

# MATERIAL SAFETY DATA SHEET

---

## 1. Manufacturer Information:

Product name : FLUOROJU LG  
Company : Mitsubishi Plastics, Inc.  
Address : Mitsubishi Jushi Bldg., 1-2-2 Nihonbashihongokucho,  
Chuo-ku, Tokyo 103-0021, Japan  
Department in charge : Electronics & Industrial Film Department  
Tel. : +81-3- 3279-3042  
Fax. : +81-3-3279-6677  
Mail address : mpi7041@cc.mpi.co.jp  
Emergency phone No. : +81-3- 3279-3042

No. 736-002

Revision : July 30, 2010

---

## 2. Summary of hazardous and toxicity

Name of classification : Not applicable  
Physical and chemical hazards : Not applicable  
Adverse human health effects : Not applicable  
Ecological effect : Not applicable

---

## 3. Composition and ingredient

Single or mixture : Single  
Shape : Sheet  
Application : Laminated Glass  
Chemical name : TFE/HFP/VDF Terpolymer resin  
Tetra fluoro ethylene/Hexa fluoro propylene/Vinylidene fluoride Terpolymer  
Official gazette serial No.( Chem.Substance Control Law No) .:(6)-945

### Ingredient & content:

Ingredient:	Content	CAS No.
TFE/HFP/VDF Terpolymer	100%	25190-89-0

Chemical formula :  $(C_2F_4)_l(C_3F_6)_m(C_2H_2F_2)_n$

---

## 4. First aid measures:

Eye contact ( During heating) : Vapors from heated material may cause eye irritation.  
Signs/symptoms may include redness, swelling, pain,  
tearing, and blurred or hazy vision.  
Immediately flush eyes with large amounts of water for at

least 15 minutes. If signs/symptoms persist, get medical attention.

If eye contact with hot materials occurs, DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Immediately flush affected area with plenty of cold water and cover with a clean dressing. Have burn treated by a physician.

Skin contact (During heating) :Thermal burns, Signs/symptoms may include intense pain, redness and swelling, and tissue destruction. Wash affected area with soap and water. If signs/symptoms develop, get medical attention. If skin contact with hot materials occurs: DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Immediately flush affected area with plenty of cold water and cover with a clean dressing. Have burn treated by a physician.

Inhalation(During heating) :Polymer fume fever,Signs/symptoms may include chest pain or tightness, shortness of breath, cough, malaise, muscle aches, increased heart rate, fever, chills, sweats, nausea and headache. Vapors from heated material may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Remove person to fresh air. If signs/symptoms persist, get medical attention.

If swallowed: No need for first aid is anticipated.

(If thermal decomposition occurs) :May be absorbed following inhalation and cause target organ effects.

Ingestion : No health effects are expected.

---

## 5. Fire fighting

Extinguishing media Non-combustible Choose material suitable for surrounding fire.

Protection of fire fighters:

Exposure to extreme heat can give rise to thermal decomposition.

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 head.

Unusual fire and explosion hazards: Not applicable.

Note: See Stability and Reactivity for hazardous combustion and thermal decomposition Information.

---

## 6. Accidental release measures

Sweep up with a vacuum cleaner or a brush.

---

## 7. Caution upon handling and storage

Handling	: Avoid skin contact with hot material. For industrial or professional use only. Store work clothes separately from other clothing, food and tobacco products.
No smoking	: Smoking while using this product can result in contamination of the tobacco and/or smoke and lead to polymer fume fever caused by the formation of the hazardous decomposition products mentioned in the Reactivity Data section of this MSDS.
Storage	: Keep this film away from moisture. In order to avoid the film roll deformed, please store this film in cool and dry space, and do not pile up the roll. Do not keep the film un-packed or similar condition to avoid contamination. In case of Type B, please especially be careful, that is, if store the remaining film after open the package, put the desiccating agent into the roll and pack with moisture-proof film.

---

## 8. Exposure controls

Personal protection	: Engineering controls, Use with appropriate local exhaust ventilation. Provide appropriate local exhaust when product is heated. For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use with appropriate local exhaust ventilation sufficient to maintain levels of thermal decomposition products below their exposure guidelines.
.Personal protective equipment	Eye/Face protection: Avoid eye contact. The following eye protections are recommended: Safety Glasses with side shields, Indirect Vented Goggles. Skin protection: Avoid prolonged or repeated skin contact. Avoid skin contact with hot material. Wear appropriate gloves, when handling this material to prevent thermal burns. Respiratory protection: (During heating) In order to avoid breathing of vapors, use official air-respirator to prevent exposure to thermal degradation products.

---

## 9. Prevention of swallowing:

Wash hands after handling and before eating. Do not eat, drink, or smoke when using this product. Wash exposed areas thoroughly with soap and water.

---

10. Exposure guidelines:

Not established

---

11. Physical and Chemical Properties

Appearance	:Solid (sheet shape formed product)
Color	: Natural
Odor	: Odorless
Autoignition temperature	:>=500 Deg.C (ASTM D 1929)
Flash point	: Not applicable
Flammable limits – LEL	: Not applicable
Flammable limits – UEL	: Not applicable
Boiling point	: Not applicable
Density	: 1.90 – 1.97 g/cm <sup>3</sup> (at 23 Deg.C)
Vapor density	: Not applicable
Vapor pressure	: Not applicable
Specific gravity	: 1.90 - 1.97 (at 23 Deg.C)
PH	: Not applicable
Melting point	: 110 – 130 Deg.C
Solubility in water	: Negligible
Bulk density	: 500 - 1300 kg/m <sup>3</sup> (DIN 53446)
Evaporation rate	: Not applicable
Volatile organic compounds	: Not applicable
Percent volatile	: Not applicable
VOC less H <sub>2</sub> O & Exempt solvents	: Not applicable
Viscosity	: Not applicable

---

12. Stability and Reactivity

Stability: Stable

Materials and conditions to avoid Alkali and alkaline earth metals;

Reactions with metals in powder form occur from 370 degrees C onwards.

Hazardous polymerization: Hazardous polymerization will not occur.

Hazardous decomposition or by-products(at elevated temperature):

Carbonyl fluoride, Carbon monoxide, Carbon dioxide, Hydrogen fluoride, Perfluoroisobutylene

---

13. Toxicological Information

Please contact with listed on 1 - 2 page of the MSDS for Toxicological information on this product.

---

14. Ecological Information

Decomposability/cumulativeness: Not applicable

Oceanic living things: Not applicable

In order to avoid oceanic living things or birds to intake, should not be dumped or released into any ocean or water area.

---

#### 15. Disposal Consideration

Waste disposal method: The film scrap should be reclaimed instead of incinerate.

Transport Information

UN Number: Not applicable

IMO: Not applicable

ICAO: Not applicable

Regulatory Information

Not applicable

---

#### 16. Utilization of above information

The above description has been prepared based on the latest data available. But, the physical properties, hazardous and toxicological information are not guarantee data. The cautions are mentioned for the case of normal handing. In the case of special handling, please apply safety precaution in consideration of application and method of using.

---