



LOTTE CHEMICAL CORPORATION

COMPANY PROFILE
[Advanced Materials]

LOTTE GROUP



LOTTE's **"Value Line"**

logo boldly illustrates its vision and its commitment to providing new and unexpected value in every moment of your life.

MISSION

We enrich people's lives
by providing superior
products
and services that
our customers love and trust.

VISION

Lifetime
Value
Creator

MANAGEMENT PRINCIPLES

Transparent
management

Strengthening
core competencies

Value-based
management

On-site
management



Financial Highlights

FINANCIAL OVERVIEW (2018)

Business ranking in Korea



Assets



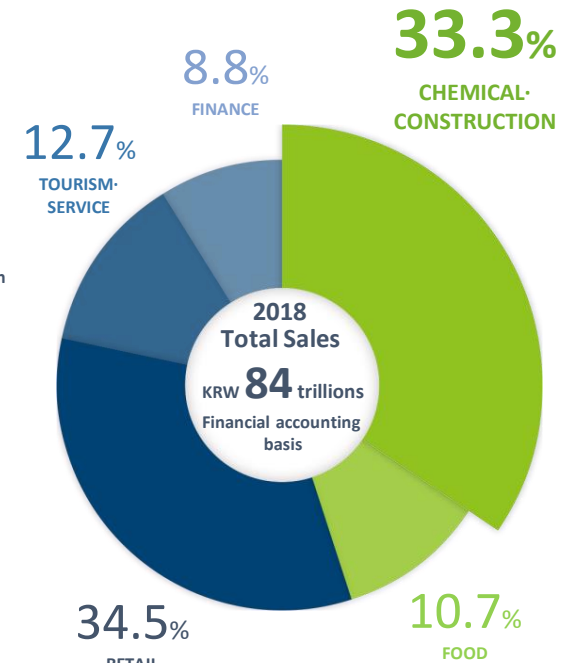
Debt ratio



Annual Sales



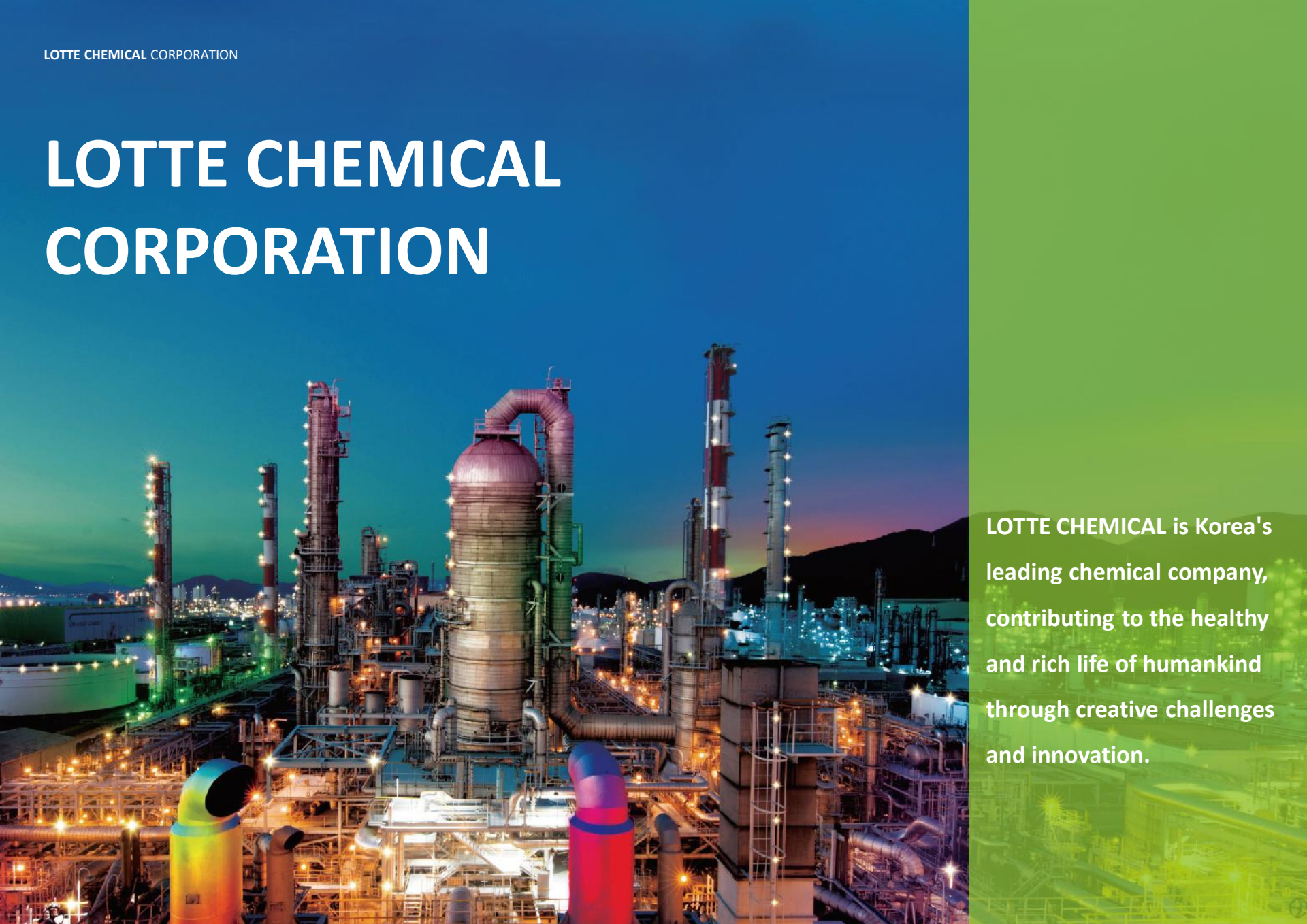
SALES BREAKDOWN BY BUSINESS (2018)



* Source : May 2019 announcement by the Korea Fair Trade Commission

LOTTE CHEMICAL CORPORATION

LOTTE CHEMICAL CORPORATION



LOTTE CHEMICAL is Korea's leading chemical company, contributing to the healthy and rich life of humankind through creative challenges and innovation.

VISION

Becoming more than a leader in the Petrochemical Industry of Korea,
LOTTE Chemical is moving towards the position of
‘Global Top 7 Chemical Company’.



Global
Expansion



Enhancement of
Specialty Products
Business Portfolio
Expansion



New Value
Creation



Fulfillment of
Corporate Social
Responsibility

AT A GLANCE

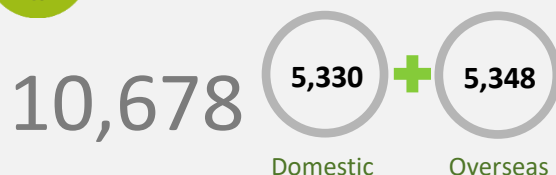


Goal

'Global Top 7 Chemical Company'



Employees Worldwide

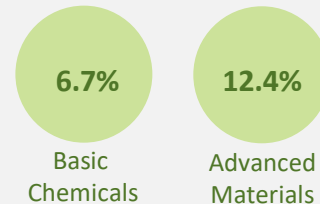


R&D

[R&D Vision]

Vision-oriented R&D Center for Competitive Advantage & Sustainable Growth

[R&D Employees]



BUSINESS PERFORMANCE (2019)

[Annual Sales]

13 USD Billion

[Total Equity]

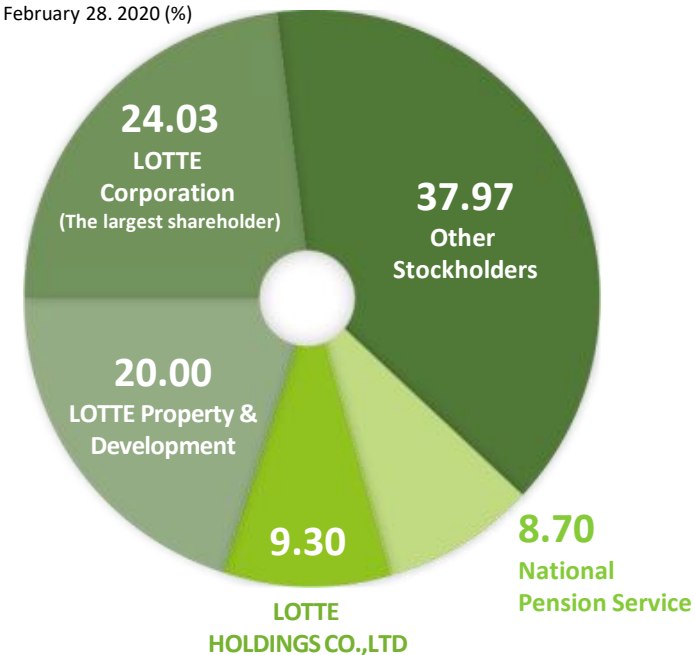
12 USD Billion

[Market Capitalization]

6.6 USD Billion

STOCK INFORMATION

As of February 28, 2020 (%)



SUBSIDIARY

[Major Subsidiaries]

- LOTTE FINE CHEMICAL
- LOTTE CHEMICAL TITAN
- KP CHEMTEC
- SAMBAK LFT
- DACC AEROSPACE
- HANTOK CHEMICALS

[Joint Ventures]

- HYUNDAI CHEMICAL [Hyundai Oilbank]
- LOTTE-GS Chemical [GS Energy]
- LOTTE MCC [Mitsubishi Chemical]
- LOTTE MITSUI CHEMICALS [Mitsui Chemicals]
- LOTTE Versalis Elastomers [Versalis]
- LC USR [Ube Industries & Mitsubishi Corp]

Based on the history of challenge and innovation,
we are making a new history of creation to leap as the world's top chemical company.

LACC/LCLA/LCUSA
CRACKER & EG PLANT GRAND OPENING

Beginning [1970-1990]

1976. 3

- Established Honam Petrochemical

1979. 6

- LOTTE Groups,
Acquired Honam Petrochemical

1979.12

- Started commercial production
at all plants

Growth [1990-2000]

1991. 5

- Initial public offering

1991. 6

- Completed construction of the
Daejeon R&D Center

1991. 12

- Completed NC plant

Leap [2000-2010]

2003. 6

- Acquired Hyundai Petrochemical
(Daesan Plant)

2004. 7

- Acquired KP Chemical (Ulsan Plant)

2006. 8

- Established LOTTE MCC

2010. 11

- Acquired TITAN Chemicals
(LOTTE CHEMICAL TITAN)

2011. 11

- Established LOTTE MITSUI CHEMICALS

Takeoff [2010-]

2012. 12

- Merged KP Chemical and changed the
corporation name to "LOTTE CHEMICAL"

2016. 5

- Acquired **LOTTE ADVANCED MATERIALS,**
LOTTE FINE CHEMICAL from **SAMSUNG Group**

2017. 11

- Completed LOTTE Versalis Elastomers plant

2019. 5

- Completed Ethane Cracking Center
and Ethylene Glycol Plant in U.S.

2020. 1

- Merged **LOTTE Advanced Materials**

[Advanced Materials]

[1988~]

Plastics industry

ABS, PS, C-SAN, EPS

[1992]

Construction materials market

Acrylic solid surface

[2001~]

Localization of sales and production

[Sales] U.S./Germany/China/Thailand

[Production] Mexico/China

[2006~]

Expansion of high value business portfolio

PC and high performance EP, Engineered Stone

[2011~]

Expansion of engineering plastics

2nd polycarbonate plant in Yeosu, Korea

[2011~]

Strong global network

[Sales] Japan [Production]

Hungary/China/Vietnam/India/Turkey (E-stone)



Headquarter

Daejeon R&D Center



Uiwang Office

* [Advanced Materials]
- R&D, Marketing



Daesan Complex

Main Products

EL, LDPE, LLDPE, PP,
EG, SM, BD, BTX



Yeosu Complex

• **Basic Chemicals**

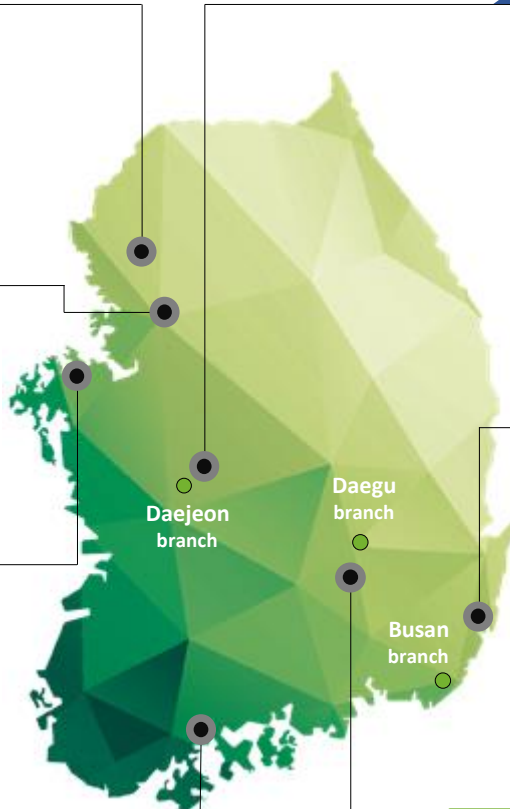
Main Products

EL, HDPE, PP, PC,
PET, EG, BD, BTX

• **Advanced Materials**

Main Products

ABS, SAN, EPS, PC,
E-Stone , Solid Surface



Daejeon
branch

Daegu
branch

Busan
branch

Ulsan Complex

Main Products

BZ, PX, OX, MeX,
PET, PIA, PTA



Daegu Water treatment Complex

Main Products

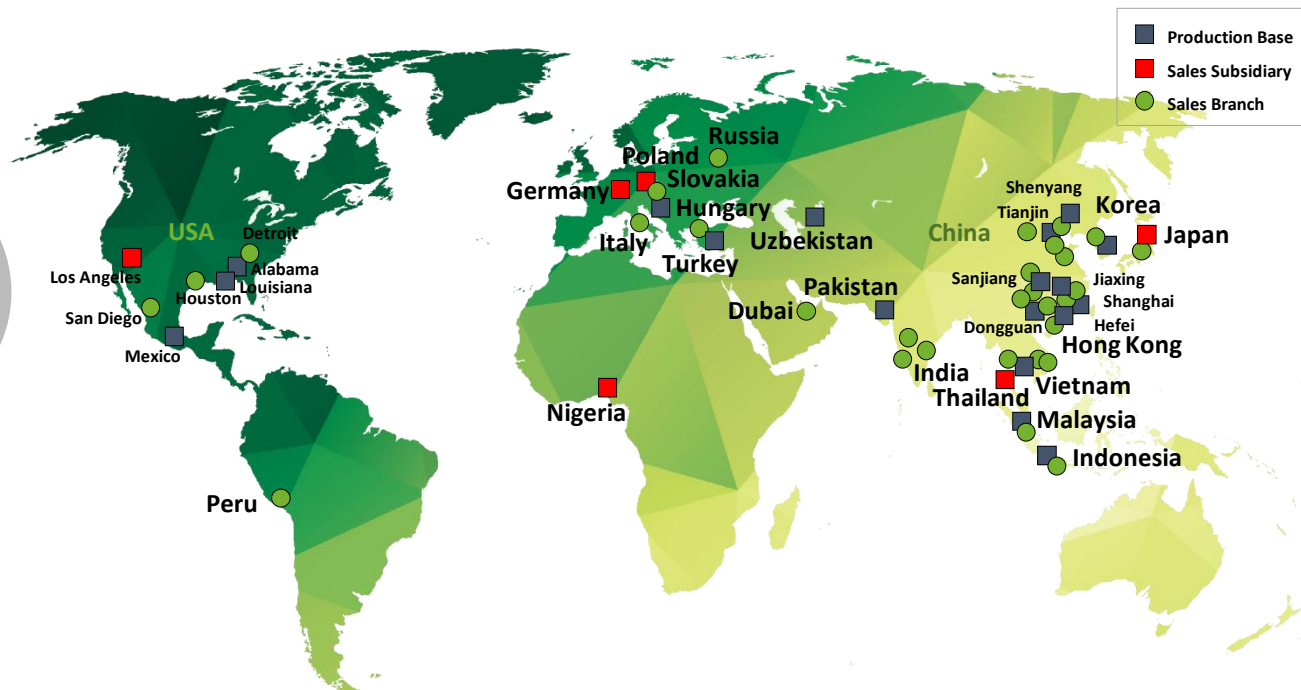
UF Membrane for water
treatment



22
Countries

24
Production
Bases

Exported to **120** countries



LACC, LCLA – U.S



Product
Ethylene
Ethylene Glycol

LC TITAN



Location Malaysia
Location Indonesia
Product Ethylene BZ, TL, BD, Polymers (PE, PP)
Product Polymer(PE)

LC EP - China



Location Jiaxing, Hefei, Shenyang
Tianjin, Dongguan
Product Performance Material, LFT, EPP
Polymers (PC, ABS)

LCHU - Hungary



Product
Polymers (PC, ABS)

LCVN - Vietnam



Product
Polymers (PC, ABS)

LCMX - Mexico

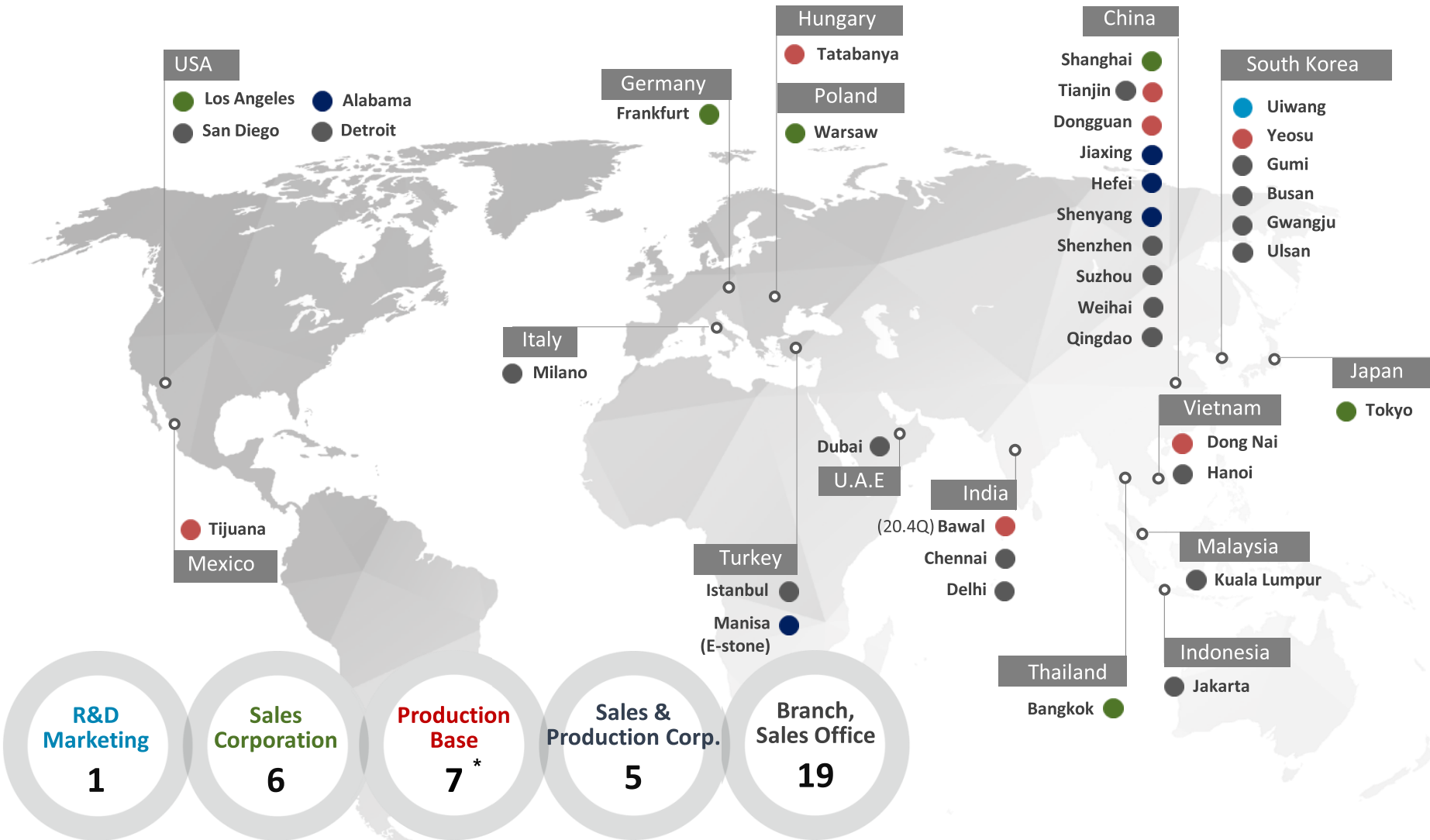


Product
Polymers (PC, ABS)

LC Alabama – U.S



Product
PP Compound



* Including Yeosu plant

Basic
Chemicals

Ethylene 4,500

Propylene 1,697

Styrene Monomer 577

Butadiene 450

Benzene 766

Toluene 339

Mixed Xylene 139

Para-Xylene 750

Ortho-Xylene 210

Meta-Xylene 160

Polymer,
Synthetic
Rubber

High-density Polyethylene 1,605

LDPE/EVA 360

LLDPE 490

Polypropylene 1,820

Polyethylene Terephthalate 520

Acrylonitrile-Butadiene-Styrene 670

Polycarbonate 460

S-SBR 100

EPDM 96

* The production output of LOTTE Versalis Elastomers(JV)

* The production output of LOTTE Versalis Elastomers(JV)

Monomer,
Construction
Materials, etc

Ethylene Glycol 1,830

Ethylene Oxide Adduct 230

PIA 460

* World Production Rank No. 1

Purified Terephthalic Acid 1,100

Methyl Methacrylate MMA 260

- Including the production output(210KT) of LOTTE MCC(JV)

Poly Methyl Methacrylate 110

* The production output of LOTTE MCC(JV)

Acrylic solid surface 970K Sheets

Engineered stone 320K Sheets

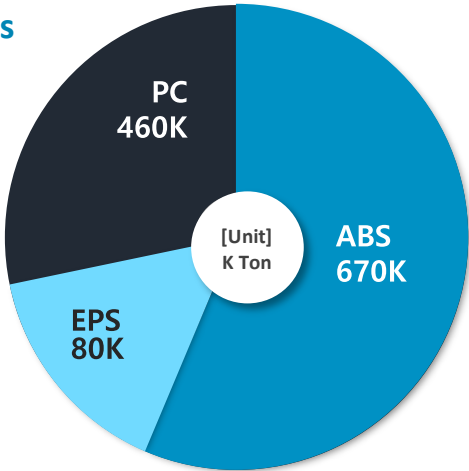
(unit: KTA)

* LDPE: Low-density Polyethylene * EVA: Ethylene-Vinyl Acetate * LLDPE: Linear Low-density Polyethylene * S-SBR: Solution Styrene Butadiene Rubber * EPDM: Ethylene Propylene Rubber

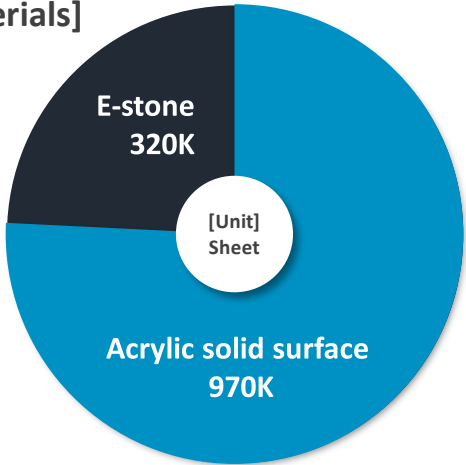
* PIA: Purified Isophthalic Acid

GLOBAL CAPACITY

[Plastics] 1.21M Tons



[Construction Materials] 1.29M Sheets



Production by Regions

[Plastics]



Basic Chemicals			Advanced Materials		
The Business of LOTTE Chemical's [Basic Chemicals] has a diverse product portfolio ranging from Polyolefin, Monomers, Aromatics, based on the Ethylene production (4,500 K Tons per Annum).			LOTTE Chemical's [Advanced Materials] offers a wide array of specialized material solutions tailored for customers keen to innovate their products, ranging from interior/exterior parts of home appliance and IT devices to energy, medical devices and cutting-edge automotive parts.		
					
Basic/ Intermediate Petrochemicals	Polymer	Monomer	High Performance Plastics	Construction & Interior Materials	Water Treatment Membrane

Basic/Intermediate Petrochemicals



Polymer



Monomer



Basic Chemicals	Intermediates	C5 Product
• Ethylene • Propylene • Mixed C4 • BD • BTX	• Me-X • OX • PX • SM	• IPM • DCPD • PIP
(Benzene, Toluene, Xylene)		

PE	PP	PET
• HDPE • LDPE • LLDPE • EVA	• Injection • Blow • Yarn/Fiber • Film • TIPP	• Cool • HOT • ACE • BIO • HIT

EO/EG/GE	EOA	PIA/PTA/MMA	
• HPEO • MEG • DEG • TEG	• BG • BDG • BTG • BPG	• MPEG • VPEG • PEG	• PIA • PTA • MMA • PMMA (produced by LOTTE MCC)

High Performance Plastic Materials

[Value of product enhanced by integrated solution]



starex®

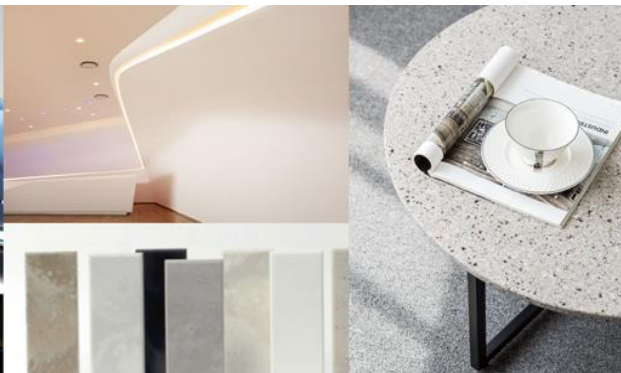
Styrene & general product
ABS, ABS Alloy, ASA, EPS, PP

INFINO®

Engineering plastics
PC, PC Alloy, PBT, mPPE, PA, PPA, PPS, PCT

Upscale Construction Materials

[Refined and pleasant space through tech & design]



staron®

Acrylic solid surface

Radianz®

Natural quartz engineered stone

Locelain®

Engineered porcelain surface

Water Treatment Membrane

[World-class water treatment solutions]



MEMBRIO

World's Best Styrene & General Product

starex®

ABS, ABS Alloy, ASA, EPS, PP

starex® represents state-of-the-art technologies offering the highest experience to customers.



CAPACITY

670K ton
[GLOBAL 5th]

[Extrusion ABS]

Thin-wall &
Vacuum
forming
technology



[Flame Retardant ABS]

Flame retardant
quality
stability



[Transparent MABS]

Scratch-
resistance,
High
transparency



[High Weatherable ASA]

Weatherability,
Color-ability



[Luminous]

Paint-free, Various appearance



[Metal Plating ABS]

Metal plating
adhesion



[PP]

Flame retardant, Modulus,
Appearance



[Antimicrobial Materials]

Antimicrobial, Weatherability



High Performance Engineering Plastics

INFINO®

PC, PC Alloy, High Performance EP

INFINO® creates infinite possibilities through future-oriented and differentiated products.



CAPACITY

460K ton

[GLOBAL 3rd]

[PC/ABS/GF, PC/ABS/MF]

High stiffness & gloss, Thin-wall



[PBT/GF, PPA/GF, High Impact PC]

Metal adhesive, High modulus,
Slim design



[PC, Diffusion PC for Energy App.]

Light efficiency, Electrical property



[Medical PC]

Reliability, Chemical resistance



[Flame Retardant PC & PC Alloy]

Long-term heat stability, Durability



[FR PC Sheet _ Reduced smoke]

Light-weight, Non-toxic



Performance Materials

POPELEN, SUPRAN, ADPOLY, LOTTMER, HOWPOL

A wide range of performance materials line-up based on 30 years of accumulated R&D experience and technology

[POPELEN] Compounded PP

High Modulus, Impact



[SUPRAN] LFT

Long-Fiber reinforced Thermoplastics



[ADPOLY]

Modified adhesive polyolefin resin



[LOTTMER] TPE

Thermoplastic elastomer



[HOWPOL] EPP

Eco-friendly Expanded Polypropylene



Total Solution for Mobility

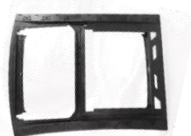
Exterior	Interior	Lighting	Structure
			
 	 	 	 
Weatherability	Fresh Interior	Functionality & Productivity	Light-weight & Metal Replacement
• Metal Plating ABS & PC/ABS • High Weatherable ASA • High Weatherable/Impact PC/ASA • High Modulus PC/PET • High Flow/Impact PC/PBT • High Impact PP, LFT • High Weatherable PP, LFT • High Flow/Paint-free PP • High Modulus/Impact Continuous Fiber Reinforced Composite (WLFT, 3D-Tow)	• Low TVOC ABS • Low Gloss ABS, PC/ABS • Low Gloss, Emotional Feeling PC/ASA • Light Diffusion PC • Light Blocking ABS, PC/ABS • High Flow PC/ABS • High Heat/Chemical Resistant PC/ABS, PC/PBT • Chemical Resistant PC/ABS • Low TVOC/Odor PP, LFT • Surface Quality LFT • High Impact Expanded PP	• High Weatherable/Impact PC • High Gloss/Low Gas PBT • High Gloss/Low Gas PC/ABS • High Modulus/Heat Resistant PP	• Conductive/High Heat Resistant PA/PPE/CNT • Dimensional Stability PBT/ASA/GF • High Flow/Surface Quality PBT/PET/GF • High Heat Resistant PPA • High Flow LFT • High Heat Resistant LFT
Safety	Upscale Design	Optical Solution	Part-integrated Design

'Material technology innovates every part of automotive.'

PC, PC/ABS, PC/ASA, High Heat ABS,
Luminous, TPO, LFT



PBT/ASA/GF,
LFT



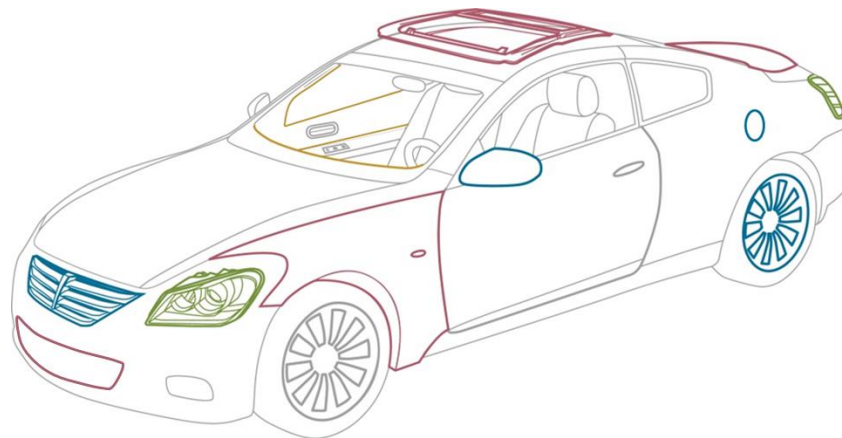
Blow Molding ABS
PC/ABS, PC/PET



PC/ABS,
High Heat ABS



MP ABS, PC/ABS, HP ABS,
ASA, PC/PET, TPO, EPP



Metal Plating PPA



LFT, WLFT



PBT, PC, TPO



PA/PPE



ASA, HH ABS



MP ABS, PC/ABS
PC/ASA



PA/PPE, TPV



Automotive Materials Award & Certification

WORLD CLASS PRODUCT



SPE

Award Winner



[2014]
Paint-free Metallic Materials_
Luminous PC/ABS (2015 Ford Mondeo)

[2017]
3D Pattern with Double Injection_
Luminous ABS+PC (2018 Ford Fiesta)

KOREA

NET Certification



[2013]
Carbon Fiber Reinforced Composite

[2015]
3D Pattern with Double Injection /
Paint-free Foamed Injection Technology
 for Interior

[2016]
Long-term Thermal Aging PPA
 for Engine Room

[2017]
3D Tow Insert Injection Technology for Stiffener

IR52 Award Winner



[2013]
LFT Rear Seat Cushion for Interior

[2018]
Improved Thermal Aging PPA
 for Engine Room

Construction & Interior Materials

staron®
Solid Surfaces

Acrylic solid surface with hygienic property and various design applications

Radianz®
Quartz Surfaces

Natural quartz engineered stone with durability and natural beauty

Locelain®
Sintered Stone

Engineered porcelain surface with natural and beauty



Decorative Surfacing Materials - Wall coverings, Displays, Kitchen tops & Bathroom sink

Eco-friendly Construction & Interior Materials with excellent material properties

Easy maintenance and a wide variety of patterns and colors

Acrylic solid surface with upscale texture and excellent processability for construction

Water Treatment Membrane

MEMBRIO

We provide clean and safe water through world-class water treatment solutions based on system and process engineering technologies suited to the water treatment industry.



Technology	Cost	Service	Quality
- Optimized process design based on self-developed materials - Membrane fouling control technology - Operation monitoring system	- Products with high energy efficiency - Reduced operation and management costs	- Outstanding engineering technologies and specialists - Quality assurance through after-sales service	- Safe water quality after treatment - Excellent pollutant rejection rate

[Advance offering of solutions tailored for customers]

thanks to the in-house materials testing facility
for safety certification

In-house Integrated Process

Certification
Test



Certification
Report



Result
Review



UL 94 [Flame Retardant] Cert Lab

- Asia-first UL 94 flame retardant cert in-house test lab (2012)
- Flame retardant test (HB, V, 5VB/5VA) & Review

UL RTI [Long-term Heat-resistance] Cert Lab

- South Korea-first RTI (746B) long-term heat-resistance cert in-house test lab (2018)
- Long-term heat-resistance test & Review
: High-temp. testing of materials (for more than 60,000 hrs.)

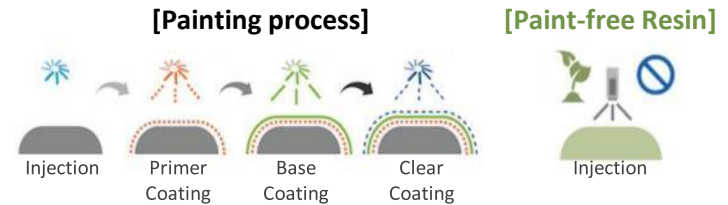
Eco Production Process

Non Phosgene Process



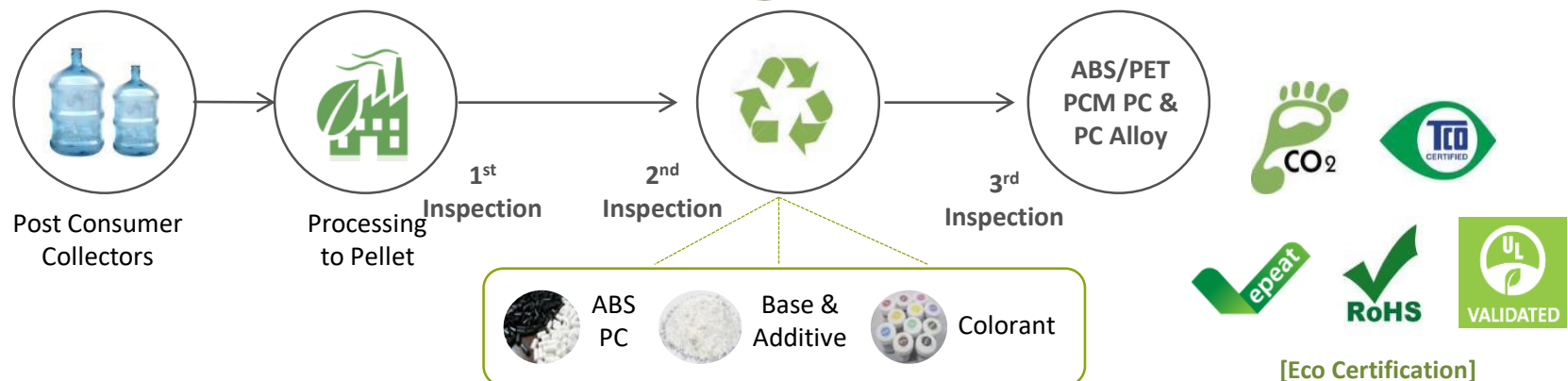
Non-painting Materials

Paint-free, Cost Saving



PCM (Post Consumer Material) Based Materials

Eco-friendly Recycled Plastics



MYX

Materialize Your eXperience

[Design + Engineering]

Create end-user's emotional feelings and experience through materials



'Design Solution of Materials/Color'

Customized Color Solutions : More than **55,000** colors



LOTTE Chemical won the prestigious **iF / reddot award**, the **first honor awarded to a plastics firm**, reflecting the recognition for its outstanding material design competitiveness.

(Eleven global awards received since 2015)

iF
Design
Award



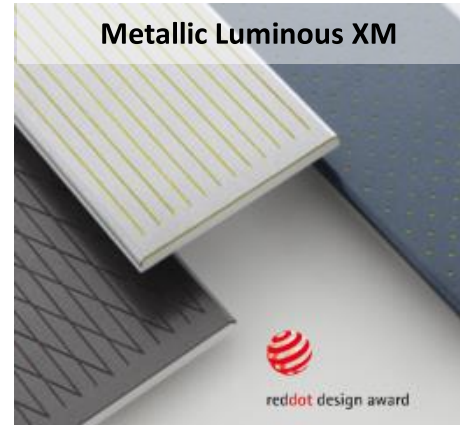
reddot
Award



Emotional Feeling, Touch & Feel



Metallic Luminous XM



Emotional Feeling Material



Extrusion ABS
Slim/Gloss Material



Lighting Reactive



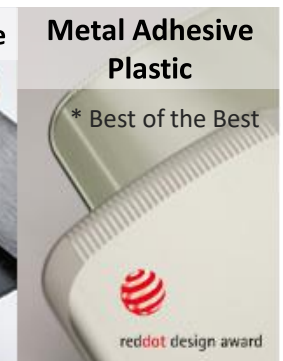
Color Blending Effect



A Modular Texture Guide



Metal Adhesive
Plastic



MISSION

**We enrich people's lives by providing
superior products and services that
our customers love and trust**



www.lottechem.com (LOTTE CHEMICAL Website)

www.lotteadms.com (LOTTE CHEMICAL's Advanced materials Business Website)