Application and Development Trend of Plastics in China's Auto industry

1. Basic Conditions of China's Auto Market

In a move to overcome the adverse effects of international financial crisis on the real economy, the State Council launched 12 major policy measures, implemented RMB4 trillion economic stimulation schemes and formulated a revitalization project for 10 pillar industries in 2009. Given the fact that auto industry is one of pillar industries in China, the state has firstly adopted "Auto Industry Restructuring and Revitalization Plan", and also implemented economic stimulation packages and supportive measures, including: subsidies to purchase of vehicles by farmers, reduction of purchase tax and old-for-new services, helping to stimulate significantly domestic auto market to bounce back quickly. From March of 2009, monthly sales volume of home-made automobiles registered 1 million, and exceeded 1 million from April to August, then up to record high 1.3 million in September. Sales volume from January to September reached a record 9.6 million. Up to October, the production and sales of home-made automobiles will exceed 10 million, marking a historic milestone for China's auto industry.

2. Application and Development Trend of Plastics in Auto industry

Healthy development of China's auto industry brings huge market demands for relevant products of auto industry. According to relevant statistical data, amongst the materials extensively used by auto industry, plastics account for 7.3% and rubber for 6.76%. The world average consumption of plastics for every automobile in 2000 had reached 105kg, about 8%~12% of gross mass of an automobile. In recent years, the consumption of plastics in automobiles is still increasing rapidly and will reach 20% in 2010. Thus, there is a huge potential for the application of plastics.

Currently, technical development of auto materials in the world are characterized as follow: 1, lightweight and environment friendliness represent the main development trend of auto materials; 2, consumption of ultra-strength steel, aluminum alloy, plastics and composite materials will increase substantially while the proportion of cast iron and steel will decrease gradually; 3, lightweight material technology will be more closely associated with auto design and manufacturing process, and the bodywork materials will be geared towards multi-material design; 4, more attentions will be paid to recycling of

auto materials; 5, special materials for electric vehicles and functional materials will be developed and utilized continuously. New trend of worldwide auto development is mainly represented by energy-saving, environment friendliness and safety:

Energy saving--represented by lightweight of automobiles. Application of lightweight materials is a key approach to realize energy saving. Engineering plastics and its composite materials can not only reduce about 40% of the mass of spare parts, but also lower down 40% of the cost. Application scope of various plastics in automobile is expanding constantly. There are over 40 types of engineering plastics currently used in lieu of steel materials, covering 4 subsystems of 6 auto assemblies, i.e.: powertrain, bodywork, chassis and interiors/exteriors. Thus, an approach to lightweight production of automobiles lies in wide application of new materials including engineering plastics.

Environment Friendliness--developing positively recycle economy in domestic auto industry is a key task for building a resource-conserving and environmental-friendly country. Engineering plastics and new composite materials are new materials of powerful vitality in S&T development, and can be used to meet various special applications thanks to such advantages as high rigidity and strength, strong resistance to heat and abrasion as well as lightweight. Wide application of engineering plastics in automobiles creates favorable conditions for lightweight production of automobiles and also contributes to lower energy consumption and emission. It's estimated that, with every 10% reduction of auto mass, oil consumption can be reduced by 3%~5%, and CO_2 emission down by 25kg.

Safety--growing safety requirements for materials. As engineering plastics and new composite materials are used for cushioning and energy absorbing in automobile collision, the engineering plastics (including high-density foamed materials) are preferred choice to the research on pedestrian protection technology and material selection during auto design.

Source : Shanghai Automotive Trade Association