

## Safety Data Sheet (SDS)

Date prepared 1-May-2001  
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Applicable products CHUKOH FLO™ PFA tube

## 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  
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 Substance

Chemical name or generic name	Concentration or concentration ranges	Reference No. in gazetted list in Japan		CAS No.
		Chemical Substances Control Law	Industrial Safety and Health Act	
Per Fluoro-Alkoxy alkane polymer(PFA)	100%	6-944	6-944	26655-00-5

Ingredients contributing to GHS classification No information available

## 4. First-aid measures

Inhalation If fumes from heating or burning are inhaled, remove to fresh air and keep at rest in a position comfortable for breathing.

Skin contact Seek medical advice/attention if you feel unwell.  
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
<b>5. Fire-fighting measures</b>		
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		Fire may produce irritating, corrosive, and/or toxic gas.
Specific fire extinguishing methods		Move product from fire area if you can do so without risk. Fight fire from maximum distance and use unmanned hose holders or monitor nozzles.
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 possible to avoid inhalation.
<b>6. Accidental release measures</b>		
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
<b>7. Handling and storage</b>		
Handling		
	Technical measures	Install equipment in Section 8, Exposure controls/personal protection. Wear protective equipment.
	Precautions for safe handling	Prohibit the use of heat, sparks, and fire in the surrounding area. Watch out for fire. Do not carry cigarettes, cigars or tobaccos and do not smoke in the workplace as decomposition gas may be inhaled by smoking if the substance contacts them. Ensure good ventilation/exhaustion. Avoid breathing dust/fume. 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. 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

Control concentration	No settings
Allowable concentration	No settings
Engineering measures	In a process to heat over 260°C, good ventilation is necessary and also local exhaust equipment is to be installed.

## 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	Translucent White

## Odor

Odorless

## Melting point/freezing point

280–310°C

## 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/water)

Not available

## Vapor pressure

Not available

## Density and/or relative density

2.1–2.2g/cm<sup>3</sup>

## Relative gas density

Not available

## Particle characteristics

Not applicable

## Other data

Not available

## 10. Stability and reactivity

## Reactivity

Hazardous reactions will not occur under normal conditions.  
Begins to decompose, very slowly, at temperatures above 260°C. Thermal decomposition is more rapid at temperatures above 400°C.

## 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.

## 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 LD50 in rat : 11,000mg/kg

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

It falls under Group 3 (cannot be classified as carcinogenic) in the IARC (International Agency for Research on Cancer) classification.

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 health

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, take measures to prevent the product from flowing into the ocean via soil, drains and rivers.

Persistence and degradability

Not available

ecological accumulative property	Not available
Mobility in soil	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	
Information on safe and environmentally desirable disposal or recycling of chemicals, contaminated containers and packaging	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.
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	Not applicable
Poisonous and Deleterious Substances Control Act	Not applicable
Other applicable laws and regulations and information on requirements imposed by such laws and regulations	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.