

## Safety Data Sheet (SDS)

Date prepared 1-Jun-2017  
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Applicable products CHUKOH FLO™ Copper Clad Laminate  
 CGA-500 DF3002(0.5t)、DF3002-1(0.54t)、DF3002-2(0.51t)、DF3002-3(0.54t)

### 1. Product and company identification

Product name	See the applicable products above.
Product code	-
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	For industrial use
Restrictions on use	For industrial use
Information on domestic manufacturers, etc.	See above

### 2. Hazards identification

GHS Classification	Not applicable
GHS label elements	Not applicable
Pictures or symbols	No information available
Warning statements	No information available
Hazard information	No information available
Cautionary statements	No information available
Other hazards not related to or addressed by the GHS classification	No information available
Summary of important indications and possible emergencies	No information available
Other	Not hazardous under normal handling. Heating fluorocarbon resin produces pyrolysis products (fumes), which may cause eye, nose, and lung irritation if inhaled.

### 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	34-46%	-	-	-	-
Glass	21-35%	Not identifiable	Not applicable	Not known	65997-17-3
Copper	14-26%	Cu	Not applicable	Existing	7440-50-8
Aluminum oxide	4.5-5.5%	Al <sub>2</sub> O <sub>3</sub>	1-23	-	1344-28-1

Ingredients contributing to GHS classification 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.
The most important manifestations of acute and delayed symptoms	No information available
Precautions necessary for the protection of persons who provide first-aid measures	No information available
Special precautions for physicians	No information available

#### 5. Fire-fighting measures

Appropriate fire extinguishing media	Use extinguishing media appropriate for surrounding fire: Water, foam, powder, etc.
Fire extinguishing media that should not be used in case of fire	No information available
Specific fire hazards	This product is hardly flammable. Fire may produce irritating, corrosive, and/or toxic gas.
Specific fire extinguishing methods	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).
Cautions	When fluorocarbon resin is exposed to high temperatures, it produces harmful particulates, fumes, and gases. In case of fire, evacuate upwind as far as

#### 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.
Measures to prevent secondary accidents	No information available

#### 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 Hygiene measures See Section 10, Stability and reactivity.  
 Wash hands thoroughly after handling.

Storage

Conditions for safe storage Stable at normal storage conditions. Storage at or below 25°C and 60% RH is preferred.

Safe containers and packaging materials No restriction for packaging materials. Use containers which will not be broken.

8. Exposure controls/personal protection

Control concentration

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 eye protection.

Eye protection Wear personal protective equipment including protective clothing and protective mask if necessary.

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

Color Red copper

Odor

Odorless

Melting point/freezing point

Not available

Boiling point, initial boiling point, and boiling range

Not available

Flammability

Flame Retardancy

Lower explosion limit and upper explosion limit/flammable limit

Lower Not available

Upper Not available

Flash point

Not available

Autoignition temperature

Not available

Decomposition temperature

Not available

pH

Not available

Viscosity

Not available

Solubility

Insoluble in water.

Partition coefficient (n-octanol

Not available

Vapor pressure		Not available
Density and/or relative density		Not available
Relative gas density		Not available
Particle characteristics		Not available
Other data		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°C). Tetrafluoroethylene (above 430°C). Hexafluoropropylene (above 440°C). Perfluoroisobutylene (above 475°C).
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 or 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
Swallowing hazard		Not available
Others		Thermal decomposition of fluoropolymers may generate polymer fumes, hydrogen fluoride, carbonyl fluoride, and perfluoroisobutylene. The toxicity information is as follows.

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.)
Effects of perfluoroisobutylene	Even trace amounts are extremely toxic.

## 12. Ecological information

### Ecotoxicity

Not available

Handle with care as leakage or disposal may affect the environment.

In particular, ensure that the product does not flow directly into the ground, rivers or drains.

Persistence and degradability  
ecological accumulative property  
Mobility in soil  
Hazardous to the ozone layer

Not available

Not available

Not available

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

UN number

Not dangerous goods

Item (UN transport name)

Not dangerous goods

UN Classification

Not dangerous goods

Container grade

Not dangerous goods

marine pollutant

Not dangerous goods

Liquid substances transported in bulk according to MARPOL 73/78 Annex II and IBC Code

Not dangerous goods

Special safety measures for transportation or means of transportation

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.

Regulatory information on domestic regulations, if any

Not applicable

15. Regulatory information

Applicable laws and regulations and information on requirements imposed by such laws and regulations

Pollutant Release and Transfer Register (PRTR)

Not applicable

Industrial Safety and Health Law

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, Aluminum oxide)

Poisonous and Deleterious Substances Control Act

Not applicable

Other applicable laws and regulations and information on requirements imposed by

Not applicable

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.