



SAFETY DATA SHEET

1. Product and company identification

Name of the chemical **SUMIKON® EME-G311A Type C**

Recommended use and Limitations on use

Recommended use For Semiconductors.

Limitations on use For industrial use only.

Name, address and telephone of manufacturer, importer or supplier

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SDS number

P004039

2. Hazards identification

Hazard classification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Not classified.

*Hazards not stated here are "Not classified", "Not applicable" or "Classification not possible".

Label elements

Symbols None.

Signal word None.

Hazard statement

None.

Precautionary statement

Prevention Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.

Response IF exposed or concerned: Get medical advice/attention.

Storage Store in accordance with local/regional/national/international regulation.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

None known.

3. Composition/information on ingredients

Substance or mixture Mixture

Chemical properties	CAS Number	Concentration (%)
Epoxy Resin A	Trade Secret	1 - 5
Epoxy Resin B	Trade Secret	1 - 5
Epoxy Resin C	Trade Secret	0.1 - 1
Phenol Resin A	Trade Secret	1 - 5
Phenol Resin B	Trade Secret	1 - 5
Silica(Amorphous) A	60676-86-0	50 - 60
Silica(Amorphous) B	7631-86-9	25 - 35
Metal Hydroxide	Trade Secret	1 - 5
Carbon Black	1333-86-4	0.1 - 1

Composition comments Disclosure of composition information is based on the interpretation of the Regulation of Labeling and Hazard Communication of Hazardous Chemicals.
The range of Concentration is greater than or equal to the lower limit but less than the upper limit

4. First aid measures

First aid measures for different exposure routes

Inhalation	Move to fresh air.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms and effects Irritation of eyes and mucous membranes. Dusts may irritate the respiratory tract, skin and eyes.

Personal protection for first-aid responders First aid personnel must wear protective gloves/protective clothing/eye protection/face protection.
IF exposed or concerned: Get medical advice/attention.

Notes to physician Symptoms may be delayed.

5. Fire-fighting measures

Extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Extinguishing media to avoid	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards during fire fighting	Development of hazardous combustion gases or vapours possible in the event of fire.
Special fire fighting procedures	Move containers from fire area if you can do so without risk.
Protection of fire-fighters	Wear suitable protective equipment. Use personal protective mask and fight fire from upwind, to avoid fumes upon combustion.
General fire hazards	No unusual fire or explosion hazards noted.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

Spill cleanup methods Stop the flow of material, if this is without risk. Collect dust using a vacuum cleaner equipped with HEPA filter.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Avoid the generation of dusts during clean-up. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. For waste disposal, see section 13.

7. Handling and storage

Handling

Technical measures No specific recommendations.

Local and general ventilation Provide appropriate exhaust ventilation at places where dust is formed.

Precautions Minimise dust generation and accumulation.

Safe handling advice Avoid prolonged exposure.
Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Storage

Technical measures No specific recommendations.

Suitable storage conditions Keep container tightly closed. Store in a well-ventilated place. Guard against dust accumulation of this material.
Store away from incompatible materials (see Section 10 of the SDS). Keep dry and cool below 5°C for quality.

Incompatible materials Strong oxidising agents. For further information, please refer to section 10.

Safe packaging materials Store in original tightly closed container.

8. Exposure controls/personal protection

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

Occupational exposure limits

Taiwan. OELs. (Standards of Permissible Exposure Limits at Workplace)

Components	Type	Value
Carbon Black (CAS 1333-86-4)	TWA	3.5 mg/m ³

Exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Carbon Black (CAS 1333-86-4)	TWA	3 mg/m ³	Inhalable fraction.
Metal Hydroxide	TWA	1 mg/m ³	Respirable fraction.

Biological limit values No biological exposure limits noted for the ingredient(s).

Personal protective equipment

Respiratory protection Wear respirator with dust filter.

Hand protection Use protective gloves as required.

Eye protection Wear safety glasses with side shields (or goggles).

Skin and body protection Use personal protective equipment as required.

Individual protection measures, such as personal protective equipment

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance**

Physical state	Solid.
Form	Tablet. Powder.
Colour	Black.

Odour Epoxy.

Odour threshold Not available.

Melting point/freezing point Not available.

pH Not available.

Boiling point, initial boiling point, and boiling range Not available.

Flammability (solid, gas) Not available.

Flash point Not available.

Decomposition temperature Not available.

Auto-ignition temperature Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit – upper (%) Not available.

Vapour pressure Not available.

Vapour density Not available.

Density Not available.

Solubility(ies)

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Evaporation rate Not available.

Other data

Explosive properties Not explosive.

Oxidising properties Not oxidising.

Specific gravity 1.8 - 2.2

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Stability Stable under recommended storage conditions.

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

Conditions to avoid Contact with incompatible materials. Keep away from heat, moisture and sunlight for quality.

Incompatible materials Strong acids, alkalis and oxidizing agents.

Hazardous decomposition products Toxic gas.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Dust may irritate respiratory system. Prolonged inhalation may be harmful.
Skin contact	Dust or powder may irritate the skin.
Eye contact	Dust may irritate the eyes.
Ingestion	Expected to be a low ingestion hazard.

Symptoms Irritation of eyes and mucous membranes. Dusts may irritate the respiratory tract, skin and eyes

Information on toxicological effects

Acute toxicity Not known.

Components	Species	Test results
Carbon Black (CAS 1333-86-4)		
Acute		
Oral		
LD50	Rat	> 8000 mg/kg
Metal Hydroxide		
Acute		
Oral		
LD50	Rat	> 5000 mg/kg
Silica(Amorphous) A (CAS 60676-86-0)		
Acute		
Oral		
LD50	Rat	> 22500 mg/kg
Silica(Amorphous) B (CAS 7631-86-9)		
Acute		
Oral		
LD50	Rat	>= 22500 mg/kg

Routes of exposure Inhalation. Skin contact. Eye contact.

Respiratory or skin sensitisation

Respiratory sensitisation Not available.

Skin sensitisation This product is not expected to cause skin sensitisation.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Risk of cancer cannot be excluded with prolonged exposure.

ACGIH Carcinogens

Metal Hydroxide (CAS Trade Secret) A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Carbon Black (CAS 1333-86-4) 2B Possibly carcinogenic to humans.
Silica(Amorphous) A (CAS 60676-86-0) 3 Not classifiable as to carcinogenicity to humans.
Silica(Amorphous) B (CAS 7631-86-9) 3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not available.

Specific target organ toxicity - repeated exposure Not available.

Aspiration hazard Not available.

Chronic toxicity or long-term toxicity Prolonged inhalation may be harmful.
Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulation	Not available.
Mobility in soil	No data available for this product.
Other hazardous effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal considerations	
Residual waste	Dispose in accordance with local regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.
Local disposal regulations	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

14. Transport information

IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Specific precautions	Keep cool below 5°C. Keep containers tightly closed. And avoid leaks, spills or collapse of cargo to avoid damage to containers.

15. Regulatory information

Applicable regulations	This safety data sheet was prepared in accordance with the Rules on Hazardous Communication of Dangerous Materials and Toxic Materials. All components are on the Taiwan's existing chemicals inventory list.
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Taiwan Hazard - Toxic Materials: Classification

Silica(Amorphous) A (CAS 60676-86-0)	Other designated chemical
Silica(Amorphous) B (CAS 7631-86-9)	Other designated chemical

Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste

Not listed.

Standards on Workplace Atmosphere of Dangerous and Hazardous Materials

Carbon Black (CAS 1333-86-4)	Listed.
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GHS Classification List: GHS implementation phase 1, 2 and 3 (CLA No. 0980145063, 0990146707, and 1020146801)

Carbon Black (CAS 1333-86-4)	CARBON BLACK (Priority Management Chemicals: Priority 2)
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16. Other information

References

- NLM: Hazardous Substances Data Base
HSDB® - Hazardous Substances Data Bank
- ACGIH (2015)
- EPA: AQUIRE database
- IARC (vol. 1~106)
- Taiwan. Dangerous Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)
- Taiwan. OELs. (Standards on Workplace Atmosphere of Dangerous and Hazardous Materials)
- Taiwan. Toxic Chemical Substances (TCS) (List of Toxic Chemical Substances announced by the Environmental Protection Administration)
- Taiwan. CNS15030 Z1051: Classification and Labeling of Chemicals
- UN. Globally Harmonized System of Classification and Labelling of Chemicals (GHS) ST/SG/AC.10/30/Rev.4
- Japan. GHS Classifications of Regulated Chemicals (NITE)

Disclaimer

SUMITOMO BAKELITE CO., LTD. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

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