

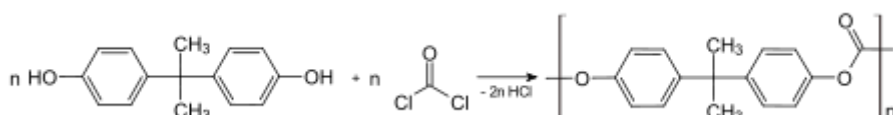
MATERIAL SAFETY DATA SHEET POLYCARBONATE

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Document Rev. 1-2017
20.09.2017/ PC-SK

PRODUCT NAME: Polycarbonate , manufactured from bisphenol A, contains Carbonate Ester, is ester of carbonic acid. The main polycarbonate material is produced by the reaction of bisphenol A (BPA) and phosgene COCl₂. The overall reaction can be written as follows:



PHYSICAL AND CHEMICAL PROPERTIES APPEARANCE: Solid

CAS No. 25037-45-0

EC No.: 920-874-5

VOLATILES: N/A

MELTING POINT: 428 – 446°F (220-230°C)

Vicat softening point at: 135- 150°C

Tensile Strength : 55-75 Mpa

Young's Modulus : 2.0-2.4 GPa

Water absorption over

24 hours: 0.1%

SOLUBILITY IN WATER: Insoluble

SPECIFIC GRAVITY: 1.2

STABILITY AND REACTIVITY STABILITY: Stable

MATERIALS TO AVOID: None known

EXPOSURE CONTROLS/PERSONAL PROTECTION VENTILATION: Provide natural or mechanical ventilation to control exposure levels below airborne exposure limits. Local mechanical exhaust ventilation should be used at sources of air contamination, such as open process equipment, or during purging operations, to capture gases and fumes that may be emitted. Standard reference sources regarding industrial ventilation should be consulted for guidance about adequate ventilation. In the event of thermal decomposition from overheating the product, evacuate the work area, shut down equipment and provide general ventilation to the room prior to reoccupying.

PROTECTIVE EQUIPMENT SKIN: None required but fabric gloves are recommended when handling molten material Revised October 23, 2006 Page 2 of 3.

EXPOSURE CONTROLS/PERSONAL PROTECTION - continued EYE: Safety glasses are recommended as a good industrial hygiene and safety practice.

RESPIRATOR: NIOSH/MSHA – approved dust respirator recommended if the airborne dust concentration is near or exceeds the nuisance dust exposure limits.

ADDITIONAL PROTECTIVE MEASURES: The greatest potential for injury occurs when working with molten polymeric resins. During this type of operation it is essential that all workers in the immediate area wear eye and skin protection as protection from thermal burns. Purging should be collected as small flat thin shapes or thin strands to allow for rapid cooling. Precautions should be taken against auto-ignition of hot, thick masses of the plastic. Quench with water. Grinder dust is an exposure hazard.

EXPOSURE GUIDELINES: INGREDIENT AGENCY VALUE Nuisance Dust OSHA-PEL 15mg/m³ Respirable Dust OSHA-PEL 5mg/m³ V.

HEALTH HAZARDS IDENTIFICATION ACUTE OR IMMEDIATE EFFECTS SKIN: Contact with hot material will cause thermal burns **EYES:** Mechanical irritation to the eyes may occur due to exposure to fines. Eyes may become red and scratchy and may tear.

INHALATION: Toxic gases/fumes given off during burning or thermal decomposition cause respiratory irritation

CHRONIC/CARCINOGENICITY: Not listed as a carcinogen VI.

FIRST AID MEASURES SKIN: Wash affected areas with soap and water. See a physician if thermal burn occurs

EYES: Flush with plenty of lukewarm water. See a physician or ophthalmologist for follow-up if irritation is present and persists

INHALATION: Move to an area free from risk of further exposure. Give oxygen or artificial respiration as needed. Obtain medical attention VII.

FIRE FIGHTING MEASURES AUTOIGNITION TEMPERATURE: Above 842°F (450°C) ASTM D-1929B Revised October VII.

FIRE FIGHTING MEASURES - continued HAZARDOUS PRODUCTS OF COMBUSTION: Carbon monoxide, carbon dioxide, bisphenol A, diphenyl carbonate, phenol and phenol derivatives. Traces of aliphatic and aromatic hydrocarbons, aldehydes and acids.

EXTINGUISHING MEDIA: Water; carbon dioxide, dry chemical, foam **SPECIAL FIRE FIGHTING INSTRUCTIONS/PRECAUTIONS:** Full emergency equipment with self-contained breathing apparatus must be worn by firefighters VIII.

ACCIDENTAL RELEASE MEASURES SPILL OR RELEASE: If molten material is spilled, allow it to solidify. Remove material mechanically by a method which minimizes the generation of airborne dust and place in appropriately marked containers. IX.

HANDLING AND STORAGE HANDLING: When handling flaked material or during secondary operations, vent storage bins, conveyors, dust collectors, etc. ground handling equipment, keep open flames, sparks and heat away from dusty areas. Maintain highest standards of housekeeping to prevent accumulation of dust.

STORAGE: Max 200°F (93°C) material should be stored in a clean, dry environment in sealed containers. Material must be dried before processing X.

DISPOSAL CONSIDERATIONS DISPOSAL: Material may be incinerated or landfilled in compliance with Federal, State, Provincial and Local environmental control regulations. XI.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES The information presented in the Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared.

HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.

No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In

addition, no authorization is given nor implied to practice any patented invention without a license.

EINECS (European Inventory of Existing Commercial Substances) numbers were assigned to each of the chemicals in the inventory. ELINCS numbers (European List of Notified Chemicals Substances) are assigned to the “New” chemicals. EC numbers is a term used to replace the outmoded “EINECS/ELINCS number” designation.