

# Material Safety Data Sheet

2006.07.25

## 1. Chemical Product and Company Identification

**Product Name:** Carbotex® Grade K-50

**Chemical Name:** Bisphenol A Polycarbonate / Poly (Bisphenol A Carbonate)

**Manufacturer:** Kotec Corporation

**Address:** 3-21-15, Chayamadai, Minami,Sakai, Osaka, 590-0115 Japan

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## 2. Composition / Information on Ingredients

Chemical / Mixture:	Content	CAS.No
Polycarbonate	≥99.5%	25971-63-5
Anti-oxidant	≤0.5%	confidential

**Chemical nature:**solid pellets

**Hazardous components:** None

## 3. Hazards Identification

**The most important hazards and effects:** None

**Skin contact:** Essentially non-irritating to skin

**Eye contact:** Solid or powder may cause irritation by an abrasive action of solid or power.

**Inhalation:** This product under normal processing temperatures (280°C - 320°C) releases very little smoke, which has a very low irritation property. However, if the temperature exceeds 400°C, decomposition will occur rapidly and release of carbon monoxide occurred resulting in acute lethality.

**Ingestion:** Oral toxicity is very low.

**Environmental effects:** None

**Physical and chemical hazards:** Not applicable

**Specific hazards:** Not applicable

## 4. First Aid Measures

**Skin contact:** Flush skin with running water. For skin contact with fume condensation, immediately wash the affected area thoroughly with soap and water. For skin contact with molten plastic, immediately cool it with water and seek medical attention.

**Eye contact:** Immediately irrigate affected eye(s) with clean water for at least 15 minutes. Do not rub the eye(s) to prevent irritation and damages to cornea(s). If irritation develops or persists, obtain medical attention.

**Inhalation:** Remove a victim from the area to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Obtain medical attention if any breathing difficulties persist.

**Ingestion:** Not a likely route of exposure. If swallowed, seek medical attention.

**Note:** Several thermal burns can result from a contact with molten resins immediately

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## 5. Fire-Fighting Measures

**Extinguishing media:** Water spray, dry chemical, chemical foam and carbon dioxide

**Hazardous Combustion Products:** This product is a combustible thermoplastic, which will melt and drip when ignited and give off monomers and combustion products.

**Fire Fighting:** Firefighters should wear protective clothing and use self-contained breathing apparatus when fighting fire involving this material.

**Explosive:** This product is not explosive.

## 6. Accidental Release Measures

**Personal precautions:** Pellets spilled on a floor can create a slipping hazard.

**Environmental precautions:** This product is a stable organic thermoplastic and a hazardous polymerization will not occur.

**Recovery:** To prevent the danger of slipping or falling, sweep up or vacuum spilled materials and place them in a proper waste container for disposal.

## 7. Handling and Storage

**Handling:** Always wear recommended personal protective equipment. Wash thoroughly after handling. Launder contaminated clothing before reuse. Long retention at high temperature can cause heat decomposition. Spilled pellets on a floor can create a slipping hazard.

**Prevention of user exposure:** Gases generated in moulding process may cause irritation to skin and respiratory tract. Avoid dust or pellets in contact with eyes. Do not touch molten resins to prevent a burn.

**Prevention of fire and explosion:** This product will not ignite itself at normal temperature but keep fire away wherever and whenever possible.

**Measures to prevent dust generation:** Use local exhaust ventilation. Avoid breathing thermal processing fume vapor.

**Storage:** This product will not degrade during storage. While heating and/or cooling is not required, the resin should be stored indoor to protect it from rain or excessive moisture. At extended temperatures above 90°C the pellets can become softened and may stick in clumps upon cooling. Pellets should not be stacked more than three high. Periodically check storage for vertical stability and/or container damages or fatigues. Store resin in clean, dry environment in sealed containers. Avoid storing flammable materials in the resin storage area. Keep container tightly closed.

## 8. Exposure Controls / Personal Protection

**Exposure limits:** ACGIH – None listed

NIOSH – None listed

OSHA – None listed      No OSHA vacated PELs are listed for this chemical.

**Engineering controls:** Thermal processing equipment should be ventilated to control gas and fume given off when the resin is heated to extrusion or injection molding temperatures. For most operations, a continuous supply of fresh air to the general workplace area along with the continuous removal of processing fume contaminated air through a local exhaust ventilation system will be adequate. However, the ventilation requirements must be determined on an individual basis for each workplace.

**Eye protection:** Wear safety glasses with side shields or chemical safety goggles as described by OSHA's eye and face protection regulations.

**Skin and body Protection:** None required in normal handling of pellets. When handling hot resins (extruded, air shots or parts), well-insulated gloves are to be worn to prevent a thermal burn.

**Respiratory Protection:** None required in normal handling of pellets. In handling of resins that may be reinforced with fiberglass, it may be necessary to wear a NIOSH / MSHA approved dust respirator if the airborne dust concentration is near or exceeds the nuisance dust.

**Ingestion:** No adverse effects anticipated by this route of exposure incidental to proper industrial handling.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

## 9. Physical and Chemical Properties (SI unit)

**Appearance:** Pellets

**Physical State:** Solid

**Odor:** No odor

**Glass Transition Point:** Approximately 150°C (302 °F)

**Flash Point:** Over 550 °C (1,022 °F)

**Freezing / Melting point:** Not available

**Boiling point:** Not available

**Vapor Pressure:** Not available

**Vapor Density:** Not available

**Evaporation rate:** Not available

**pH:** 7

**Auto-ignition Temperature:** Over 522 °C (972 °F)

**Specific Gravity:** 1.20 g/cm<sup>3</sup> (20 / 4°C)

**Solubility:** Insoluble in water / Soluble in ethylene chloride / Soluble in tetrahydrofuran

**Upper flame limit:** Not available

**Lower flame limit:** Not available

## 10. Stability and Reactivity

**Stability:** Stable under normal temperatures and pressures.

**Reactivity:** Not reactive under recommended conditions of handling, storage, processing and use.

**Conditions to avoid:** Incompatible materials, dust generation, strong oxidants.

**Incompatible materials:** Strong oxidizing agents

**Hazardous decomposition products:** Carbon monoxide, carbon dioxide, bisphenol A, methane, and diphenyl carbonate and phenol derivatives. Irritating and toxic fumes, gas and carbon dioxide, acrid smoke and fume.

**Hazardous Polymerization:** Has not been reported

**Flammability:** Oxygen Index is over 25

**Storage stability:** Stable

**Reactivity in water:** None

**Oxidizing property:** None

**Self-reactivity / Potential for explosion:** None

## 11. Toxicological information

**Acute inhalation:** Processing fumes from similar materials are not considered toxic. There were no distinct or consistent treatment related tissue or organ changes noted in gross necropsies.

**Acute toxicity:** No data available

**Sensitization and chronic toxicity:** No data available

## 12. Ecological Information

This product, which is resistant to biodegradation and insoluble in water, is expected to present any ecologically significant problems and not considered degradable or toxic in terms of their physical impact. Pellets left at large (spills) in general environment may be ingested by animals. Do not dispose any of the material into marine/water area to prevent marine animals or birds from ingestion.

## 13. Disposal Considerations

Comply with all applicable national and local laws or regulations. Do not dispose into sewers, ground or body of water. Preferred options for disposal are recycle, incineration with energy recovery and landfill. Remove all packaging for recovery or waste disposal.

## 14. Transport Information

Comply with all applicable national and local laws or regulations. Avoid water and careless handling to prevent damage to the container. Watch your step not to slip in the event that pellets spill out of the torn container.

<b>International regulations for transport:</b> US DOT	- Not applicable
IMO	- Not applicable
IATA	- Not applicable
RID/ADR	- Not applicable
Canadian TDG	- Not applicable

## 15. Regulatory Information

Comply with all national and local regulations.

## 16. Miscellaneous Information

**Disclaimer:** The information set forth herein is offered as a service to our customers and is not intended to relieve a customer from its responsibility to determine the suitability of this information or of the materials described herein for purchaser's purpose; to investigate other sources of information; to comply with all laws and procedures regarding safe use of these materials; and to use these materials in a safe manner. Although this information is believed to be accurate, Kotec Corporation specifically disclaims responsibility for any liability of any kind arising from any party's use of or reliance on information or recommendations set forth herein. No warranty of any kind shall be construed to arise by implication from any information or recommendation contained herein. This document may be revised by new knowledge.