

MATERIAL SAFETY DATA SHEET

1. [CHEMICAL PRODUCT & COMPANY IDENTIFICATION]

CHEMICAL PRODUCT NAME : HITACHI CHEMICAL MOLDING COMPOUND,
CEL-9220HF 13 series/CEL-X-9220HF13 series
NAME OF MANUFACTURER : HITACHI CHEMICAL Co.,Ltd
ADDRESS :1772-1 Kanakubo.Yuki Ibaraki 307-0015 Japan
NAME OF SECTION : Semiconductor Materials Div. : H.Yoshizawa
TEL.No. : +81-296-32-8111, FAX No. : +81-296-32-8381 (Japan)

2. [COMPOSITION/INFORMATION ON INGREDIENTS]

SUBSTANCE/MIXTURE : MIXTURE
INGREDIENTS AND COMPOSITION :

Chemical Name	Composition	Chemical Formula	CAS No.
Epoxy Resin-1	2~5%	-	Trade Secret
Epoxy Resin-2	1~3%	-	Trade Secret
Phenol Resin	2~5%	-	Trade Secret
Silica	77~92%	SiO ₂	60676-86-0
Carbon Black	appox.0.2%	C	1333-86-4
Metal hydroxide	1~10%	-	Trade Secret
Others	max.5%	-	-

UN CLASS AND UN NUMBER : Not applicable

3. [HAZARDS IDENTIFICATION]

CLASS NAME OF HAZARDOUS CHEMICALS FOR MSDS IN JAPAN : Not applicable
PHYSICAL AND CHEMICAL HAZARDS : No data of mixture
ADVERSE HUMAN HEALTH EFFECTS : No data of mixture

4. [FIRST-AID MEASURES]

EYE CONTACT :Gently rinse the affected eyes with clean water for at least 15 minutes. Immediately call for a physician.
SKIN CONTACT :Thoroughly wash material off the skin with soap and water. If irritation persists, arrange for transport to the nearest medical facility for examination and treatment by a physician as soon as possible.
INHALATION :If affected, move individual to fresh air, if breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Keep person warm, calm, and seek immediately medical attention.
INGESTION :Try to vomit and rinse mouth with water. Give the person plenty of water and arrange for transport to the nearest medical facility for examination and treatment by a physician as soon as possible.

5. [FIRE-FIGHTING MEASURES]

EXTINGUISHING MEDIA : Dry chemical powder, carbon dioxide, foam, dry sand.
SPECIFIC HAZARDS WITH REGARD TO FIRE-FIGHTING MEASURES :

- Dry chemical powder, carbon dioxide or dry sand should be used for small fires.
- Apply water from a safe distance to cool and protect surrounding area. Move container from fire areas if it can be done without risk.
- Firefighters should wear proper protective equipments.
- Evacuate personnel from area of fires.

6. [ACCIDENTAL RELEASE MEASURES]

- Sweep up in a bag and clean up by a vacuum cleaner.
- Wear proper protective equipments .
- Wipe off residual spill using paper soaked with methanol or acetone.
- Consult an expert on the disposal of recovered material.

7. [HANDLING AND STORAGE]

- Wear proper protective equipments to avoid direct contact and inhalation.
- Use with local exhaust ventilation.
- Keep the products sealed and kept in the cold room, away from direct sunlight and under the Temperature of 5°C.

8. [EXPOSURE CONTROL / PERSONAL PROTECTION]

CONTROL PARAMETERS :

- ACGIH TLV (2004) TWA 0.1mg/m³(SILICA)
- ACGIH TLV (2004) TWA 3.5mg/m³(carbon black)

ENGINEERING MEASURES :

- Do not use in areas without adequate ventilation and local exhaust ventilation.
- Set up the shower and the washing eyes equipment near the working area.

PERSONAL PROTECTIVE EQUIPMENTS :

- RESPIRATORY PROTECTION : Dustproof mask.
- EYE PROTECTION : Safety goggles or face shield.
- HAND,SKIN AND BODY PROTECTION : Chemical-resistant gloves boots and apron.

9. [PHYSICAL & CHEMICAL PROPERTIES]

- APPEARANCE : Gray tablet or powder(product).
- DENSITY : 1.98~2.08(product)
- BOILING POINT : 2230°C(SILICA)
- MELTING POINT : 1710°C(SILICA)
- DECOMPOSITION POINT : approx. 300°C(product)
- MELTING POINT : 70~80°C(product)
- VAPOR PRESSURE : No data
- SOLUBILITY IN WATER : Not soluble(product)

10. [PHYSICAL HAZARD(STABILITY & REACTIVITY)]

This product is considered a stable material under normal and anticipated storage and handling condition.

PHYSICAL HAZARD	PRODUCT
FLASH POINT (°C)	(including flame retarder) ^{*)}
AUTOIGNITION TEMP. (°C)	approx.600°C

*) UL-94 V-0

11. [TOXICOLOGICAL INFORMATION]

TOXICOLOGICAL INFORMATION OF SILICA

- ROUTE OF ENTRY : It may cause absorption in the body by inhalation, dermal and oral.
- CORROSIVE AND IRRITANT PROPERTIES : It is irritating to eyes skin, mucous membrane and respiratory tract. Repeated or prolonged contact may cause dermatitis.
- ACUTE TOXICITY : No data available.
- CARCINOGENIC EFFECTS IARC : Group 3
- MUTAGENIC EFFECTS : No data available.

TOXICOLOGICAL INFORMATION OF Carbon Black

ACUTE TOXICITY : Oral LD50(rat) >8,000 mg/kg
Eye contact (Rabit) Non-Irritative
Skin contact (Rabit) Non-Irritative

ALLERGENIC AND SENSITIZING EFFECTS : No data available.

CARCINOGENIC EFFECTS IARC : Group 2B
ACGIH : Group A4

12. [ECOLOGICAL INFORMATION]

- No data

13. [DISPOSAL CONSIDERATION]

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

14. [TRANSPORT INFORMATION]

Please follow the notes of treatment and storage.

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]

INQUIRY OF THE INFORMATION CONTAINED HEREIN :

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Semiconductor Materials Div. : H.Yoshizawa
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