

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

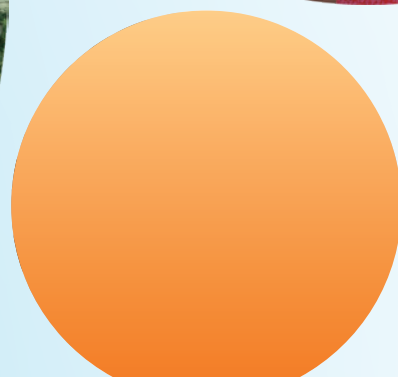
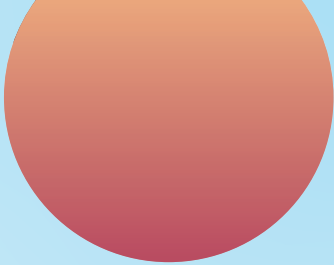
Bioplastics are plastics derived from agricultural raw materials (Biobased) or petroleum (Petrobased). Bioplastics have a plastic-like quality and characteristics. They can be melted and formed by general processes with general machines; only slight adjustments may be needed. For bioplastics made from 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

ประหยัด
ต้นทุน





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.

Electric and Electronics (Home Appliances)

Plastics are the fundamental material used for manufacture of electrical appliance components, and falling into two broad categories: thermoplastics such as polystyrene and polypropylene, which can be repeatedly melted down and remoulded and thermosets such as urea formaldehyde which, once set, cannot be remelted, making them suitable for applications where heat is encountered.

Plastics are easier to process and provide flexibility to design ergonomic devices and easily moulded and have excellent finishing which makes it an ideal choice across several applications.

The competition in the plastics market for electrical appliances is expected to heat up and intensify further with the presence of plethora of players. These players are increasingly investing in new technologies and advanced equipment to fortify their market share. The continued dominance of small and large players over the market share is making a fragmented competitive landscape in the plastics market for electrical appliances. Top players are ramping their investment on the marketing and advertisement of high margin product to increase their revenue.

International Standard Compliances

	<p>RoHS Restriction of Hazardous Substances: EU Directive 2011/65/EU</p>		<p>Halal Islamic law for food relate goods/product</p>		<p>US FDA Food and Drug Administration (FDA) Specification according to US FDA 21 code of Federal regulations part 177.1520 ©</p>		<p>EU FDA Plastic Materials and Articles intended to Come into contact with food</p>
	<p>JCII Japan Chemical Innovation and Inspection Institute.</p>		<p>GB9685 - 2016 (China FDA) The Hygienic Standards for Uses of Additives in Food Containers and Packaging Materials* under GB31603-2015</p>		<p>UL 94 The Standard for Safety of Flammability of Plastic Materials for Parts in Devices and Appliances testing, a plastics flammability standard released by Underwriters Laboratories.</p>		





Electric and Electronics

(Home Appliances)




DIAREX: PS							
Properties	Test Method	Unit	Grade				
			H350	H350E	H820E	H950	H360
Physical Properties							
Melt Flow Rate (200 °C, 5 kg)	ASTM D1238	g/10 min	3.5	2.6	2.8	3	5
Vicat Softening Point (1 kg)*	ASTM D1525	°C	104	101	100	105	104
Deflection Temperature* (18.56 kg/cm ²)	D648	°C	78	76	-	79	-
Gloss (60 ° Gardner)	D523	%	-	-	-	90	-
Mechanical Properties							
Tensile Strength at Yield	ASTM D638	lb/in ²	4,250	4,000	3,600	4,900	4,800
Tensile Elongation	ASTM D638	%	55	53	50	50	40
Flexural Strength	ASTM D790	lb/in ²	6,000	5,500	5,100	6,500	6,800
Flexural Modulus (x10,000)	ASTM D790	lb/in ²	27	26	36	26	27
Izod Impact Strength	ASTM D256	ft.lb/in	2	2	2	2	2
Rockwell Hardness	ASTM D785	Scale	R112	R112	R112	R112	R112
Underwriter Laboratory*	UL-94		HB (1.5 mm)	HB (1.5 mm)	HB (1.5 mm)	HB (1.5 mm)	HB (1.5 mm)
Type			HIPS High Impact	HIPS High Impact	HIPS High ESCR	HIPS High Gloss	HIPS High Impact
End Product	Refrigerator accessories			E&E tray	Refrigerator liner	Refrigerator liner and accessories	
	Household appliance					Household appliance	
	Office automation apparatus			Household appliance	Extrusion sheet with high ESCR	Office automation apparatus	
Product Highlight			Balance flowability and mechanical properties which suitable for injection.	Balance flowability and mechanical properties which suitable for extrusion and thermoforming	Good drawability with High ESCR for extrusion and thermoforming	High gloss high impact polystyrene with a good process ability and good heat resistance	Balance flowability and mechanical properties which suitable for injection.

Recommendation:
 DIAREX H360 can be processed with recommended temperature between 190 – 240 °C and mold temperatures between 30 and 70 °C.
 Melt temperature should not exceed 260 °C.
 Note: Modifications of the processing conditions based on the variations of the product design and machine configuration.


*Data based on injection molding test pieces.

DIAREX: PS				
Properties	Test Method	Unit	Grade	
			THF77	THH102
Physical Properties				
MFR (200 °C, 5 kg)	ASTM D1238	g/10 min	8.4	2.6
Vicat Softening Point (1 kg)*	ASTM D1525	°C	101	106
Mechanical Properties				
Tensile Strength at Yield*	ASTM D638	lb/in ²	6700	7500
Tensile Elongation*	ASTM D638	%	1.6	2.5
Izod Impact Strength*	ASTM D256	ft.lb/in	0.4	0.4
Rockwell Hardness*	ASTM D785	Scale	M80	M80
Deflection Temperature* (18.56 kg/cm ²)	ASTM D648	°C	78	81
Underwriter Laboratory*	UL-94	-	HB(1.5 mm)	HB(1.5 mm)
Type			GPPS Standard	GPPS High Heat
End Product			Refrigerator and fan accessories	
Product Highlight			Good flow and clarity which a specific balance of flow and strength. This grade is recommended for injection application.	Balance flowability, strength, heat resistance, and good clarity. This grade is recommended for both extrusion and injection applications

*Data based on injection molding test pieces.

Compound Resin			
Properties	Test Method	Unit	PlastMate C1809PJ-02
Physical Properties			
Melt Flow Rate (230 °C, 2.16 kg)	ASTM D1238	g/10 min	5
Density	ASTM D792	g/cm ³	1.33
Mold Shrinkage	Internal Method	°C	0.2 - 0.4
Mechanical Properties			
Tensile Strength	ASTM D638	MPa	120
Elongation	ASTM D638	%	2
Flexural Modulus	ASTM D790	MPa	12,000
Notched Izod Impact Strength	ASTM D256	J/m	100
Rockwell Hardnes	ASTM D785	Scale	R107
Thermal Properties			
Vicat Softening Point	ASTM D648	°C	153
Heat Deflection Temperature	ASTM D1525	°C	148
End Product			 Injection Molded Part, Pulley
Product Highlight			Polypropylene Composite Reinforced with 50% Glass Fiber for Construction and Electrical Part.

Recommendation:
Drying condition before use: 80 °C for 3 hours
Barrel injection temperature: 190-230 °C
Nozzle temperature: 210-230 °C
Mold temperature: 40-60 °C

Compound Resin			
Properties	Test Method	Unit	PlastMate S908C
Physical Properties			
Melt Flow Rate (200 °C, 5.0 kg)	ASTM D1238	g/10 min	2.2
Density	ASTM D792	g/cm ³	1.11
Mechanical Properties			
Tensile Strength at Yield	ASTM D638	MPa	31
Elongation at Break	ASTM D638	%	28
Tensile Modulus	ASTM D638	MPa	1,940
Flexural Strength	ASTM D790	MPa	54
Flexural Modulus	ASTM D790	MPa	2,480
Notched Izod Impact Strength	ASTM D256	J/m	168
Thermal Properties			
Vicat Softening Point	ASTM D1525	°C	89
Heat Deflection Temperature	ASTM D648	°C	79
Electrical Properties			
Surface Resistivity (at 23 °C, 50% RH)	ASTM D257	Ohm/square	10 ⁹ - 10 ⁵
End Product			 Conductive Reel
Product Highlight			HIPS Compound with Conductive Property for Injection Application

Recommendation:
Drying condition before use: 80 °C for 3 hours
Barrel injection temperature: 190-230 °C
Nozzle temperature: 210-230 °C Mold temperature: 40-60 °C

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.



Chemistry For Better Living





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Technical Document
for Polymer Products



LINE
Official Account

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Date as of December 2023