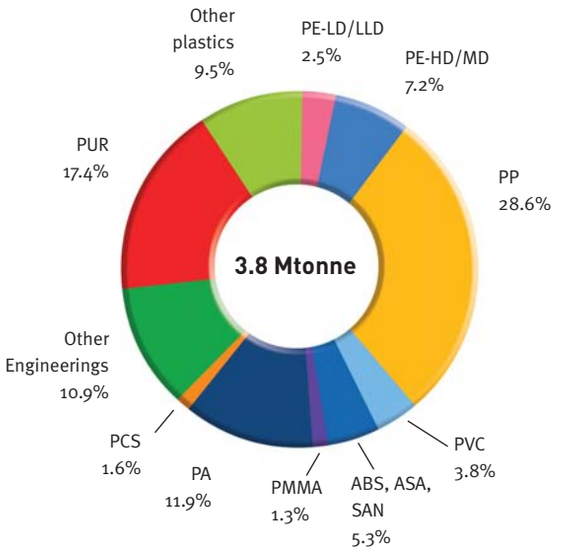
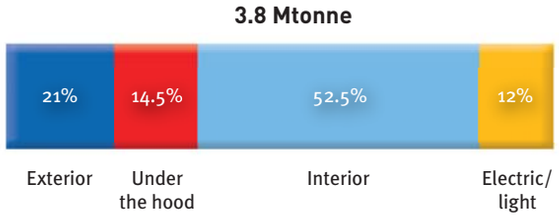
## Plastics provide comfort and cost effective design opportunities

Today's lightweight, durable plastics give the industry the freedom to create innovative vehicles often using single mould parts which enhance passenger comfort and increase cost efficiency.

**Use of plastics in the automotive sector, Europe, 2012**




Source: Consultic Marketing & Industrieberatung GmbH

## Plastics recovery at the end-of-life

Plastics can also be recovered when a vehicle reaches its end-of-life stage, being either recycled, re-used or transformed into energy or fuel, thus helping to meet the EU's End-of-Life Vehicles Directive.

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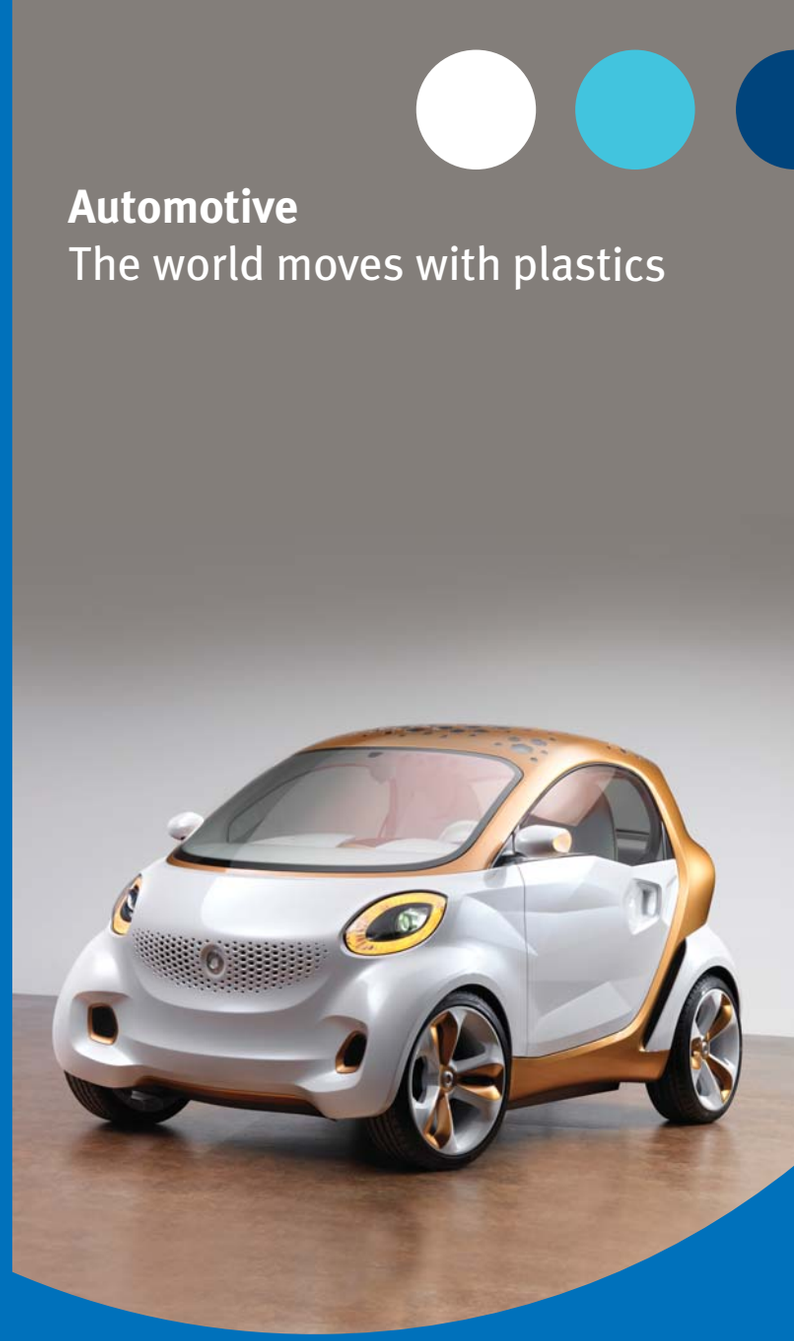
Plastics
The Material for the 21st Century

Cover picture © Daimler

# Automotive
## The world moves with plastics

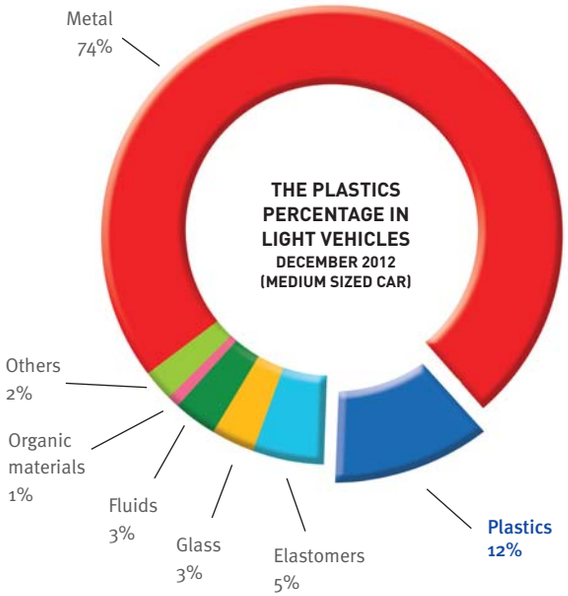


PlasticsEurope
Association of Plastics Manufacturers

## Plastics enable resource efficient mobility

The use of plastics in the construction of automobiles gathered pace during the 1950s and it is now hard to imagine a car without plastics.
The average modern car weighing 1,500 kg contains between 12-15% of plastic materials.* This equates to over 2000 plastic parts of all shapes and sizes; from lights and bumpers, to engine components, dashboards, headrests, switches, clips, panoramic roofs, seats, airbags and seatbelts. Plastics are now the second most commonly used material in automobile manufacture.

* Plastics content heavily depends on the type of vehicle, on the (extra) equipment, etc.




Source: Association Française de Mécanique (AFM)

Lightweight plastics have revolutionised the car industry. Cars are now lighter, use less fuel and emit fewer $CO_2$ emissions. And, with growing pressure on the automotive industry to continue to reduce these Greenhouse Gases, plastics are making the electric, hybrid and hydrogen powered vehicles of tomorrow a reality.

## Plastics are crucial for passenger safety

As cars become lighter there might be a concern that safety is compromised. In fact, the opposite is true; plastics are actually the crucial component in car safety.

Seat belts, made from strands of durable polyamide or polyester fibre, have probably had the greatest single effect on reducing road casualties over any other safety feature, finds a EU road safety study (2008), which estimates that using seat belts could save up to 7,300 lives a year in the EU. Airbags, made from high-strength nylon or reinforced polyamide fibres, are another safety feature which reduce injuries along with Child Safety seats, which can only be manufactured safely with plastic. State-of-the-art energy absorbing bumpers increase occupant, pedestrian and cyclist safety.

## Plastics save energy and reduce $CO_2$ emissions

The use of innovative plastics in cars is helping the automotive industry to cut costs and emissions. Weight loss is critical if car $CO_2$ emissions and the associated fuel costs are to be reduced. Reducing the weight of the bodywork of an average car by 100 kg cuts the $CO_2$ emissions by 10 gr/km.

Despite the widespread use of plastics, the natural resources needed to produce automotive plastics represent just 0.3% of global oil consumption. An independent Life Cycle study shows that if plastics in a car were to be substituted with other materials additional energy of 1,020 Mill GJ/a (+26%) would be needed. This can be compared to the energy needed for heating and providing warm water for 40 million people or nearly the entire population of Poland.