Who is LG?
LG was established in 1947 as Korea’s first chemical company. LG introduced the holding company structure on March 1, 2003 and split into two holding companies on July 1, 2004 to maximize business specialization. LG has 40 affiliates in 3 business fields sharing the LG brand and the same philosophy.

**Holding Company**
- LG Corp.
- GS Holding Corp.

**Chemicals & Energy (12)**
- **LG Chem.**
  - LG Household & Health Care
  - LG Life Sciences
  - LG Petrochemical
  - LG MMA
  - LG-Dow Polycarbonate
  - LG-Caltex Oil
  - LG Energy
  - LG Power
  - Seorabul City Gas
  - Haeyang City Gas
  - Clean Energy Technologies

**Electronics (8)**
- LG Electronics
- Hiplaza
- LG, Philips LCD
- LGIBM PC
- LG Innotek
- LG Micron
- Hi Logistics
- LG Siltron

**Telecom. & Services (20)**
- LG Telecom
- DACOM
- DacomMultimedia Internet
- DACOM Crossing
- Korea Internet Data Center
- Customer Interaction Center
- Powercomm
- LG CNS
- V-ENS
- LG N-Sys
- LG International
- LG Engineering & Construction
- Hanmoo Development
- LG Mart
- LG MRO
- Konjiam Leisure
- LG Home shopping
- LG Sports
- LG Economics Research Institute
- LG Academy
Who is LG Chem?
Founded in 1947, LG Chem is the largest chemical company in Korea leading the industry for the past half century.

1947
- **FOUNDATION**
  - Founded Lucky Chemical Industrial Corp

1950’s ~ 1960’s
- **ENTERING INTO CHEMICAL INDUSTRY**
  - Started Vinyl flooring & PVC pipe manufacturing
  - Expanded biz into hygiene & personal care products

1970’s ~ 1980’s
- **GROWTH & EXPANSION**
  - Started the operation of ABS plant
  - Dedicated Central R&D Center in Daejeon
  - Developed the first engineering plastic products in Korea

1990’s ~ Present
- **INNOVATION & SPIN OFF**
  - Changed the company name to LG Chemical
  - Completed PVC & ABS production facilities in China
  - LG Chemical Ltd. demerged into LGCI, LG Chem and LG Household & Healthcare
LG Chem’s major businesses are chemicals & polymers, industrial & building materials and electronic materials.
★ 3.5% of total revenues, invested into the R&D every year.

★ 817 T/S personnel working for our valued customers around the world. (10% of total employees)

- Korea
- Germany, Frankfurt
- USA, LA
- USA, Detroit
- China, Guangzhou
- China, Shanghai
- China, Ningbo
Who is Chemicals & Polymers Company?

Chemicals & Polymers Company
Chemicals & Polymers Company of LG Chem. has 6 divisions and its sales in 2003 reaches 3,403 million USD.

- '03 Sales: 3,403 Million USD
- 2,800 Employees

<table>
<thead>
<tr>
<th>Division</th>
<th>Product 1</th>
<th>Product 2</th>
<th>Product 3</th>
<th>Product 4</th>
<th>Product 5</th>
<th>Product 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tactical Planning</td>
<td>1,187</td>
<td>1,277</td>
<td>280</td>
<td>269</td>
<td>226</td>
<td>164</td>
</tr>
<tr>
<td>Employees</td>
<td>835</td>
<td>594</td>
<td>118</td>
<td>227</td>
<td>205</td>
<td>152</td>
</tr>
<tr>
<td>Thousands USD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Including Overseas Corporations
ABS.PS Division has domestic and overseas business area and its sales in 2003 reaches 1,277 million USD.

ABS.PS

- Planning
- Marketing
- Production Management

R&D Center

Tech center(T/S)

Sales Forces

- 5 Domestic Sales Teams
- 4 Overseas Sales Teams

Production Plants

- 6 Production Plants (Located at Yosu and Iksan)
- ABS/SAN, PS, EPS, SM

Overseas Corporations

- LG Yongxing Chemical (China)
- LG Chemical Engineering Plastics (China)
- LG Polymer India (India)
ABS.IPS division’s major businesses are ABS, PS and Monomers.

**Business Portfolio**

- **ABS**
  - ABS
  - PMI etc.

- **PS**
  - GPPS
  - HIPS
  - EPS

- **Monomer**
  - SM
  - BD

**R&D Innovation**
MA-ABS

Polymerization Process
- MA-ABS (Continuous process)
- Conventional ABS (Batch process)

Rubber Morphology
- MA-ABS (Continuous process): 1.0~9.0 μm
- Conventional ABS (Batch process): 0.1~0.3 μm

Processes:
- Coagulation
- Dehydration
- Aging
- Drying
- Grafting
- One-step Polymerization
- PBL
Advantages of LG MA ABS

- Matte Surface
  - Low Gloss Extrusion Sheet
  - Good Thermoformability
- Self-Coloring
  - Easy to Color
  - Less Colorant
- Clean Product
  - Gel Free
  - Low Volatile Matter
  - Less odor
  - Less Drying
- Mechanical Property Balance
  - Less Discoloration
  - Wide Processing range
  - Recycling
  - High TS
  - High Elongation
  - Impact at low Temp.
- Great Thermal Stability
  - Less Discoloration
  - Wide Processing range
  - Recycling
### Heat Resistant Property

- Vicat softening temperature of MA ABS is similar to that of heat resistant grade produced by emulsion polymerization process.

<table>
<thead>
<tr>
<th>Temperature (℃)</th>
<th>General ABS</th>
<th>MA ABS</th>
<th>Heat Resistant ABS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vicat softening temperature (5kg, 50℃/h)</td>
<td>94℃</td>
<td>101℃</td>
<td>103℃</td>
</tr>
</tbody>
</table>
Introduction of MS/ABS Alloy XG-Series

High Gloss & Excellent Hardness

LG Chem. Ltd/ Tech Center ABS·PS team
XG series are similar with PMMA in aspect of Rockwell hardness

Especially, compared with HI-PMMA, XG series are more excellent hardness
✓ XG series are very clean and high glossy
✓ Therefore XG series are not different from the painted products
Because of high performance rubber, XG Series have excellent impact strength.

Compared with HI-PMMA, XG series are better.
LG Styrenic Materials for Automotive Parts

LG Chem / ABS-PS Division
Application Examples

<table>
<thead>
<tr>
<th>Application</th>
<th>Grade</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exterior</td>
<td>LG ABS MP220</td>
<td>Excellent Processibility, High Flow, High Impact Strength, Good Peeling Strength</td>
</tr>
</tbody>
</table>
| - Radiator Grill, Side Molding Garnish
- Tail Lid Garnish
- Rear Lamp Housing (Plating) |       |                 |
| Interior    |       |                 |
| - Door Handle |     |                 |

**Characteristics**
- Excellent Processibility
- High Flow
- High Impact Strength
- Good Peeling Strength
**Application Examples**

**Application**

- Exterior
  - Radiator Grille, Trunk Handle
  - Rear View Mirror HSG, Cowl Grille
- Interior
  - Air Vent Grille / Duct

**Grade**

- LG ASA LI941 / LI945

**Characteristics**

- High Heat Resistance (HDT 97°C)
- Excellent Weather Resistance
- Good Chemical Resistance
- Excellent Scratch Resistance (LI945)
Application

- Automotive Exterior
  - Air Spoiler
  - Bumper Accessory Parts

Grade

- LG ABS BM662

Characteristics

- High Heat Resistance (HDT 98 °C)
- Good Processibility (Melt Strength)
- Excellent Paintability

Air Spoiler Application Examples
Thank You