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Polymers in the automotive industry – which materials will be the winners and losers?

Background

It is clear that plastics have gained share from traditional materials used in vehicle production such as glass and metals – but what further penetration is possible? How will the penetration of competing plastics, polymer compounds and polymer composites evolve. Which materials will be the winners or the losers?

Objective

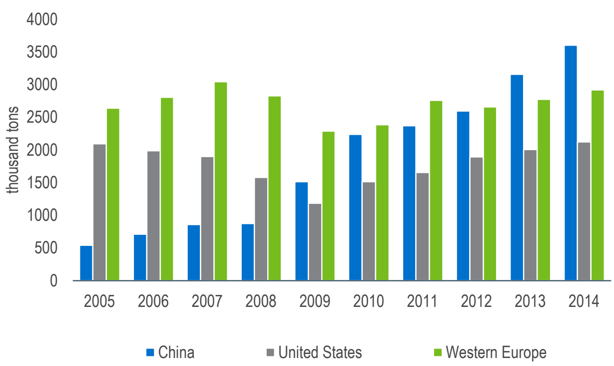
The automotive industry is the second most important consuming sector of polymers after construction. Therefore, changes in material usage can have major implications on polymer demand and the financial performance of polymer producers.

This detailed study will examine the main plastics used in automotive production and how material usage trends are likely to evolve. This will consider:

- vehicle manufacturers' changing strategic priorities, including light-weighting and reducing manufacturing costs
- the emergence of high performance polymer composites, blends, alloys and compounds
- the growing penetration of emerging vehicle technologies (electric, hybrid, flexible fuel and autonomous vehicles etc.)
- demand from consumers for better aesthetics and the more creative freedom reinforced carbon fibre and other plastics provide to designers
- new manufacturing techniques including 3-D printing and eco-friendly production.

This report will incorporate expertise Nexant has gained over many years examining polymer market trends in the automotive industry as well as the results from an extensive and global interview programme with OEMs, automotive suppliers, regulators and other innovators who will influence material usage in vehicles over the next decade.

Polymer Demand in Motor Vehicles, 2005-2014



What will be included in the report?

- Identification of the materials used in specific vehicle Identification of the materials used in specific vehicle components and the future trends to manufacture these parts from alternative materials. This will consider the production economics, performance of competing materials and feedback from OEMs on the innovation programmes currently underway and how these will impact future material usage
- An evaluation of the properties of alternative polymers and their suitability and relative performance for different vehicle applications. This will consider temperature and chemical resistance, strength, hydrophobicity, aesthetics etc.
- A review of the use and market prospects of emerging and existing plastics in vehicle production including:
  - high performance polymer composites
  - new polymer compounds
  - bio-based engineering plastics
  - existing polymers for new applications.
- Estimates of average plastics usage per vehicle and regional volume growth forecasts, underpinned by commentary and evidence from discussions with OEMs.
- Forecast pricing (2015 to 2025) of key polymers to assess the cost competitiveness of alternative materials.
- Explanation of the penetration and implication of alternative powertrain vehicles, e.g., electric, hybrid, plug-in hybrid, LPG and autonomous vehicles etc. on chemicals consumption in the automotive industry. These vehicles use fuels with different chemical compositions and combustion temperatures and therefore will impact which materials are most suitable. Electric cars for instance will also contain different components to traditional vehicles and require polymers for battery casings and the greater wire and cable content.

Further Information

For information regarding this study please contact STMC@nexant.com or visit us at: http://thinking.nexant.com

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