Global Aliphatic Polycarbonate Market Research Key Players, Industry Overview and Forecasts to 2026 : TMR

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Albany, NY -- (SBWire) -- 03/29/2019 --Global Aliphatic Polycarbonate Market: Overview

Polycarbonate is a polymer that possesses repeating carbonate backbone (-O-C(O)-O-) in its structure. It is a strong material that is available in various grades; some of them are optically transparent. Beneficial properties of polycarbonate include easy workability, molding, and thermoforming. As a result, it is used in a large number of applications across various end-user industries. Polycarbonate falls between the categories of commodity plastics and engineered plastics due to its features such as resistance to temperature and impact coupled with optical properties.

Aliphatic polycarbonate (APC) refers to the polycarbonate, wherein there is absence of aromatic groups between the carbonate linking. Aliphatic polycarbonate (APC) were first manufactured in the laboratory at DuPont, one of the leading manufacturer of chemicals, around 1930s. These synthetically produced Aliphatic polycarbonate (APC) exhibited high susceptibility to hydrolysis and low melting points. These properties were considered inferior to those exhibited by other polymers that were developed during the same period such as polyamides (PA), poly(methyl methacrylate) (PMMA)), and polyesters. As a result, APCs were not pursued commercially and their applications were limited.

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Global Aliphatic Polycarbonate Market: Drivers and Restraints

Developments in polymerization techniques have been carried out in order to overcome the limitation of Aliphatic polycarbonate (APC) being conventionally utilized as low molecular weight (LMW) oligomeric intermediates for its copolymerization with other polymers. Recent innovations in the APCs market have made possible to cross the limitations in the synthesis of high molecular weight (HMW) APCs. Furthermore, utilization of other new monomers in the synthesis process of APCs has allowed the production of a variety of aliphatic polycarbonates with different chemical compositions and structures.

Aliphatic Polycarbonates were initially recommended as alternative materials for packaging, films, and rigid plastics applications. However, their industrial applications are currently limited to their usage as intermediates in the production of LMW polycarbonate polyols and as macro-monomers in the synthesis of polyurethane and other polymers.
Production of Aliphatic polycarbonate (APC) is carried out by processes such as poly-condensation process between aliphatic polyol with dialkyl carbonate; copolymerization of carbon dioxide with epoxides; and ring-opening polymerization (ROP) of cyclic carbonate monomers. Substantial advancements have been carried out to develop each technique over the last two decades.

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Global Aliphatic Polycarbonate Market: Key Players

Key players operating in the Aliphatic Polycarbonate Market include Sumitomo Seika Chemicals Co. Ltd., Parker Hannifin Corporation, Empower Materials, and Jiangsu Zhongke Jinlong-cas Chemical Co. Ltd.

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