

Product Solutions

FOR BETTER LIVING





Because our plastic and chemical products are all around you,
we take utmost care in every step throughout their journey
to deliver only the best for you.



About GC

PTT Global Chemical Public Company Limited (GC) is PTT Group's petrochemical flagship. We are committed to strengthening our leading position in the chemicals business by combining environmentally-friendly innovations with advanced technologies to develop products for people's better living.

GC comprises diversified and comprehensive petrochemical businesses, including manufacturing and distribution of upstream, intermediate, and downstream petrochemical products.

These products can be converted into other chemical products and serve as basic feedstock for downstream industries such as packaging, apparel, communications and electronic equipment, electrical appliances, vehicles, construction materials, engineering-based plastics, agricultural equipment, and much more. These products are not only part of our daily lives but they also enhance the way we live.



Shareholder

We deliver the best business performance through trustworthiness to create fair and sustainable value for shareholders.

Business Partner

We provide superior solutions from innovative and sustainable products and services to be the best choice for our business partners.



Mission



Vision

To be a Leading
Global Chemical Company
for Better Living



Society

We integrate social and environmental responsibility into our business practices to achieve sustainable development.

Employee

We build an organization that is prepared for dynamic change and learning by providing a happy working environment promoting the development of employees' capabilities and enabling them to meet new challenges with dedication to the organization and to professional excellence.

Product Overview & Certificate



InnoPlus is a registered trademark of PTT Global Chemical Public Company Limited (GC). GC manufactures Polyethylene (PE), nameplate capacity at 1,950,000 MTA per year and Polyethylene Terephthalate (PET) nameplate capacity at 200,000 MTA per year.



HDPE

InnoPlus High Density Polyethylene (HDPE) has a total production capacity at 850 KTPA. InnoPlus HDPE is made from the low-pressure polymerization using the slurry process of Mitsui Technology. InnoPlus HDPE offers high certainty of specific properties to meet all particular needs and complies with international standards regulations i.e., U.S FDA 21 CFR 177.1520 and EU 10/2011. InnoPlus HDPE also meet the Restriction of Hazardous Substances (RoHS) according to 2002/95/EC

LLDPE

InnoPlus Linear Low Density Polyethylene (LLDPE) has a total production capacity at 400 KTPA. This technology can provide a wide range of LLDPE products.

LDPE

InnoPlus Low Density Polyethylene (LDPE) has a total production capacity of 300 KTPA. InnoPlus LDPE is produced by a high pressure tubular process, a technology licensed by LyondellBasell.

Certificate of HDPE, LDPE, LLDPE



ISO 9001
Quality Management System by MASCI



ISO 50001
Energy Management System by MASCI



GHPs
Good Manufacturing Practice System by MASCI



mLLDPE

InnoPlus Metallocene Low Density Polyethylene (mLLDPE) has a total production capacity at 400 KTPA. InnoPlus mLLDPE is produced by low pressure polymerization, using gasphase of Unipol Process under the license of Univation Technolog who is leading global technology licensor of proven metallocene PE technology. These unconventional mLLDPE from variety of catalyst offer a superior puncture and draft impact resistance, good seal ability and excellent optical property. InnoPlus mLLDE is widely used for cast and blown film applications.

PET

InnoPlus Polyethylene Terephthalate (PET) has total production capacity at 200 KTPA. InnoPlus PET is produced by the leading technological know-how of Lurgi Zimmer GMBH (Germany) and Bühler AG (Switzerland).



ISO 14001
Environment
Management
System by MASCI



ISO45001
Occupational
Health and Safety
Assessment
Series by MASCI



HACCP
Hazard Analysis
Critical Control
Point System
by MASCI

GC Product Brand of Other Polymers



PlastMate is registered trademark of PTT Global Chemical Public Company Limited (GC) for various type of compound resin such as PE compound, PP compound, PS compound, PC compound, ABS compound and Bioplastics Compound.



InnoEco is registered trademark of PTT Global Chemical Public Company Limited (GC) for high quality recycled plastic resin products. (Post-consumer recycled: PCR) of the GC group.

Maximum production capacity of 45,000 tons of recycled plastic resins each year.

Consisting of 30,000 tons of PCR PET resin and 15,000 tons of PCR HDPE resin.



DIAREX is a registered trademark of PTT Global Chemical Public Company Limited for Polystyrene (GPPS and HIPS).

The capacity of GPPS and HIPS are 60,000 MTA and 30,000 MTA, totally 90,000 MTA. Furthermore, we offer a wide range of Diarex grade with various properties for using in injection molding or extrusion process.



X PURGE is registered trademark of GC Marketing Solutions Company Limited (GCM) subsidiary of PTT Global Chemical Public Company Limited (GC) for Purging compound. Distributed by GC Marketing Solutions Company Limited (GCM)

X PURGE is a high efficiency ready-to-use purging compound which provides fast and effective color, material change and contaminant removal in the machine without disassembly. X PURGE will reduce machine downtime and/or maximize productivity. This product is designed for cleaning various types of the machines i.e., injection molding machines, blow molding machine, blown film machine, sheet casting machine.



InnoSis is a registered trademark of GC Marketing Solutions Company Limited, a subsidiary of PTT Global Chemical Public Company Limited (GC) for polyethylene trading.

Trading polyethylene of InnoSis is the product under the concept of being a leading distributor of plastic resin who is developing products to meet customer needs and create better quality products.

GC Product Label

Bioplastics are plastics derived from agricultural raw materials (Biobased) or petroleum (Petrobased). Bioplastics have a plastic-like quality and characteristics. They can be melted and formed by general processes with general machines; only slight adjustments may be needed. For bioplastics made from agricultural raw materials, they are produced by a fermentation process that converts agricultural raw materials into monomers, which are then used to produce plastic pellets. Currently, the raw materials used in bioplastics production are corn, sugarcane, and cassava.

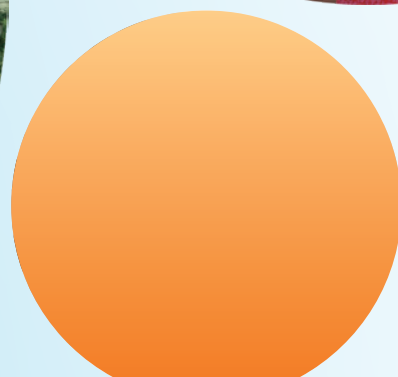
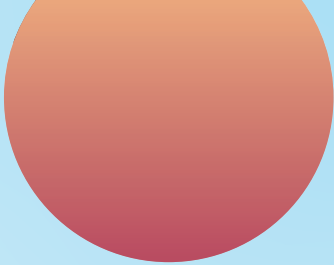




START
TODAY
SAVE
TOMORROW

เริ่มต้น
วันนี้
ประหยัด
วันพรุ่งนี้

103.90





Solutions

For Every Product Applications

GC commits to continually develop plastic resins covering all applications various market to support all needs, reinforce efficiency including adding value to products for all industries such as packaging, agriculture, home goods and personal care, construction, electrical appliances, automotive and others.

GC Sustainable Polymer Product

GC has placed important on greenhouse gas reduction, sustainable water management, and environmentally friendly product development. We have applied the Circular Economy principles into our organization through the GC Circular Living concept for higher efficiency of resource consumption.



Post-Consumer Recycled (PCR)



ENVICCO, a recycled plastic resin production plant, produces the post-consumer recycled (PCR) resins. ENVICCO's Products are made through a mechanical recycling process that consistently produces high quality PCR resins. Complying with global standards, our 100% PCR resins are now available to the market under the brand InnoEco.



Bioplastics



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Climate Change Strategy and Target

Material Topics: Climate Strategy and Energy Management

Impact Level: Very High

Stakeholders:



Investor



Customer



Public Sector



Employee



Supplier and Business Partner

Target: Target to reduce greenhouse gas emissions (scope 1 and 2) by 20 within 2030

- Achieve net zero emissions (scope 1 and 2) by 2050.
- Halve scope 3 emissions by 2050.

Sustainable Water Strategy, Target and Performance

Material Topics: Sustainable Water

Impact Level: Medium

Stakeholders:



Public Sector



Supplier and Business Partner

Target:

- GC has set the target to reduce water consumption intensity by 10 percent, based on Business as Usual (BAUs), within 2023 compared to base year (2013)
- Halve dependence on current water sources by 2032

Circular Economy Strategy and Target

Material Topics: Circular Economy

Impact Level: High

Stakeholders:



Investor



Customer



Public Sector



Community and Society

Target:

- Assess GC group's potential in circular economy based on BS 8001:2017 standard.
- Build cooperation with networks, partners, and external agencies to monitor a product throughout its life cycle using advanced recycling and upcycling processes

Product Stewardship Strategy

Material Topics: Product Stewardship

Impact Level: Medium

Stakeholders:



Customer



Public Sector



Supplier and Business Partner



Shareholder

Target:

- Products assessed with Eco-Design Criteria on an annual basis
- 100 percent of GC products received Carbon Footprint of Product (CFP)
- Increase proportion of high-performance and green products to 30 percent of total products by 2030
- 100 percent of products to be certified with Carbon Footprint of Product (CFP)

PCR LDPE

Film and Flexible Packaging



Squeezable Tube



Food & Beverage Bundle Packaging



Personal Care Bundle Packaging

Post Consumer Recycled Polyethylene Resin-LDPE

InnoEco: PCR LDPE			
Properties	Test Method	Unit	InnoEco D021NF-50
Melt Flow Rate (2.16 kg/190 °C)	ASTM D1238	g/10 min	0.12
Density	ASTM D792	g/cm ³	0.918



PCR HDPE





Rigid Packaging



Personal Care and
Lubricant Oil Bottle



High-quality and 100% PCR resins which comply with global standard to the market under brand InnoEco.

InnoEco: PCR HDPE						
Properties	Test Method	Unit	Grade			
			HN035NB	HW035NB	HM035NB	HM035NJ
Physical Properties						
MFR (190 °C, 2.16 kg)	ASTM D1238	g/10 min	0.35	0.46	0.58	2
Density	ASTM D1505	g/cm ³	0.963	> 0.970	0.959	0.957
Mechanical Properties (Based on compression specimens)						
Tensile Strength at Yield	ASTM D638	kg/cm ²	300	277	270	270
Tensile Strength at Break	ASTM D638	kg/cm ²	173	157	160	140
Elongation at Break	ASTM D638	%	460	490	330	200
Flexural Modulus	ASTM D790	kg/cm ²	13,800	13,700	12,600	12,600
Notched Izod Impact Strength	ASTM D256	kg.cm/cm	9.3	6	6	4
ESCR; 25% Igepal, F ₅₀	ASTM D1693	hrs	24	24	-	-
Color			 Natural White	 Opaque White	 Purple	 Grayish-Green
Application	Extrusion blow molding, Home & personal care bottles, Lubricant Container					Injection molding applications of household product

Recommendation: Injection Molding Temperature : 170 - 220 °C
Extruder Temperature : 165 - 190 °C
Die Temperature : 180 - 195 °C

PCR PET

Rigid Packaging



Food & Beverage
Bottle



High-quality and 100% PCR resins which comply with global standard to the market under brand InnoEco.

InnoEco: PCR PET				
Properties	Test Method	Unit	Grade	
			TN080FB	TN085FB
Physical Properties				
Intrinsic Viscosity (IV)	Relative to ASTM D4603	dl/g	0.80±0.03	0.85±0.03
Acetaldehyde (AA)	ENV-Method	ppm	Max 1.5	Max 1.5
Moisture Content	ENV-Method	%	Max 0.2	Max 0.2
Color Properties				
L*	CIELAB	-	Min 63	Min 70
b*	CIELAB	-	Max 1.0	Max 1.0
Application	Food & Beverage, Home & Personal Care Bottles			CSD, Food & Beverage, Home & Personal Care Bottles

Recommendation:
Barrel Temperature : 270 - 295 °C
Drying : 160 - 170 °C, 4 - 6 hrs.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose. All above values are typical values, not to be construed as specification.

PCR Rotational Molding

Construction



Furniture & Playground

InnoEco: PCR Rotational Molding			
Properties	Test Method	Unit	InnoEco H040NU-05 Color
Physical Properties			
Melt Flow Rate (2.16 kg/190 °C)	ISO 1133	g/10 min	4.2
Density	ISO 1183	g/cm ³	0.944
Vicat Softening Temperature	ASTM D1525	°C	116
Mechanical Properties (Compression Specimens)			
Tensile Strength at Yield (50 mm/min)	ISO 527	MPa	20
Tensile Strength at Break	ISO 527	MPa	25
Elongation at break	ISO 527	%	1,100
Flexural Modulus (1.3 mm/min)	ISO 178	MPa	710
ESCR, F50 (Condition A, 100% Igepal)	ASTM D1693	hrs	24
ESCR, F50 (Condition A, 10% Igepal)	ASTM D1693	hrs	5
Izod Impact Strength	ASTM D256	kg.cm/cm	7

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Bioplastics Compound

Film and Flexible Packaging



Bioplastic Compound Resin : Film

Bioplastics Compound Resin			
Properties	Test Method	Unit	PlastMate PB05001F
Melt Flow Rate (2.16 kg/190 °C)	ASTM D1238	g/10min	5.0
Density	ISO 1183	g/cm ³	1.26
Tensile Strength (MD)	ASTM D882	MPa	25
Tensile Strength (TD)	ASTM D882	MPa	20
Elongation at Break (MD)	ASTM D882	%	170
Elongation at Break (TD)	ASTM D882	%	350
Dart Impact	ASTM D1709	g	450

*Remark: Film sample thickness 35 micron, BUR = 2.5 (For machine testing), MD = Machine direction and TD = Transverse direction
 Recommendation: Die Temperature: 170 - 190 °C Extruder Temperature: 180 - 200 °C

Bioplastics

Rigid Packaging



Toothpaste



Straw



Cutlery



Bioplastics				
Properties	Test Method	Unit	PL34002J for general injection	PL03404J for crystallized PLA high heat injection
Physical Properties				
Melt Flow Rate (190°C, 2.16 Kg)	ASTM D1238	g/10min	30	3.4
Melt Flow Rate (210°C, 2.16 Kg)	ASTM D1238	g/10min	70	-
Density	ASTM D792	g/cm ³	1.26	1.31
Mechanical Properties (Injection specimens)				
Tensile Strength	ASTM D638	MPa	40	60
Notched Izod Impact Strength	ASTM D256	J/m	70	40
Flexural Modulus	ASTM D790	MPa	1,960	5,500
Flexural Strength	ASTM D790	MPa	-	100
Thermal Properties (Injection specimens)				
Heat Deflection Temperature	ASTM D648	°C	55	130
Vicat Softening Point	ASTM D1525	°C	110	160

PL03404J Recommendation: Nozzle temperature: 200 - 210 °C

Extruder temperature: 215 - 200 °C

Bioplastics			
Properties	Test Method	Unit	PL04005E / PL04006E for biostraw longer shelf life
Physical Properties			
Melt Flow Rate (190°C, 2.16 Kg)	ASTM D1238	g/10 min	3.5
Density	ASTM D792	g/cm ³	1.31
Mechanical Properties (Film Specimens)			
Tensile Strength	ASTM D882	MPa	40 (MD)
		MPa	35 (MD)
Tensile Modulus	ASTM D882	MPa	1,400 (MD)
		MPa	1,500 (TD)
Elongation at Break	ASTM D882	%	240 (MD)
		%	140 (TD)

PL04005E for biostraw longer shelf life 6 months.

PL04006E for biostraw longer shelf life 12 months.



Chemistry For Better Living





Website



Contact Us



Technical Document
for Polymer Products



LINE
Official Account

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Date as of December 2023