



Eco-friendly Solution

Material & Technology



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LOTTE CHEMICAL

Sustainable Management System



<p>7 AFFORDABLE AND CLEAN ENERGY</p>	<p>7. Ensure access to affordable, reliable, sustainable and modern energy for all</p>
<p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p>	<p>12. Ensure sustainable consumption and production patterns</p>
<p>13 CLIMATE ACTION</p>	<p>13. Take urgent action to combat climate change and its impacts</p>

The SDGs stand for 'Sustainable Development Goals', which was adopted by the UN General Assembly. The term refers to global goals that the UN and the international community aim to achieve from 2016 to 2030.

Implementation of UN SDGs

LOTTE Chemical is taking the lead in implementing the UN's Sustainable Development Goals. We are focused on achieving carbon neutrality and creating a circular cycle of resources, thereby contributing to the Goal 7, 12 and 13. We believe our efforts will help the world move forward.

LOTTE CHEMICAL

Eco-friendly Strategy & Goals

COMPANY SLOGAN

We lead every step for a greener and better tomorrow.

Every Step for GREEN

ESG VISION & STRETAGY

LOTTE Chemical is making efforts to implement ESG-based environmental management and secure growth engines in line with its corporate vision for a more prosperous and sustainable growth. Under the ESG vision titled "Green Promise 2030," we are mapping out an eco-friendly business strategy and carrying out key projects.

[ESG] Environmental Management

LOTTE Chemical is actively applying ESG criteria to its management in an effort to become a sustainable company. In particular, the company is implementing enterprise-wide environmental management by analyzing global eco-friendly trends and risks, and drawing up a preemptive response system.



GREEN PROMISE 2030

<p>Net - Zero</p> <ul style="list-style-type: none"> • Net-Zero (2050) • Carbon reduction growth (2030) • RE100 membership • Establishment of green ecosystem 	<p>Circulation and Coexistence</p> <ul style="list-style-type: none"> • Resource-circulating system • Responsible management of products and supply chains • Stepped-up application of global health and safety standards 	<p>Green Innovation</p> <ul style="list-style-type: none"> • Leading the growth of the H2 ecosystem • Expansion of global battery material business
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LOTTE CHEMICAL [Advanced Materials]

Integrated Resource-circulating Solutions

In line with the enterprise-wide eco-friendly strategy and goals, LOTTE Chemical's Advanced Materials business introduces [the integrated eco-friendly and resource-circulating solutions], featuring a range of fields from recycling process technology and product lineups to quality management system and certifications.

01

Resource-circulating technology platform and products

- ① High-quality and eco-friendly recycling technology & product lineup
- ② Continued R&D support for recycling technology

02

Global supply and production management system

- ① Partnerships with global providers of renewable raw materials to secure a stable supply
- ② Operation of regional production hubs
- ③ Expansion of the eco-friendly market through joint development with customers

03

Strict quality control and certification standards

- ① Operation of a thorough in-house quality management system
- ② Securing the reliability of product quality by obtaining certifications from official institutions



LOTTE CHEMICAL [Advanced Materials]

Recycled Plastic Production Platform

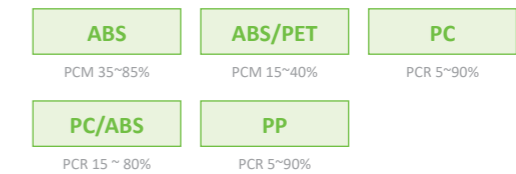
LOTTE Chemical's Advanced Materials business offers diverse lineups for each process of the resource circulation cycle in a bid to meet the customer's need for eco-friendly products, based on the company's recycled plastic production platform that utilizes its proprietary technology and expertise, and its strict quality control.

01

MECHANICAL RECYCLING

A recycling process solution that [shreds post-consumer plastic products and then reuses them in the production process]

Line-ups



02

CHEMICAL RECYCLING

A recycling process solution that [uses the chemical decomposition to extract raw materials from post-consumer plastic products]

Line-ups



03

CLOSED LOOP RECYCLING

A circular recycling process solution that [collects plastics used in post-consumer products, and then recycles them for the production of the same finished products]

SOLUTION 01. MECHANICAL RECYCLING

Mechanical recycling refers to a process in which plastics from waste household appliances or consumer goods are classified by type and then go through cleaning and crushing processes before getting re-used as intermediate materials for the production of finished products. The products with re-used materials of LOTTE Chemical can match those with new materials in terms of performance.

PROCESS



PRODUCT LINE-UP

PC	PC/GF	PC/ABS	
50% GW-1055	30% GW-3203	10% GW-1069 (m)	[FR] 30% GC-1045 (1.5 V0)
[FR] 20% GC-1022U (1.5 V0)	[FR] 30% GC-3103	20% GW-1083 (m)	[FR] 30% GV-1048 (1.5 5VB)
[FR] 50% GV-1025 (1.0 V0)	PC/PET	40% GW-1209M (m)	[FR] 60% GV-1066 (1.5 V0)
[FR] 10% GV-1091B (1.5 5VB) * *(OBP 5%+ PCR 5%)	30% GW-2159 (m)	50% GW-10695 (m)	
[FR] 50% GV-1005B (1.0 V0) * *(OBP 5%+ PCR 45%)	PC/PBT		
	10% GW-3080 (m)		
PP	PP-GF (GF 30%)	PP+EPDM	PP-TD
50% ET-310 (m)	20% LGI-161R (m)	20% ER-362 (m)	20% A-352R (TD 20%) (m)
	30% RG-153 (m)	70% ER-321F (m)	20% A-353R (TD 30%) (m)
	50% LRP-112 (m)	95% ER-321 (m)	50% AR-354 (TD 40%) (m)
ABS	ABS/PET	ABS/PC	
35% GC-0735	28% GC-0700	20% GW-1020 (m)	
55% GC-0755	40% GC-0730	30% GW-1030 (m)	
85% GC-0785	5% GC-0705 *		

% : PCR Content | * Ocean Bound Plastic | (m) Mobility application

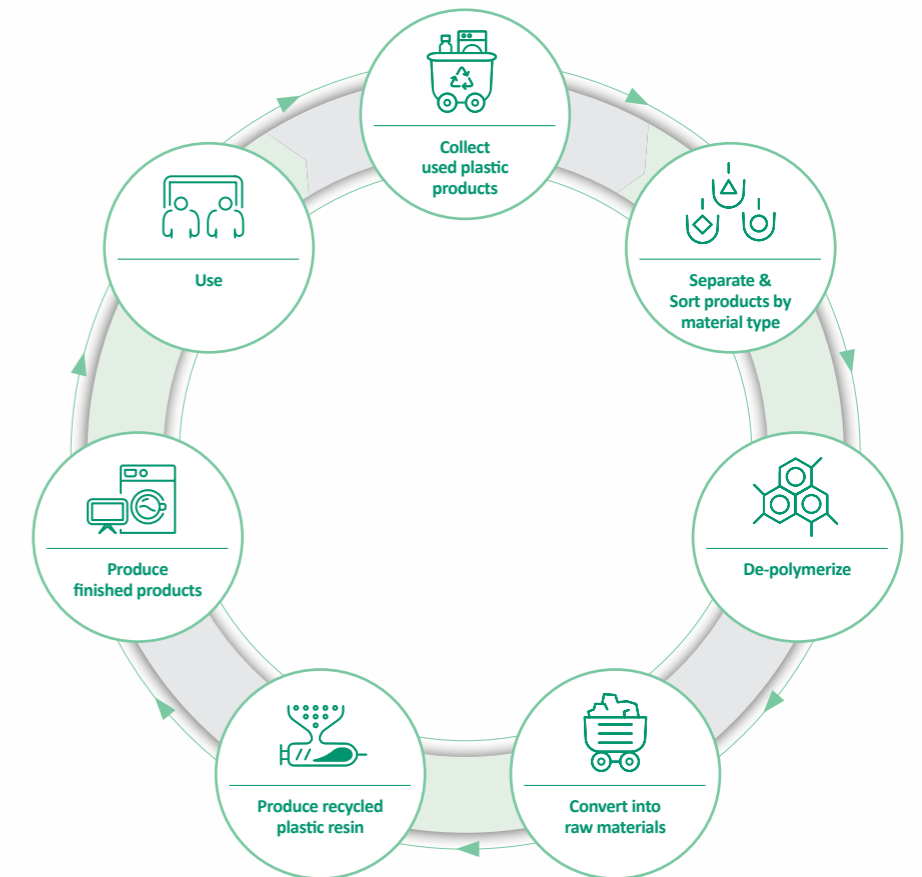
APPLICATIONS



SOLUTION 02. CHEMICAL RECYCLING

Chemical recycling refers to a recycling process in which post-consumer products or by-products from processes are converted into secondary raw materials through thermal de-polymerization. LOTTE Chemical has applied chemical recycling to the mass production of transparent MABS for the first time in the world.

PROCESS



PRODUCT LINE-UP

MABS	Transparent	20% GV-0510
		35% GV-0520
		35% GV-0520I

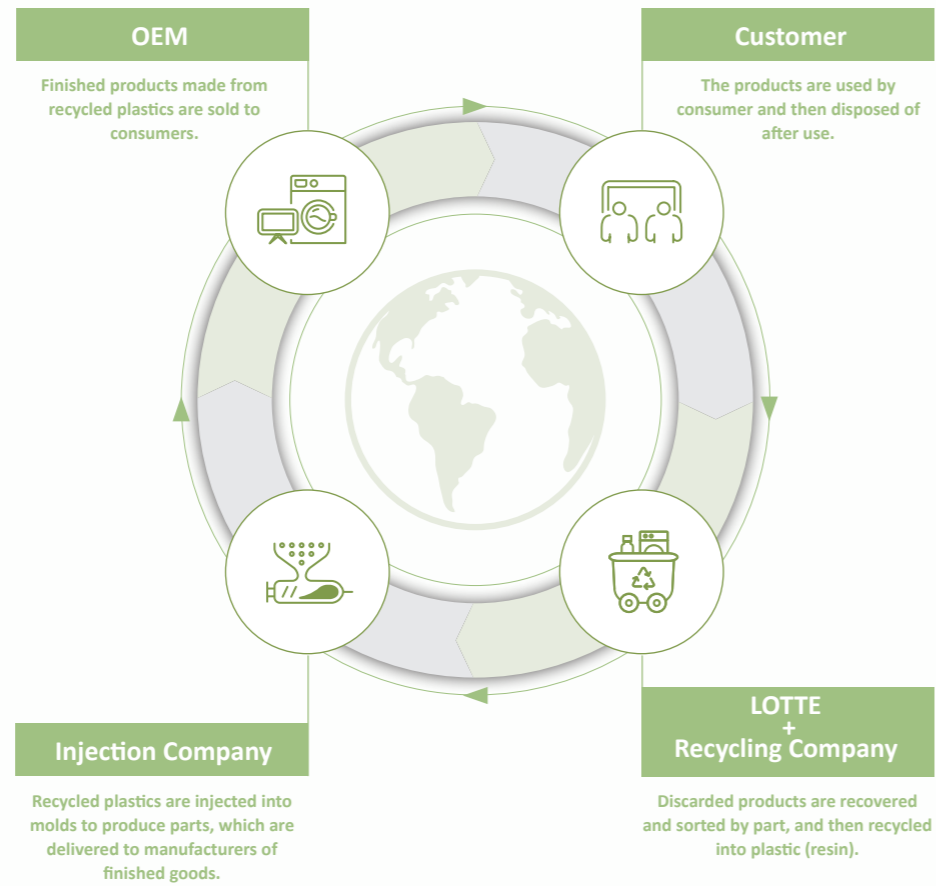
APPLICATIONS



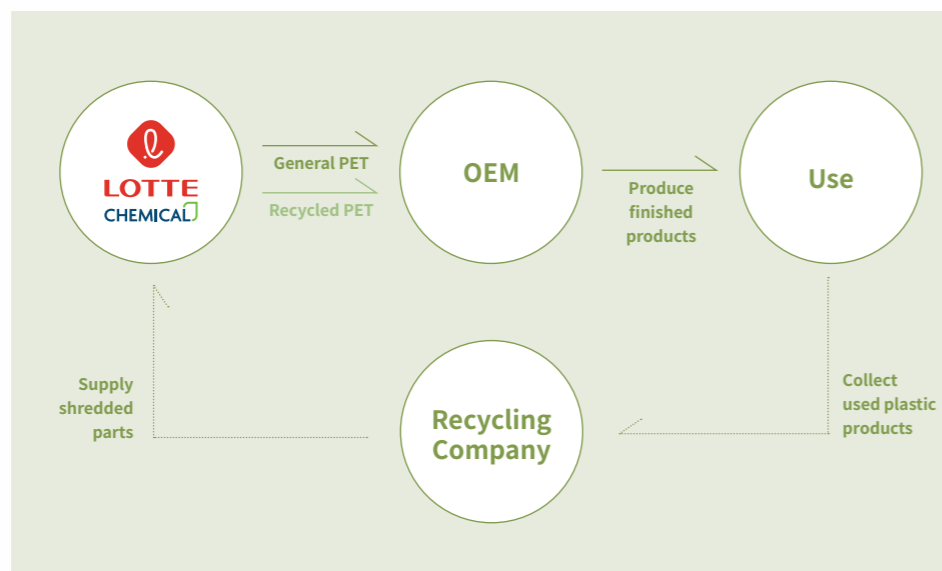
SOLUTION 03. CLOSED LOOP RECYCLING

LOTTE Chemical has been paving the way for creating a circular economy by establishing a closed-loop process that maximizes waste reduction and retains product quality in collaboration with multiple global customers.

PROCESS



COLLABORATION CASE



Environmental Assessment & Certification

LOTTE Chemical, moving toward a sustainable tomorrow, provides certification solutions tailored for customers through the assessment of external certification bodies, in an effort to meet the surging demand for environmental certification in relation to global warming and pollution.

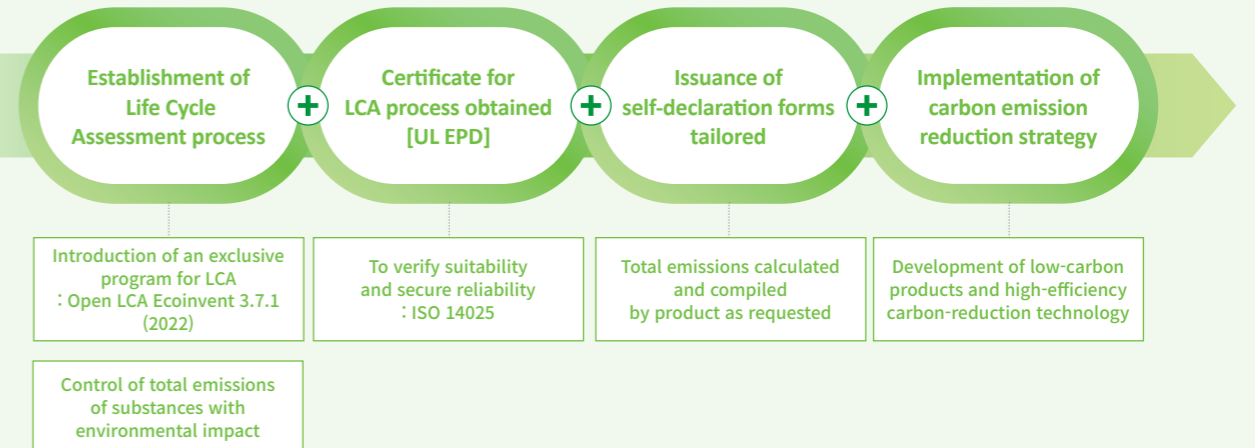
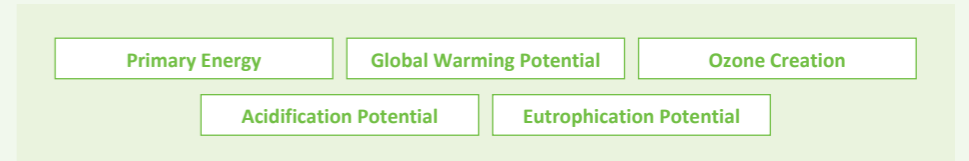
Product Life Cycle Assessment (LCA) Certificate



UL – EPD (Environmental Product Declaration)

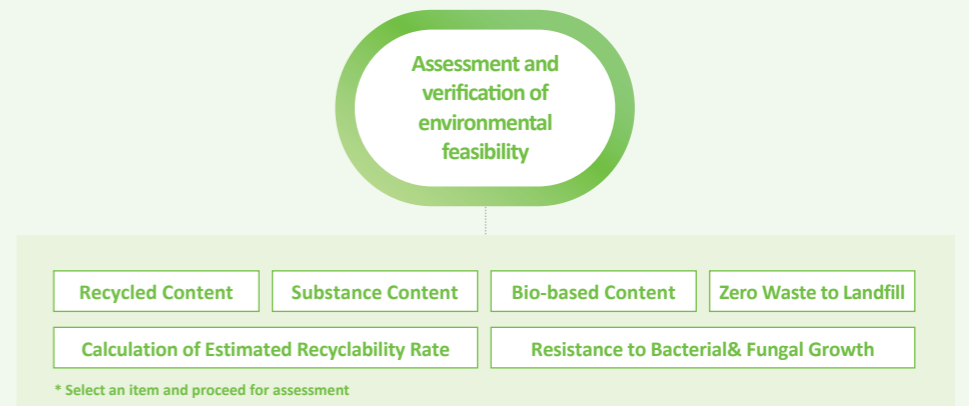
LOTTE Chemical has undertaken the environmental impact assessment on the production process of its compounding products in accordance with ISO 14040, and obtained the UL's EPD (Environmental Product Declaration) certification, based on ISO 14025 and 14044.

(*PRC PC [GC-1214] production process)







UL – ECV (Environmental Claims Validation)

LOTTE Chemical's eco-friendly product lineup has received UL's Environmental Claim Validation (ECV) for environmental assessment criteria.





CASE STUDY

MECHANICAL RECYCLING

	1	3	4	4
Application	 Air conditioner	 Laptop	 TV remote control	 Automotive - Under cover
Product	ABS/PET GC-0700	PC/ABS GC-1101	PC/ABS GC-1017	PP ER-321
Region	Global	Korea	Global	Global (U.S.A., Europe)
Key features	Chemical resistance	- Impact strength - Colorability	Flame retardant (Over V-1)	Weatherability

CHEMICAL RECYCLING

	1	2
Application	 Washing machine - Window display	 Cosmetic case
Product	Transparent MABS GV-0510	Transparent MABS GV-0520
Region	Global	Global (Korea, France, U.S.A)
Key features	World-first Transparent MABS based of the chemical recycling process : Transparency, Surface quality & Impact strength	

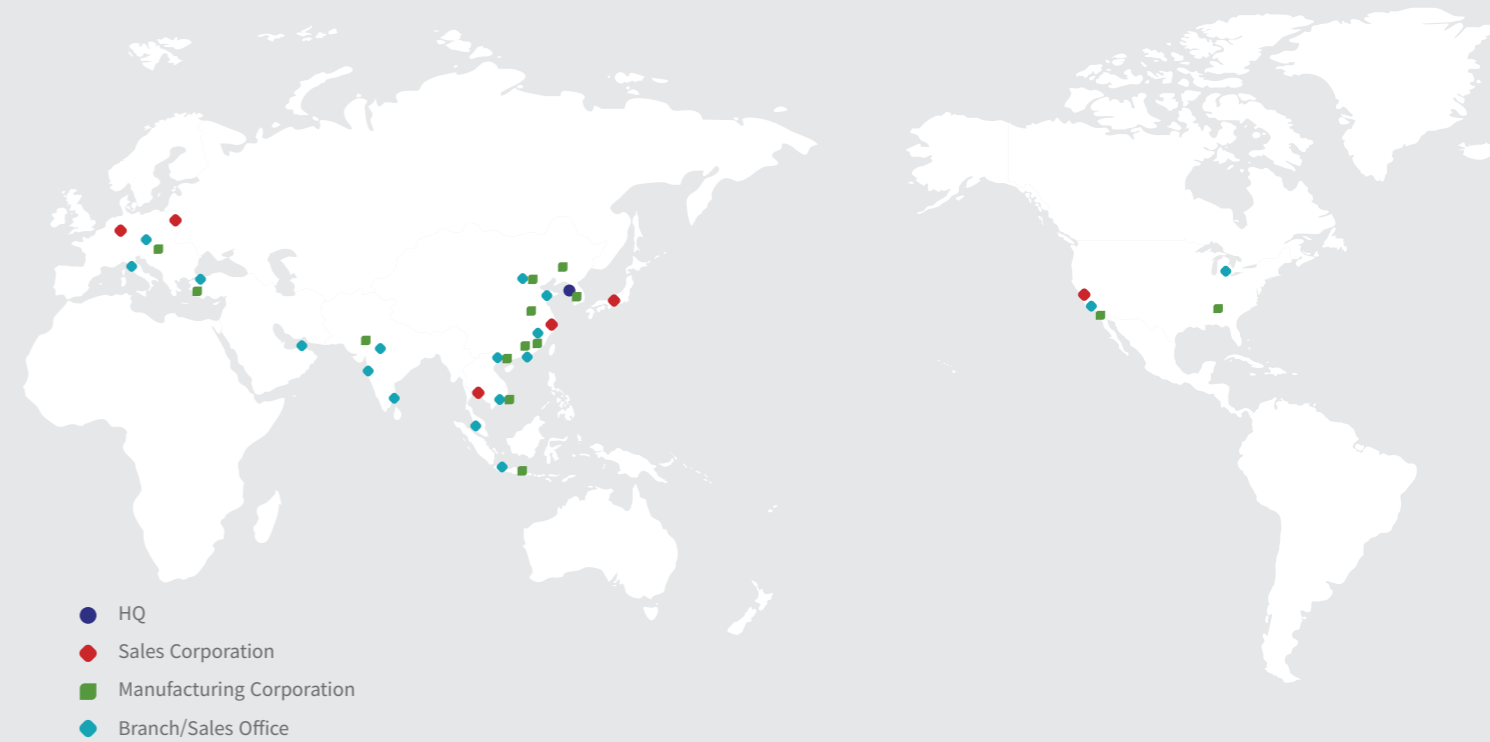


[World's first chemically recycled transparent material applied to BIC razors]

BIC, a global manufacturer of plastic products, has incorporated LOTTE Chemical's first-ever chemically recycled transparent MABS in the production of women's razors, in an attempt to respond to the stepped-up regulations on the use of disposable plastics in Europe.

Product	Transparent MABS GV-0520
OEM	BIC (Europe)
Application & Model	Women's razors - Click 3 Soleil, Click 3 Soleil Sensitive, Click 4 Soleil
Key features	Balanced properties - Transparency, Surface quality, Impact strength & Flowability

Global Network [Advanced Materials]



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