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# Material Safety Data Sheet

## Makrolon LF

### 1. Product and Company Identification

Product Name: Makrolon LF  
Chemical Family: Thermoplastic Polymer Sheet  
Chemical Name: Bisphenol A Polycarbonate

### 2. Hazards Identification

Emergency Overview

CAUTION! Color: Natural Form: solid sheets Odor: slight.  
Melted product is flammable and produces intense heat and dense smoke during burning. Irritating gases/fumes may be given off during burning or thermal decomposition. May cause mechanical irritation (abrasion). Contact with hot material will cause thermal burns.

#### Potential Health Effects

Primary Routes of Entry: Inhalation, Skin Contact, Eye Contact

Medical Conditions Aggravated by Exposure: Respiratory disorders

#### HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

##### Skin

Acute Skin  
For Product: Makrolon LF  
Contact with heated material can cause thermal burns.

##### Eye

Acute Eye  
For Product: Makrolon LF  
May cause mechanical irritation.

##### General Effects of Exposure

Acute Effects of Exposure  
For Product: Makrolon LF



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Gases and fumes evolved during the thermal processing or decomposition of this material may irritate the eyes, skin or respiratory tract.

Chronic Effects of Exposure

For Product: Makrolon LF

Not expected to cause any adverse chronic health effects.

Carcinogenicity :

### 3. Composition/Information on Ingredients

Hazardous Components

OTHER INGREDIENTS

Additional types of polycarbonate may be used necessary to adjust the melt flow rate.

### 4. First Aid Measures

Eye Contact

In case of contact, flush eyes with plenty of lukewarm water.

Skin Contact

In case of skin contact, wash affected areas with soap and water. Get medical attention if thermal burn occurs.

Inhalation

If inhaled, remove to fresh air.

Ingestion

Get medical attention.

### 5. Fire-Fighting Measures

Suitable Extinguishing Media: water, foam, dry chemical, carbon dioxide (CO<sub>2</sub>)

Special Fire Fighting Procedures

Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.

Unusual Fire/Explosion Hazards

Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Dust may form explosive mixtures with air.

### 6. Accidental release measures

Spill and Leak Procedures

If molten, allow material to cool and place into an appropriate marked container for disposal.



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### 7. Handling and Storage

Storage Temperature:  
maximum: 93 °C (199.4 °F)

Storage Period  
Not Established

Handling/Storage Precautions  
Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling.  
Avoid breathing dust.

Further Info on Storage Conditions  
Protect equipment (e.g. storage bins, conveyors, dust collectors) with explosion vents.

### 8. Exposure Controls / Personal Protection

Industrial Hygiene/Ventilation Measures  
General dilution and local exhaust as necessary to control airborne vapors, mists, dusts and thermal decomposition products below appropriate airborne concentration standards/guidelines, especially during cutting, grinding and high heat operations.

Respiratory Protection  
Although no exposure limit has been established for this product, the OSHA PEL for Particulates Not Otherwise Regulated (PNOR) of 15 mg/m<sup>3</sup> - total dust, 5 mg/m<sup>3</sup> - respirable fraction is recommended. In addition, the ACGIH recommends 3 mg/m<sup>3</sup> - respirable particles and 10 mg/m<sup>3</sup> - inhalable particles for Particles (insoluble or poorly soluble) Not Otherwise Specified (PNOS).

Hand Protection  
Wear heat resistant gloves when handling molten material.

Eye Protection  
safety glasses with side-shields.

Skin and body protection  
No special skin protection requirements during normal handling and use.

Additional Protective Measures  
Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product. Purgings should be collected as small flat thin shapes or thin strands to allow for rapid cooling.

### 9. Physical and chemical properties

Form:	solid
Appearance:	sheets
Color:	Natural
Odor:	slight
pH:	not applicable
Melting Point:	220 - 230 °C (428 - 446 °F)



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Boiling Point/Range:	not applicable
Flash Point:	> 450 °C (> 842 °F)
Lower Explosion Limit:	Not Established
Upper Explosion Limit:	Not Established
Vapor Pressure:	not applicable
Specific Gravity:	approximately 1.2
Solubility in Water:	Insoluble
Autoignition Temperature:	> 450 °C (> 842 °F)
Decomposition Temperature:	380 °C (716 °F)
Softening Point:	150 - 160 °C (302 - 320 °F)
Bulk Density:	38 - 42 lb/ft <sup>3</sup>

### 10. Stability and Reactivity

**Hazardous Reactions**  
Hazardous polymerization does not occur.

**Stability**  
Stable

**Materials to avoid**  
None known.

**Conditions to avoid**  
None known.

**Hazardous decomposition products**  
By Fire and Thermal Decomposition: Carbon Dioxide; Bisphenol A; Phenol; Carbonic Acid, Diphenyl Ester; Carbon monoxide, hydrocarbons, phenol derivatives

### 11. Toxicological Information

No information available.

### 12. Ecological Information

No information available.

### 13. Disposal considerations

**Waste Disposal Method**  
Waste disposal should be in accordance with existing federal, state and local environmental control laws.

### 14. Transportation information

Land transport (DOT)  
Non-Regulated

Sea transport (IMDG)



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Contact Person:	Product Safety Department
Telephone:	(412) 777-2835
MSDS Number:	000000005287
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