Safety Data Sheet (SDS)

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Applicable products CHUKOH FLO™ Copper-Clad Laminates CGP-500series, CGS-500series, CGF-500series、CGN-500series, CH2868D

1. Product and company identification

Product name	See the applicable products above.
Company name	CHUKOH CHEMICAL INDUSTRIES, LTD.
Address	ATT New Tower 10F, 2-11-7, Akasaka, Minato-ku, Tokyo
Telephone	03-6230-4414/81-3-6230-4417
Fax	03-6230-4413/81-3-6230-4446
Recommended use and restrictions on use	For industrial use

2. Hazards identification

GHS Classification

Not applicable

3. Composition/information on ingredients

Substance/Mixture Mixture

Chemical name or generic name	Concentration or concentration ranges	Chemical formula	Reference No. in gazetted list in Japan		CAS No.
			Chemical Substances Control Law	Industrial Safety and Health Act	
Fluoro resin	12～95%	–	–	–	–
Glass	2.0～34%	Not identifiable	Not applicable	Not known	65997-17-3
Copper	0.5～85%	Cu	Not applicable	Existing	7440-50-8

Impurities and stabilizing additives which contribute to the classification of the substance: No information available

4. First-aid measures

Inhalation

In case of inhaling particles or dust of the product, gargle sufficiently.
If fumes from heating or burning are inhaled, remove to fresh air and keep at rest in a position comfortable for breathing.
Seek medical advice/attention if you feel unwell.

Skin contact

Wash with plenty of soap and water.
If molten polymer contacts skin, cool rapidly with cold water.
Do not attempt to peel polymer from skin.
Seek medical advice/attention if irritation occurs.

Eye contact

Flush eyes cautiously with water for several minutes.
Seek medical advice/attention if irritation persists.

Ingestion

Rinse mouth.
Seek medical advice/attention if you feel unwell.

5. Fire-fighting measures

Extinguishing media

Use extinguishing media appropriate for surrounding fire:
Water, foam, powder, etc.

Specific hazards

This product is hardly flammable.
Fire may produce irritating, corrosive, and/or toxic gas.

Specific fire-fighting procedures	Fight fire from maximum distance and use unmanned hose holders or monitor nozzles. Move product from fire area if you can do so without risk.
Special protective equipment and precautions for firefighters	Wear self-contained breathing apparatus (SCBA). Firefighters should wear protection clothing and self-contained breathing apparatus (SCBA).

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Wear suitable protective equipment (see Section 8, Exposure controls/personal protection) to prevent inhalation and exposure of eyes or skin.
Environmental precautions	Avoid discharge to rivers and environmental effects.
Methods and materials for containment and cleaning up	Break into small pieces. Collect if scatter. Dispose in accordance with Section 13.

7. Handling and storage

Handling		
	Technical measures	Install equipment in Section 8, Exposure controls/personal protection. Wear protective equipment.
	Precautions for safe handling	Please be careful for a wound made by cutting with product's edge. Watch out for fire. Ensure good ventilation/exhaustion. Wash hands thoroughly after handling.
	Avoidance of contact	See Section 10, Stability and reactivity.
	Hygiene measures	Wash hands thoroughly after handling.
Storage		
	Conditions for safe storage	Stable at normal storage conditions. Storage at or below 25℃ and 60% RH is preferred. Keep away from oxidizing agents.
	Safe containers and packaging materials	No restriction for packaging materials. Use containers which will not be broken.

8. Exposure controls/personal protection

Allowable concentration		Not set
Engineering measures		Provide good ventilation and local exhaust ventilation system during heating process.
Protective equipment	Respiratory protection	Wear appropriate respiratory protection if ventilation is not enough.
	Hand protection	Wear appropriate gloves.
	Eye protection	Wear eye protection.
	Skin and body protection	Wear personal protective equipment including protective clothing and protective mask if necessary.

9. Physical and chemical properties

Appearance	Physical state	Solid
	Form	Boad
	Color	Red copper
Odor		Odorless
Odor threshold		Not available
pH		Not available
Melting point/freezing point		Not available
Boiling point, initial boiling point,		Not available
Flash point		Not available
Evaporation rate (butyl acetate=1)		Not available
Flammability (solid, gas)		Flame Retardancy

Flammable/explosive limit	Lower	Not available
	Upper	Not available
Vapor pressure		Not available
Vapor density (Air=1)		Not available
Specific gravity (density)		Not available
Solubility		Insoluble in water.
Partition coefficient (n-octanol/water)		Not available
Autoignition temperature		Not available
Decomposition temperature		Not available
Viscosity		Not available

10. Stability and reactivity

Reactivity	Not available
Chemical stability	Stable under normal storage and handling conditions. May react with metal powders such as aluminum and magnesium or with fluorine compounds such as fluorine and chlorine trifluoride, and cause fire and explosion. Decomposes on heating or burning, emitting toxic fumes including those of hydrogen fluoride.
Possibility of hazardous reactions	Hazardous reaction or polymerization generating excessive pressure/heat will not occur.
Conditions to avoid	Heat. Contact with incompatible materials.
Incompatible materials	Metal powders such as aluminum and magnesium or fluorine compounds such as fluorine and chlorine trifluoride.
Hazardous decomposition products	Thermal decomposition of this product may evolve the following decomposition products at the following temperatures: Carbonyl fluoride and hydrogen fluoride (above 400℃). Tetrafluoroethylene (above 430℃). Hexafluoropropylene (above 440℃). Perfluoroisobutylene (above 475℃).

11. Toxicological information

Acute toxicity	Oral	Not available
	Dermal	Not available
	Inhalation (vapor)	Not available
	Inhalation (dust)	Not available
Skin corrosion/irritation		Not available
Serious eye damage/eye irritation		Not available
Respiratory sensitization		Not available
Skin sensitization		Not available
Germ cell mutagenicity		Not available
Carcinogenicity		Not available
Reproductive toxicity		Not available
Specific target organ toxicity (single exposure)		Not available
Specific target organ toxicity (repeated exposure)		Not available
Aspiration hazard		Not available

Others	Effects on humans	Inhalation of fumes from burning may produce polymer fume fever, a temporary flu-like condition with fever, chills and cough. This may last for a whole day and night. Skin absorption will not occur. There are no reports of sensitization.
	Effects of hydrogen fluoride	Inhalation of low concentrations of hydrogen fluoride can initially include symptoms of choking, coughing, and severe eye, nose, and throat irritation, fever, chills for one to two days, followed by difficulty in breathing, cyanosis, and pulmonary edema. Overexposure to hydrogen fluoride can injure the liver and kidneys.
	Effects of carbonyl fluoride	Skin: Irritation with discomfort or rash Eye: Corrosion with corneal or conjunctival ulceration Upper respiratory passage: Irritation Lung: Temporary irritation effects with cough, discomfort, difficulty in breathing, or shortness of breath (Individuals with pre-existing diseases of the lungs may have increased susceptibility to the toxicity after excessive exposures to thermal decomposition products.)

12. Ecological information

Hazardous to the aquatic environment (acute)	Not available
Hazardous to the aquatic environment (long-term)	Not available
Hazardous to the ozone layer	Does not contain any substances that deplete the ozone layer listed in Annexes to the Montreal Protocol.

13. Disposal considerations

Waste from residues	Dispose in accordance with applicable laws and regulations and standards of local governments. Entrust the disposal to a licensed waste disposal contractor or a local public body who conducts the disposal. When entrusting the disposal to a disposal contractor, notify the danger and toxicity thoroughly to the contractor.
Contaminated container and packaging	Dispose in accordance with applicable laws and regulations and standards of local governments.

14. Transport information

International regulations	Regulatory Information by Sea	Not dangerous goods
	Regulatory Information by Air	Not dangerous goods
Domestic regulations (Japan)	Land transport regulations	Not applicable
	Marine transport	Not dangerous goods
	Air transport regulations	Not dangerous goods
Special safety measures		Confirm that there is no damage, corrosion, or leakage of the containers before transportation. Avoid direct sunlight at transportation. Load containers not to cause damage, corrosion or leakage and thoroughly prevent load collapse. Do not stack heavy objects.
Emergency Response Guidebook No.		None

15. Regulatory information

Industrial Safety and Health Act	Hazardous Substances to be notified in terms of Whose Names, etc (Article 57-2 of the Act, and Attached Table 9 of Article 18-2 of the Enforcement Order) (Copper and its compounds)

16. Other information

	Hazard statements herein are made based on the assumption of industrial use and general handling. Handle with care at the actual use by referring to the hazard statements herein.
Restrictions on use	This product is not intended for medical use. Do not use this product for implant or in a way that will contact with the body fluid or tissue. Consult with us in advance if it is expected to use the product in medical field.
References	SDS made by raw material manufacturers.

The information herein may be revised if any new findings are obtained.
Values of concentration and physical and chemical properties are not guaranteed values.
Hazards identification was prepared based on the documents, information and data available at the time of preparation, but it does not mean that all documents, information and data are covered.