HDC HYUNDAI EP

HDC
HYUNDAI
ENGINEERING PLASTICS

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CEO Message

GLOBAL LEADING TECHNOLOGY COMPANY

Greetings to the valuable customer companies!

Hyundai EP which leaping for future has grown as the comprehensive plastic material company through developing new products and new growth engines.

As an affiliated company of Hyundai Development Co., Hyundai EP was spun off in January 2000. We, Hyundai EP, have insistently devoted to produce and supply various kinds of high quality plastic materials such as PP compound, PE compound, Polystyrene/Expandable Polystyrene and PB PIPE.

All employees of Hyundai EP are pursued to make more affluent life by providing varied eco-friendly products with the finest quality and services.

Customer satisfaction, Environment friendly and Keeping the right path are the goals that we pursue and we surely promise Hyundai EP will continuously do the utmost efforts to be the beloved company.

Thank you.

CEO Kang Chang Gyun

About HDC Group

HDC

Hyundai Development Company

Hyundai Development Company manages affiliated companies in the diverse fields of shopping, manufacturing, hotels, finance, sports and culture to bring a better and enhanced lifestyle to the people. The Company creates new culture and continuously advances with innovative thinking and commitment to excellence and human values.

- **HDC Asset Management Co., Ltd.** — Indirect investment asset management business
- **HDC I PARK SPORTS** — Professional soccer business
- **HDC HYUNDAI I PARK MALL** — Development and management of shopping malls
- **HOTEL I PARK** — PARK HYATT SEOUL Hotel business, Hotel management agency business, gymnastic business, consulting business
- **HYUNDAI I-CIUS COMPANY** — IT Service business based on clouding computer system
- **Youngchang** — Piano, Kurzweil sales, production and sales of instruments
- **I-SERVICE** — Sustainable facilities management business
- **I-Controls** — Automatic control, home automation, construction
- **HDC I&CONS** — Real estate development, construction, remodelling

HDC Company History

1988.06 Establishment of Hyundai Development Company's Polymer Division

1994.11 Completion of Dangjin Plant

2000.01 Establishment of Hyundai Engineering Plastics Co., Ltd.

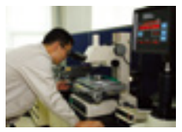
2003.09 Establishment of a Joint Venture in Suzhou, China – Hyundai Engineering Materials (S.I.P) Co., Ltd.

2004.06 Export of License Sales of PP Compound (BASELL)

2006.09 Listed on the Korean Stock Market, KOSPI

2007.01 Establishment of a subsidiary in SANHE, China (Beijing area) – Hyundai (SANHE) Engineering Plastics Co., Ltd.

2007.02 Establishment of a subsidiary in Chennai, India – Hyundai Engineering Plastics India Private Ltd.



2007.06 Establishment of Business partnership between Hyundai EP and SK Corp.,(Acquisition of Jincheon Plant (Korea) and Guangdong Plant (China)

2008.03 Establishment of a branch office in Japan (NAGOYA)

2010.04 Acquired the Petrochemical Business unit from Dongbu HiTek (PS & EPS)

2010.08 Acquired the PB-1 Business unit from PEM Korea

2011.03 Establishment of a subsidiary in DAFENG, China (Dafeng area) – Hyundai (Dafeng) Engineering Plastics Co., Ltd.

2011.10 Acquired the residual shares of Guangdong Plant (China) – GUANGDONG HYUNDAI ENGINEERING PLASTICS Co., Ltd.

PP Compound

PP Compounds that have various features such as high strength and fluidity, excellent impact resistance and chemical resistance are broadly used in automotive, electric and consumer & industrial areas. Hyundai-EP has the largest market share in the domestic PP compounding industry while supplying a wide range of products based on the distinguished technologies acquired through many years of research. Moreover we are efficiently responding to the needs of customers for light weight and eco-friendly materials in automotive industries with our utmost efforts.

Engineering plastics which are high-functional materials having superior heat resistance and mechanical features compared to general purpose plastics are widely used in automotive, electric & electronics, consumers & industrial and semi-conduct industries.

Hyundai-EP offers a comprehensive range of engineering plastics such as PA6, PA66, PBT, PC/ABS, MPPE, PPS and also Super Engineering Plastics which can substitute metals and eco-friendly materials corresponding to global environment regulations.

Dangjin Plant

Date of Foundation	November, 1994
Major Product	PP compound, Engineering Plastics
Production Capacity	70,000MT
Site of Plant	89,000 m²
Lines	5 Lines
No. of Employees	100

PP Compound

Product Information










Products	Applications
Automotive Exterior Materials SUPOL® SUPOL® for automotive exterior has an excellent impact resistance and weatherability. It also has passed various reliability tests of an official certification authority so all the products for automotive exterior materials are subject to high level of workability and dimensional stability.	• Bumper fascia, Wheel guard • Wheel arch molding • Lamp housing
Automotive Interior Materials SUPOL® SUPOL® for automotive interior materials has been enhanced by increasing features such as scratch resistance, light weight, antibacterial activity, thermal resistance and high strength by various fillers and materials. It widely applies on automobile interior parts and we supply superior quality products with various color-developing processes by ourselves.	• Instrument panel, Pillar • Console, Door trim
Electricals and Electronics SUPOL® Having high-polish and high thermal resistance features, SUPOL® for electric appliances is specially designed for UV resistance, heavy metals and anti-static. It also meets the high quality requirements of electrical and electronic industries with high dimensional stability.	• Covers for rice cookers, Washing machine, Humidifier housing • Dehumidifier housing • Kimchi refrigerator containers
LFT COMPOUNDS HIPOL® HIPOL® which is the trademark of HEP's Long Glass Fiber(LGF) compounds based on PP, PA or PP/PA alloy has superior level of mechanical strength than Short Glass Fiber(SGF) compounded plastics.	• Air cleaner cover • Door module • FEM carrier
PA6, PA66 COMPOUNDS I-LON® I-LON® which is the trademark of HEP's nylon compounds has excellent mechanical, chemical strength, superior heat stability and abrasion resistance. It is mainly applied for automotive, Electric & Electronics parts.	• Engine cover, Bobbin • Carbon canister, Clip
PBT, PET COMPOUNDS, PBT/PET ALLOYS SUPET® SUPET® which is the registered trade mark of HEP's Polyester compounds has excellent mechanical, chemical, electrical properties and dimensional stability. It is well balanced engineering plastics with automotive and electric & electronic appliances.	• Connector, Sensor • ECU case, Wiper cover
PPE/PA, PPE/PS ALLOYS SURENE® SURENE® which is the registered trademark of HEP's MPPE alloys combines the inherent benefits of PPE resin (high heat resistance, excellent hydrolysis resistance) with excellent dimensional stability and low density. SURENE® can offer a good balance of mechanical and chemical properties. Especially MPPE has the lowest specific gravity among Engineering Plastics, so it is broadly used for high functional parts.	• J/BOX, HUB CAP, Water softener • Wheel cover, Fuel cover

PE Compound

As the technology – intensive industry, PE compounding products have been used as materials for rubber parts, steel pipe coatings and various types of containers for the automotive and electronics industries in world wide. With broadly connected overseas sales network and leading R&D expertise, Hyundai EP holds the dominant position in the material markets.

Hyundai EP has been developing various materials to meet the needs of the market and industrial areas by applying varied reactive extrusion such as adding Functional Group, Cross-linking reaction and controlling Molecular Weight.

Jincheon Plant

Date of Foundation	July, 2007
Major Product	PE Compound
Production Capacity	30,000 MT
Site of Plant	17,000㎡
Lines	5 Lines
No. of Employees	71

PE Compound

Product Information

Products	Applications
Adhesive Resin POLYGLUE® POLYGLUE® is a modified polyolefin with functional groups applying reactive extrusion POLYGLUE® shows excellent competitiveness with polar polymers such as polyamide, EVOH and also with wood and metal.	• Steel pipe coating, AL composite pipe & panel • Multi-layer film & sheet, Blow molding multi-layer bottle • Head liner for automotive
Top Coat TOP COAT® The key factors to 3-layer coating system are the strong bonding of adhesive layer to both epoxy and top-coat layers and the ability of top-coat material to withstand various environmental stresses. Our TOP COAT®, ET509 series (PE) and PT900 series (PP) will be the best selection in these respects.	• Top coat resin for steel pipe coating
Crosslinkable Polyethylene, XLPE POLYLINK® POLYLINK®, A cross-linkable polyethylene compound, produced through a silane grafting reaction of polyethylene performed in an extruder, followed by cross-linking with steam. Cross-linkable polyethylene is well established for aluminum composite pipe, floor heating pipe, drinking water pipe and insulation of electric wire/cable.	• Aluminum composite pipe • Medium, Low voltage wire/cable
Barrier Resin NOTRAN® Barrier resin, designed for blow molded articles, which has an excellent barrier property against organic solvent and oxygen. It can minimize the loss of ingredient from transpiration within materials.	• Agrochemicals, Organic solvent packaging containers • Food packaging containers
Thermoplastic Elastormer, TPV PLASMER® Dynamically cured thermoplastic elastomer (TPE) made of polypropylene (PP) and ethylene-propylene diene rubber (EPDM). It is an eco-friendly material that can replace PVC and rubber, and can be recycled. It has enhanced qualities over rubber-based products in terms of mechanical, heat and chemical resistances.	• Bellows, glass run channel etc • Hose, Plugs, Gaskets and etc • Plumbing gaskets, Seals and etc • Syringe tips, Medical plugs, Grips
Matt Compound *i*-LUX® *i*-LUX® MF502H is matted polyolefin compound designed for use in BOPP. *i*-LUX® MF500 Series offers excellent matt property high haze and low gloss not only with very fine and smooth surface pattern. *i*-LUX® MS100 Series, matted polyolefin compound designed for use in extrusion blow molding, offers excellent matt property, soft touch and resistance to impact.	• Food packaging film • Paper lamination • Cosmetic containers etc

PS/EPS

Hyundai EP has acquired the Petrochemical Business unit from Dongbu HiTeck in 2010 and also established the foundation to take the most competitive global position in the wide range of business areas from raw materials to customer-oriented products.

The petrochemical plant in Ulsan is equipped to produce PS (Polystyrene; GPPS, HIPS) and EPS (Expandable Polystyrene). And it has annual production capacity of 156,000 tons with 100,000 tons of PS and 56,000 tons of EPS.

Ulsan Plant

Date of Foundation	May, 1978
Major Product	GPPS, HIPS, EPS
Production Capacity	156,000 MT
Site of Plant	138,000㎡
No. of Employees	97

PS/EPS

Product Information










Products	Applications
GPPS (General Purpose Polystyrene) SOLARENE® General purpose polystyrene is a clear crystal polymer that contains material characteristics including high resistance, acid-resistance, and alkali-resistance that provides excellent injection molding and thermal stability during the production. Its transparency enables versatile purposes of coloring, coating, printing and etc.	• Heat insulation materials for construction industries • Vegetable container in a refrigerator • General goods: CD case, Toys, Hangers
HIPS (High Impact Polystyrene) SOLARENE® High impact polystyrene is produced to strengthen the impact-resistance of General purpose polystyrene by dispersing Polybutadiene during the production. HIPS offers high impact resistance, processibility, and dimensional stability for variety of molding methods including extrusion, injection molding and vacuum forming.	• Refrigerator parts, Home appliances parts • Yogurt containers sheet
High Performance PS Through the implementation of various polymerizations, High Performance PS demonstrates excellent performance. By improving thermal stability of GPPS (optical GPPS), it is widely used in products such as electronic parts, food container, and shrink film. Furthermore, High Performance PS provides additional transparency characteristic, that is insufficient in normal HIPS, enabling HIPS products to be produced in broad markets.	• Flat display applicance materials • Heat resisting container, Shrink film for packaging Transparent parts for home appliances • Transparent extrusion sheet
PS COMPOUNDS PS Alloy is a compound product that maximizes its strong characteristics of both PS(processibility, IZOD impact) and PE (weatherability, tensile strength). It is compatible for replacement of ABS in the areas of exterior gloss, quality, and price, which is proper for extrusion and injection molding and etc. PS Alloy is widely used in interior/exterior parts of home appliances, office stationeries, and etc.	• Interior / Exterior parts for electronic products • Exterior parts of office stationery
EPS (Expandable Polystyrene) SOLARPOL® SOLAPOL® EPS is famously known for insulation board, produced by impregnating Pentane into 1mm bead of Polystyrene. Structured with white beads, SOLAPOL® EPS is widely used in areas such as anti-impact boxes, packaging, and panel for construction purpose.	• Insulation, Noise insulation • Ground subsidence insulation • Packaging, Food/fish containers
Energy Saving EPS Energy Saving EPS provides 10~20% reduced heat conductivity by implementing metal particles and other heat isolation materials into beads. Thus, Energy Saving EPS maximizes the convenience during the storage by stabilizing its shape even from the exposure to direct sunlight.	• Insulation panels, Sandwich panels • Fruit/Fish containers, Cold/hot insulation

PB PIPE

The Construction Materials Business Unit of Hyundai EP has been acquired from PEM KOREA in September, 2010. PB PIPE is a widely used eco-friendly construction material for hot water and floor heating supply pipes in a public house or apartment. Also, Hyundai EP has developed and supplied geothermal PB PIPEs for renewable energy system which helps to save energy by absorbing and releasing heat energy under the ground.

Push-Fit type PB PIPE and accessory materials that Hyundai EP developed provide simpler and easier construction compared to other connection methods. PB pipe for hot water and floor heating supply, and heating pipe have superior pressure withstand property in high temperature condition and those products are able to be applied in a high-rise building.

PB PIPE produced with PB materials having good LTHS and Creep properties is semi permanently usable, and flexibility of heating pipes allows easy bending even in low temperature condition. Also improved Push-Fit System will support your convenient and fast construction compared to any other products.

Jochiwon Plant

Date of Foundation	1992 Year
Major Product	PB PIPE, Distributor, Double Pipe, PB geothermal Pipe
Production Capacity	PIPE Extrusion - 3,067MT Connector Injection - 73MT
Site of Plant	10,160㎡
Lines	Extrusion 6Lines, Injection 4Lines
No. of Employees	32

PB PIPE

Product Information

Products	Applications
PB PIPE for hot water and floor heating PB PIPE for hot water and floor heating supply produced with Polybutene-1 having LTHS and Creep properties from Lyondell Basell Co. is an excellent eco-friendly pipe material in high pressure properties, semi-permanent durability, superior hygienic ability, good noise blocking, and high flexibility in wide temperature ranges.	• Aparment, Multipurpose building • Efficiency apartment and other house
PB Fitting PB Fitting applied with Push-Fit type is a material that provides easier and faster carrying out to work compared with other connection methods.	• Connectors
PB Distributor PB Distributor is made with a superior material that satisfies various domestic and international sanitary standards, and it is the most suitable product for drinking water because of no harmful substance, no corrosion and no scales. Our PB Distributor is light and easy to carry out to work and shows the most excellent properties in high temperature.	• Distributor for hot water and floor heating
Double Pipe Double piping system is a carrying method by burying PB Pipe thrown into CD Pipes with a slab concrete. Our Double Pipe will allow you to save time and costs to replace PB pipe without damaging finishing materials in case of water leaking.	• Aparment, Multipurpose building • Efficiency apartment and other house

Global Network

Hyundai EP has been opening up a new market through global networks and increasing a variety of potential for growth. Starting with a Joint Venture in Suzhou, China 2003, at present we have overseas companies in Beijing, Guangzhou and Dafeng in China, Chennai in India, and a branch office in Nagoya, Japan.

Especially Hyundai EP is getting focused in USA, Slovakia, the Czech Republic, and Turkey as well as the Brazilian market which is one of emerging markets in the world by making the license contract with LyondellBasell for Polypropylene compounds based on widely recognized technologies. Hyundai EP will do our best to take the most competitive position in diversified overseas markets.

Global Network

1 Bundang, Korea
Dangjin
Jincheon
Ulsan
Jochiwon

2 Nagoya, Japan

3 Beijing, China

4 Suzhou, China

5 Guangzhou, China

6 Dafeng, China

7 Chennai, India

Business Partnership with LyondellBasell

8 Turkey

9 Czech

10 Slovakia

11 Brazil

12 USA, Alabama, Georgia

SANHE, CHINA

GUANGDONG, CHINA

DAFENG, CHINA

CHENNAI, INDIA

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