

MATERIAL SAFETY DATA SHEET

No. Z-1590E-04

Identity (As Used on Label and List)

CYTOP CTL-809M

Section 1

Manufacturer's Name

ASAHI GLASS Co., Ltd.

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- Date Prepared: July 17, 1997
- Date Revised: December 2, 2002

Section II- Hazardous Ingredients/Identity Information

Hazardous Components

Material: Poly1,1,2,4,4,5,6,7,7 -decafluor -3-oxa -1,6-heptadiene

CAS No. 101182-89-2

OSHA (1993) PEL-TWA: N/E

ACGIH (1997) TLV-TWA: N/E

%: 8-10%

Material: Perfluorotrialkylamine

CAS No. 311-89-7

OSHA (1993) PEL-TWA: N/E

ACGIH (1997) TLV-TWA: N/E

%: 90-92%

NOTE : For industrial use only. Not intended for use as a medical device or drug.

Section III- Physical/Chemical Characteristics

Boiling Point: 174 deg.C
Specific Gravity: 1.88-2.03
Vapor Pressure (kPa): N/A
Melting Point: Not Determined
Vapor Density (Air = 1): N/A
Evaporation Rate (Ethylether): N/A
Solubility in Water: Insoluble
Appearance and Odor: Colorless , clear, odorless liquid.

Section IV- Fire and Explosion Hazard Data

Flash Point (Method Used): None (Seta flash CC)

Flammable Limits: LEL = N/A; UEL = N/A

Extinguishing Media : Non flammable

Special Fire Fighting Procedures:

When fire fighting conditions are severe and total thermal decomposition of the product is possible, wear full protective clothing including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head. No unusual effects are anticipated during fire extinguishing operations. Avoid breathing the products and substances that may results from the thermal decomposition of the product or the other substances in the fire zone. Keep containers cool with water spray when exposed to fire to avoid rupture.

Unusual Fire and Explosion Hazards:

Exposure to extreme heat can give rise to thermal decomposition. See section VI, Health Hazard Data.

Section V- Reactivity Data

Hazardous Components

- **Stability:** Stable
- **Condition to Avoid:** When heated at temperature higher than 300deg.C, it decomposes markedly generating harmful gases (hydrogen fluoride, perfluoro isobutylene)

Incompatibility (Materials to Avoid)

Finely divided active metals, alkali and alkaline earth metals.

Hazardous Decomposition or Byproducts

Hydrogen fluoride (HF), Carbon Monoxide, Carbon Dioxide, Perfluoro isobutylene(PFIB) and Carbonyl Fluoride .

Toxic vapors or gases are possible product of thermal decomposition.

Hazardous Polymerization

- Will Not Occur: X
- Conditions to Avoid: See Section VI, Health Hazard Data.

Section VI- Health Hazard Data

Route(s) of Entry

- Inhalation: X
- Skin: X
- Eye: X
- Ingestion: X

Health Hazardous (Acute and Chronic)

Chronic effects: None known.

Carcinogenicity

- NTP: N/E
- IARC Monographs: N/E
- OSHA Regulated: N/E

Signs and Symptoms of Exposure**EYE CONTACT:**

No adverse health effects are expected from eye contact. Product is not expected to produce significant eye irritation. After product has been in use, contaminants may be introduced that may cause eye irritation: signs/symptoms include redness, swelling, pain, and tearing.

SKIN CONTACT:

No adverse health effects are expected from skin contact. After product has been in use, contaminants may be introduced that may cause skin irritation: signs/symptoms include redness, swelling, pain, and itching.

INHALATION:

No adverse health effects are expected from inhalation exposure. Health effects from inhalation are not expected unless the product is over heated and decomposition occurs.

Other Health Hazard Information

If the product is exposed to extreme condition of heat from misuse or equipment failure, toxic

decomposition products that include hydrogen fluoride and perfluoro isobutylene can occur. Hydrogen fluoride has an ACGIH threshold limit value of 3 parts per million parts of air, ppm, of fluoride as a ceiling limit and an OSHA PEL of 3 ppm of fluoride as an eight hour time-weighted average and 6ppm of fluoride as a Short Term Exposure Limit. Perfluoro isobutylene has an ACGIH threshold limit value of 0.01 parts per million parts of air as a ceiling limit or 0.082 milligrams per cubic meter as a ceiling limit.

Emergency and First Aid Procedures

INHALATION:

If exposed to fumes from overheating or combustion, move to fresh air.
Consult a physician if symptoms persist.

SKIN CONTACT:

Wash affected area with soap and water. Flush skin with large amounts of water. If irritation persists, get medical attention.

EYE CONTACT:

Flush eyes with plenty of water for at least 15 minutes.
Consult a physician if symptoms persist.

IF SWALLOWED :

Drink large amount of water. Call a physician.

Section VII- Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled

Observe precautions from other sections.

In accordance with good industrial hygiene practice, provide exhaust ventilation for large spills or in confined spaces. Collect spilled material with an absorbent. Place in an approved container.

Recommended Ventilation

Use with appropriate local exhaust ventilation.

Local exhaust ventilation with a minimum capture velocity of 50 linear feet per minute should be provide for applications at or above the boiling temperature. If interfering air currents are present, minimum capture velocity should be at least 100 linear feet per minute.

Waste Disposal Method

Incinerate in an industrial or commercial facility in the presence of a combustible material.
Combustion products will include HF.

Precautions to Be Taken in Handling and Storing

Keep containers closed to avoid contamination.

Store at room temperature.

No smoking while handling this material.

Section VIII- Control Measures

Respiratory Protection (Specify Type)

Avoid prolonged breathing of vapors. Avoid inhalation of thermal decomposition products. If thermal decomposition occurs, select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: half-mask supplied air respirator, full-face supplied air respirator.

Eye/Skin Protection

Wear safety glasses with side shields. Wear coverall chemical splash goggles and face shield when possibility exists for eye and face contact with solution, wear heat resistant clothing and footwear.

Environmental Data

ASTM G-21-70, Fungal Growth Rating = (Trace Growth < 10% covered) ; COD = Nil;
BOD20 = Nil ; 96-h. LC50, Fathead Minnow (*Pimephales promelas*) = >1000 mg/l (immiscible mixture); U.S Clean Water Act, Section 307, Toxic Pollutants = None.
Bioaccumulation : Condensation degree in fish(carp, 6weeks) 3.3-3.8 (0.1mg/l)
Others : logPow=2.69

Other

Avoid contamination of cigarettes or tobacco with this material.

Section IX- Additional Information

This Material Safety Data Sheet is offered only your information, consideration and investigation. Asahi Glass Co., Ltd. provides no warranties, either express or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein.

This product is not designed, manufactured, or intended for medical uses, including implantation to the body or other applications in direct contact with body fluids or tissues.

- N/A = Not applicable
- N/E = Not established
- PNOR = Particulates not otherwise regulated (OSHA Definition)
- PNOG = Particulates not otherwise classified (ACGIH Definition)

The product is not designed for special applications such as pharmaceutical, medical use.

Remarks:

It comes under the Foreign Exchange and Foreign Trade Control Law of Japan.