

# Material Safety Data Sheet

## Polycarbonate Panel

### 1. Chemical Product And Company Identification.

- 1.1. Chemical Product.
  - 1.1.1. Polycarbonate photopolymer.
- 1.2. Company Identification.

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### 2. Composition information of ingredients:

- 2.1. Main polymer: Polycarbonate based on Bisphenol A.
- 2.2. Pigments and additives used to enhance specific properties are encapsulated in the polymer resin matter.

### 3. Hazards identification.

- 3.1. No particular hazards known.
- 3.2. The Panels have almost no odour.
- 3.3. Product is a combustible thermoplastic resin. Because of the potential for dense smoke in a fire situation, fire fighters should wear approved self-contained breathing apparatus.
- 3.4. If heated to melt-point the molten plastic can cause severe thermal burns.
- 3.5. Secondary operations, such as grinding, sanding or sawing can produce dust, which may create a respiratory hazard. Dust from secondary fabrication operations may form explosive mixtures in the air. Consequently storage bins and dust collectors should be adequately grounded and ventilated.
- 3.6. Health Hazard Data.
  - 3.6.1. Effect of a single overexposure:



- 3.6.1.1. Swallowing: non-relevant.
  - 3.6.1.2. Skin absorption: profiles are not likely to cause skin irritation. If heated to melt-point the molten plastic can cause severe thermal burns.
  - 3.6.1.3. Inhalation: Unlikely due to physical form.
  - 3.6.1.4. Skin contact: exposure is not expected to cause adverse health effects.
  - 3.6.1.5. Eye contact: Product may cause irritation or injury due to mechanical action.
- 3.6.2. Effect of repeated overexposure:
- 3.6.2.1. Medical conditions aggravated by overexposure - None currently known.
- 3.6.3. Other effects of overexposure - None currently known.

#### 4. First Aid Measures:

##### 4.1. Skin Contact:

- 4.1.1. Wash skin thoroughly with soap and water. Seek medical attention if rash or burn occurs.
- 4.1.2. Burns resulting from accidental contact with molten material must be flushed immediately with cold water.

4.2. **Eye Contact**: Remove contact lenses at once. Immediately flush eyes well with copious quantities of water or normal saline for at least 20-30 minutes. If irritation persists, seek medical attention.

4.3. **Inhalation**: If exposed to combustion fumes in high concentration - bring victim to fresh air. Medical attention needed.

4.4. **Ingestion**: Not probable. If large amount is swallowed, seek medical attention.

#### 5. Fire Fighting Measures:

- 5.1. This material is difficult to ignite and generally requires a continuous external flame source to sustain combustion.
- 5.2. Without flashover fire conditions it will tend to self-extinguish. When forced to burn it will produce a sooty fire.



5.3. Main products of combustion are carbon dioxide and carbon monoxide. Some flame-retardant grades will evolve trace quantities of hydrogen bromide on combustion.

5.4. Combustion products have been found in independent tests to be essentially non-corrosive.

5.5. Extinguishing media:

5.5.1. Water spray or foam. CO<sub>2</sub> is less recommended due to lack of cooling capacity.

5.6. Extinguishing media to avoid.

5.6.1. No information currently available.

5.7. Fire fighting procedures:

5.7.1. Personnel without suitable respiratory apparatus should leave the affected area to prevent exposure to toxic or combustible gases.

5.8. Special Protective Equipment for firefighters.

5.8.1. Positive-pressure self-contained breathing apparatus, protective closing, gas mask approved for acid vapours.

5.9. Unusual Fire And Explosion Hazards:

5.9.1. Hazardous combustion products may include intense heat, dense black smoke, carbon dioxide, carbon monoxide and hydrocarbon fragments.

5.9.2. Combustion products/processing fumes may include trace levels of phenol, alkylphenols, and diarylcarbonates.

5.9.3. Smoke emitted when PC is forced to burn may obscure visibility.

5.9.4. During combustion the base resin does not produce hydrogen cyanide, phosgene, acrolein, hydrogen chloride or sulfur dioxide.

5.9.5. The material is not sensitive to static discharge.

5.9.6. Static electricity discharge sparks possible at handling – avoid vicinity of static discharge sensitive materials.

## 6. Accidental Release Fire Fighting:

6.1. Sweep or gather up material mechanically.



## **7. Handling And Storage:**

- 7.1. Ensure adequate ventilation or exhaust ventilation in the working area.
- 7.2. Dust must be removed by effective exhaust ventilation.
- 7.3. Avoid contact or proximity with PVC plasticizers (phtalates).
- 7.4. Store in a dry place away from moisture, excessive heat and sources of combustion.

## **8. Exposure Controls / Personal Protection:**

- 8.1. Exposure Limits:
    - 8.1.1. No occupational exposure limits established by OSHA, ACGIH, or NIOSH.
  - 8.2. Personal Protection:
    - 8.2.1. Respiratory protection: No special protection needed.
    - 8.2.2. Hand protection / protection gloves: No special protection needed.
    - 8.2.3. Eye protection: No special protection needed.
- Other protective equipment/measures: No special protection needed.

## **9. Physical & Chemical Properties:**

Appearance: flat plastic profiles.

Physical state: solid.

Colour: clear or coloured.

Odour: none.

Density: 1.2 gr/cm<sup>3</sup> at 20°C.

Change In state: Tg=140 - 150 °C.

Boiling point: none.

Viscosity: not relevant.

Solubility in water: none.

PH value: not relevant.

Flash point : >450°C.

Autoignition temp: >650°C .

Flammability limit: none.

Explosion limits: none.

### **Stability and Reactivity:**

- 9.1. Stability: Stable:



- 9.1.1. Conditions to avoid: Excessive heat, or open flame.
- 9.1.2. Incompatible materials: Oxidizing agents or strong mineral acids can cause reaction.
- 9.1.3. Thermal decomposition: Caused by fire or overheating during improper processing. Fumes damaging to health may be released.
- 9.1.4. Hazardous decomposition products:
  - 9.1.4.1. Carbon monoxide (CO) - is highly toxic if inhaled, present in combustion fumes of all organic materials.
  - 9.1.4.2. Carbon dioxide (CO<sub>2</sub>) - in sufficient concentrations can act as an asphyxiate, present in Combustion fumes of all organic materials.

## 9.2. Reactivity:

- 9.2.1. Hazardous polymerization : Will not occur.
- 9.2.2. Hazardous reactions: None.

## 10. Toxicological Information:

- 10.1. Eye: Product not considered as a primary eye irritant.
- 10.2. Skin: Product not considered as a primary skin irritant.
- 10.3. Dermal LD50 (rabbit) >2g/kg estimated.
- 10.4. Acute Oral: Oral LD50 (rat) >5g/kg estimated.

## 11. Ecological Information:

- 11.1. WATER: water pollution class (WGK): 0 – not generally hazardous to water.
- 11.2. GENERAL: not expected to present any significant ecological problems.

## 12. Disposal Considerations:

- 12.1. Recycle and discharge: The product is suitable for mechanical recycling. After appropriate treatment it can be re-melted and processed into new moulded articles.
- 12.2. Mechanical recycling is possible if the material has been selectively retrieved and carefully segregated according to type.
- 12.3. May be discharged or incinerated together with household refuse if local official regulations are observed.



- 12.4. Steps to be taken if material is released or spilled: Sweep or gather up material and place in proper container for disposal or recovery.

### **13. Transport Information:**

The product is classified as a non-hazardous material in the meaning of transport regulations:

- 13.1. Dot hazard class: Not regulated.
- 13.2. Proper shipping name: Not regulated.
- 13.3. Identification number: Not listed.
- 13.4. Other information: Not dangerous Cargo, keep Dry.

### **14. Regulatory Information:**

- 14.1. No labeling is required in accordance with the EEC directives.
- 14.2. In connection with dusts formed in consequence of mechanical treatment, e.g. grinding, the appropriate regulation/maximal values for fine dusts must be observed: Max value (fine dust): 5 mg/m<sup>3</sup>.
- 14.3. This product does not contain reportable quantities of substances subject to supplier notification.

### **15. Other Information:**

- 15.1. The safety data sheet is valid for Polycarbonate (bisphenol-A-carbonate).
- 15.2. The trade names of the base resin are Makrolon.

Pigments and additives used to enhance specific properties are encapsulated in the polymer resin matrix, and/or on the sheet surface.

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