogenity of silica (JETOC Information B Vol.19 No.10)
- 12) Regulations on Chemical Products Application (The Chemical Daily 1992.8)

For further information or inquiries, please consult Semiconductor Materials Div.,
Encapsulation Materials R&D Dept.

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The information herein is based on currently available information from various engineering publications including our company data.

It is the user's responsibility to determine the suitability of this information for the adoption of necessary safety precautions.

The information herein is based on currently available information from various engineering publications according to our investigation at the time of preparation.

However, please understand that we reserved the right to revise MSDS periodically releases of according to revision of laws and regulations, or new toxicity test results.