Supporting Green House Gas Reduction Through Innovative Material Components
Established in 1976, SABIC is one of the top five petrochemical companies in the world.

Total assets over $72 billion and annual revenue exceeding $40 billion

33,000 employees and operations in more than 100 countries

60 world-class manufacturing and compounding plants in locations across the Middle East, Asia, Europe and the Americas

Extensive array of products including chemicals, polymers, specialty plastics and chemicals, fertilizers and metals

Our 2020 vision is to be the preferred world leader in chemicals
SABIC – Six Strategic Business Units

**Chemicals**
Olefins, oxygenates, aromatics, fiber
Intermediates, industrial gases, linear
alpha olefins

**Polymers**
PE, PP, PET, PVC, PS

**Performance Chemicals**
Ethoxylates, ethanolamines

**Fertilizers**
Urea, ammonia and phosphates

**Metals**
Flat Steel, Long Steel

**Innovative Plastics**
PC, PP, PPE/PS, PEI,
PBT, ABS, ASA, PC/ABS,
PC/PBT, PPE/PA,
specialty compounds,
avtomotive glazing
Key Weight Saving Technologies From SABIC Innovative Plastics

1. **PC Glazing** = 40 lbs potential reduction
2. **PPO/PA Fenders** = 6.5 lbs
3. **PP Tailgate Inner**
4. **PC/PBT Tailgate Outer** = 6.5 lbs
5. **PP Door Modules** = 4.0 lbs
6. **PC Steering Wheel** = 1.5 lbs
7. **PPO Wire Coating** = 2.0 lbs
8. **PP Front End Module** = 4.0 lbs
9. **PC/PBT Energy Absorbers** = 1.1 lbs
10. **PEI Headlamp Reflectors** = 0.8 lbs

Programs in Validation or in Production
PPO/PA Body Panels

A proven technology for plastic fenders

**Value:** Design freedom, significant weight savings

**Per vehicle mass reduction:**
6-7 lbs

**Potential average North American fleet annual savings:**
90 million gallons; 800k MT of CO2 *

**Currently used on:**
- Renault: CLIO3, TWINGO, MODUS, MEGANE2, SCENIC2, ESPACE4, Kangoo
- PSA: T5 307, T7 308, C4, C4 PICASSO
- LANCIA: YPSILON
- MERCEDES: VITO
- Ford: Kuga
- Audi: R8
- BMW: SERIES 6
- VW: New Beetle
- Mitsubishi: Delica
- Hummer: H3

* Based on 230 million vehicles at 10,000 miles driven per year, 35.5 MPG average, 3500lb average vehicle weight, 10% vehicle weight reduction yields 7% fuel economy improvement.
Polycarbonate Glazing

A lightweight glazing solution providing design flexibility and styling freedom

**Value:** High ductility thermoplastic reduces mass up to 50% compared to glass

**Per vehicle mass reduction:**
40 lbs

**Potential average North American fleet annual savings:**
566 million gallons; 5 million MT of CO2 *

**Currently used on:**
Honda Civic, Seat Leon, GM Corvette

* Based on 230 million vehicles at 10,000 miles driven per year, 35.5 MPG average, 3500lb average vehicle weight, 10% vehicle weight reduction yields 7% fuel economy improvement.
PC Co-polymer Steering Wheel

Value: New high ductility thermoplastic reduces mass and eliminates materials that are less easily recycled

Light weight thermoplastic solution replacing cast metal

Per vehicle mass reduction:
1 to 2 lbs

Potential average North American fleet annual savings:
26 million gallons; 225k MT of CO2 *

Production status:
Initial prototype testing: Pass
Production tests in progress

* Based on 230 million vehicles at 10,000 miles driven per year, 35.5 MPG average, 3500lb average vehicle weight, 10% vehicle weight reduction yields 7% fuel economy improvement.
Flexible PPO Wire Insulation

A thinner wall, lower mass, insulation for automotive wire

Value: Lower specific gravity and new resin performance may allow smaller, lighter vehicle wiring harnesses

Per vehicle mass reduction:
1 to 3 lbs

Potential average North American fleet annual savings:
39 million gallons; 340k MT of CO2 *

Currently used on:
Toyota Tundra, Corolla, Sequoia, Solara
GMC/Chevy Silverado, Sierra, Yukon, Tahoe, Suburban
Dodge Journey

* Based on 230 million vehicles at 10,000 miles driven per year, 35.5 MPG average, 3500lb average vehicle weight, 10% vehicle weight reduction yields 7% fuel economy improvement.
### Weight savings achieved in concept vehicle designs:

<table>
<thead>
<tr>
<th>Application</th>
<th>SABIC-IP Solution</th>
<th>SABIC Part Wt. (lb)</th>
<th>Traditional Material</th>
<th>Traditional Part Wt (lb)</th>
<th>Mass Savings (lb)</th>
<th>% Save</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panoramic Roof</td>
<td>Lexan</td>
<td>29.0</td>
<td>Glass</td>
<td>38.7</td>
<td>9.7</td>
<td>25%</td>
</tr>
<tr>
<td>Decklid Glazing</td>
<td>Lexan</td>
<td>14.5</td>
<td>Steel</td>
<td>26.8</td>
<td>12.3</td>
<td>46%</td>
</tr>
<tr>
<td>Hood Outer</td>
<td>HPPC-Xenoy iQ</td>
<td>14.7</td>
<td>SMC</td>
<td>26.8</td>
<td>12.1</td>
<td>45%</td>
</tr>
<tr>
<td>Hood Inner</td>
<td>HPPC-Xenoy iQ</td>
<td>14.7</td>
<td>SMC</td>
<td>26.8</td>
<td>12.1</td>
<td>45%</td>
</tr>
<tr>
<td>Doors - Front</td>
<td>HPPC-Xenoy iQ</td>
<td>4.4</td>
<td>Steel</td>
<td>7.9</td>
<td>3.5</td>
<td>44%</td>
</tr>
<tr>
<td>Doors - Rear</td>
<td>HPPC-Xenoy iQ</td>
<td>2.9</td>
<td>Steel</td>
<td>5.3</td>
<td>2.4</td>
<td>46%</td>
</tr>
<tr>
<td>Fenders</td>
<td>Noryl GTX</td>
<td>4.6</td>
<td>Steel</td>
<td>8.4</td>
<td>3.7</td>
<td>45%</td>
</tr>
<tr>
<td>Energy Absorber - Front</td>
<td>Xenoy iQ - Global EA</td>
<td>3.5</td>
<td>Xenoy</td>
<td>3.5</td>
<td>0.0</td>
<td>0%</td>
</tr>
<tr>
<td>Energy Absorber - Rear</td>
<td>Xenoy iQ - Hybrid Beam</td>
<td>12.1</td>
<td>Xenoy/Steel</td>
<td>15.2</td>
<td>3.1</td>
<td>20%</td>
</tr>
<tr>
<td>Noryl Wire Coating</td>
<td>Noryl</td>
<td>2.4</td>
<td>XL PE</td>
<td>5.5</td>
<td>3.1</td>
<td>56%</td>
</tr>
<tr>
<td>Steering Wheel</td>
<td>Lexan EXL</td>
<td>na</td>
<td>Magnesium w/urethane</td>
<td>na</td>
<td>1.5</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**Total Save:**

- **GM Volt 2007:** 64 lbs. (29 kg)
- **Hyundai QarmaQ 2007:** 135 lbs (61 kg)

Note not all applications listed.