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 by GC

InnoPlus by GC is a registered trademark of PTT Global Chemical Public Company Limited (GC). GC manufactures Polyethylene (PE), nameplate capacity at 1,850,000 MTA and Polyethylene Terephthalate (PET) nameplate capacity at 200,000 MTA

HDPE

InnoPlus by GC High Density Polyethylene (HDPE) has a total production capacity at 850,000 MTA 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.

LLDPE

InnoPlus by GC Linear Low Density Polyethylene (LLDPE) is produced within a combined LLDPE & mPE production capacity of 800,000 MTA, using gas phase Unipol Process technology under the license of Univation Technology, a leading global technology licensor. This technology can provide a wide range of LLDPE products.

LDPE

InnoPlus by GC Low Density Polyethylene (LDPE) has a total production capacity of 300,000 MTA 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

mPE

InnoPlus by GC
Metallocene Polyethylene (mPE) is produced within a combined LLDPE & mPE production capacity of 800,000 MTA, using low-pressure polymerization via gas-phase Unipol Process technology under the license of Univation Technology, a leading global technology licensor of proven metallocene PE technology.

This advanced catalyst technology provides superior puncture and dart impact resistance, excellent sealability, and outstanding optical properties.
InnoPlus mPE is widely used for cast and blown film applications.

PET

InnoPlus by GC
Polyethylene Terephthalate (PET) has total production capacity at 219,000 MTA
InnoPlus PET is produced by the leading technological know-how of T.EN Zimmer GmbH (Germany) and Polymetrix 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 by GC 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 by GC 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 MTA of recycled plastic resins. Consisting of 30,000 MTA of PCR PET resin and 15,000 MTA of PCR HDPE resin.

DIAREX by GC is a registered trademark of PTT Global Chemical Public Company Limited (GC) for Polystyrene

The capacity of HIPS is 30,000 MTA. We offer a wide range of Diarex grades with various properties for using in injection.

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

X PURGE by GC 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 by GC 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 castingmachine.

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

Solutions

For Every Product Applications

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

Non-Woven

Healthcare

Diapers | Wipes | Feminine Napkin | Filtration | Face Mask

Non-Woven is fabric that is directly made from fibers. It has not been processed from yarn or knitted before it became a fabric.

Non-Woven can be designed with a variety of characteristics and properties to suit different applications. The variety of characteristics and properties of non-woven is due to the selection of a wide variety of fibers, both natural and artificial fibers, combined with a non-woven forming process that can be performed in many ways. Non-woven also has a fast production process when it is produced in large quantities, therefore, the production cost is low, so it can be used for disposable products. Non-woven can be made into baby or adult diapers, sanitary napkins for women, materials for cleaning medical devices, medical gown and face mask. It is widely used in healthcare, medical, automotive, packaging and other industries as well."

International Standard Compliances

RoHS
Restriction of Hazardous Substances:EU Directive 2011/65/EU

TIS 816-2565 (มอก.816)
Polyethylene industrial standard

Halal
Islamic law for food relate goods/product

US FDA
Food and Drug Administration (FDA) Specification according to US FDA 21 code of Federal regulations part 177.1520 ©

EU FDA
Plastic Materials and Articles intended to Come into contact with food

JCII
Japan Chemical Innovation and Inspection Institute.

InnoPlus : HDPE			
Properties	Test Method	Unit	Non-Woven
			HD1010S
MFR (190 °C, 2.16 kg)	ASTM D1238	g/10 min	20
Density	ASTM D1505	g/cm³	0.956
Melting Temperature	ASTM D3418	°C	130
Tensile Strength at Yield	ASTM D638	kg/cm²	270
Tensile Strength at Break	ASTM D638	kg/cm²	140
Elongation at Break	ASTM D638	%	300
Vicat Softening Point	ASTM D1525	°C	122

Monofilament & Yarn

Fishing Net | Rope | Agricultural Net | Tarpaulin | Mosquito Net

InnoPlus : HDPE				
Properties	Test Method	Unit	Monofilament	High Performance Monofilament
			HD5000S	HD5800S
MFR (190 °C, 2.16 kg)	ASTM D1238	g/10 min	0.8	0.3
Density	ASTM D1505	g/cm^3	0.954	0.954
Melting Temperature	ASTM D3418	°C	134	136
Tensile Strength at Yield	ASTM D638	kg/cm^2	290	290
Tensile Strength at Break	ASTM D638	kg/cm^2	390	480
Elongation at Break	ASTM D638	%	>1,000	>1,000
Flexural Modulus	ASTM D790	kg/cm^2	12,000	11,000
Notched Izod Impact Strength	ASTM D256	kg.cm/cm	17 (P*)	79 (NB*)
Vicat Softening Point	ASTM D1525	°C	125	127

Note : *C = Complete Break *P = Partial Break *NB = Non Break

Geomembrane

Water Reservoir | Mining | Biogas

InnoPlus : HDPE			
Properties	Test Method	Unit	Geomembrane
			HD6699G
MFR (190 °C, 2.16 kg)	ASTM D1238	g/10 min	0.11
Density	ASTM D1505	g/cm^3	0.942
Tensile Strength at Yield	ASTM D638	kg/cm^2	190
Tensile Strength at Break	ASTM D638	kg/cm^2	370
Elongation at Break	ASTM D638	%	850
Fluxural Modulus	ASTM D790	kg/cm^2	7,500
Notched Izod Impact Strength	ASTM D256	kg.cm/cm	56 (NB)*
Durometer Hardness	ASTM D2240	Shore D	59
Stress Crack Resistance	ASTM D5397	hrs	>3,000
Vicat Softening Point	ASTM D1525	°C	118

Note : *C = Complete Break *P = Partial Break *NB = Non Break

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.

Automotive Parts

Because of durability, easy processing, possibly-renewable raw material and ability for design adjustment, plastic materials are commonly used in automotive industry.

The plastics can provide safety and stability with proper design while cheaper than metals. The global growth of plastic demand for automotive will be increasing significantly from some factors such as design ability, weight reduction, pollution emission control and design capability.

Weight reduction of vehicles can make more fuel efficiency and reduce greenhouse gas (GHG) emission in the cost-effective way.

International Standard Compliances

IMDS
International Material Data System

GADSL
Global Automotive Declarable Substances List

RoHS
Restriction of Hazardous Substances:EU Directive 2011/65/EU

REACH

ELV Directive
End-of-Life Vehicle Directive

Automotive Parts

InnoPlus by GC

Exterior | Interior | Under The Hood | Coating | 2 Wheels

InnoPlus : HDPE					
Properties	**Test Method**	**Unit**	**Film**	**Injection**	**Thermoform**
			HD6000F	**HD1600J**	**HD7000H**
MFR (190 °C, 2.16 kg)	ASTM D1238	g/10 min	0.16	12	0.1
MFR (190 °C, 21.6 kg)	ASTM D1238	g/10 min	-	-	10
Density	ASTM D1505	g/cm³	0.956	0.958	0.952
Melting Temperature	ASTM D3418	°C	135	132	130
Tensile Strength at Yield	ASTM D638	kg/cm²	260	280	280
Tensile Strength at Break	ASTM D638	kg/cm²	370	150	400
Elongation at Break	ASTM D638	%	950	210	900
Flexural Modulus	ASTM D790	kg/cm²	11,000	12,500	11,000
Notched Izod Impact Strength	ASTM D256	kg.cm/cm	27 (NB*)	3(C*)	42 (NB*)
Durometer Hardness	ASTM D2240	shore D	65	64	63
Vicat Softening Point	ASTM D1525	°C	125	125	126
ESCR; 25% Igepal, F_{50}	ASTM D1693	Hours	> 500	Initial	> 1,000
End Product			Fender (wheel arch liner)	Under body shield (Protector)	Automotive bed liner
Product Highlight			• Good processability and drawdown ability • High mechanical strength • Good stiffness • Good heat sealability	• Good processability • Good stiffness	• Outstanding mechanical strength • Good weathering resistance • Excellent product appearance

Note : *C = Complete Break *NB = Non Break

InnoPlus : HDPE				
Properties	**Test Method**	**Unit**	**Blow Molding**	
			HD6600B	**HD6200B**
MFR (190 °C, 2.16 kg)	ASTM D1238	g/10 min	0.4	0.45
Density	ASTM D1505	g/cm³	0.957	0.962
Melting Temperature	ASTM D3418	°C	135	135
Tensile Strength at Yield	ASTM D638	kg/cm²	320	330
Tensile Strength at Break	ASTM D638	kg/cm²	400	350
Elongation at Break	ASTM D638	%	1,000	1,000
Flexural Modulus	ASTM D790	kg/cm²	14,000	15,000
Notched Izod Impact Strength	ASTM D256	kg.cm/cm	10 (P*)	12 (P*)
Durometer Hardness	ASTM D2240	shore D	65	65
Vicat Softening Point	ASTM D1525	°C	125	125
ESCR; 25% Igepal, F_{50}	ASTM D1693	Hours	400	60
End Product			Reservoir Tank	Air Duct
Product Highlight			• High environmental stress cracking resistance (ESCR) • High impact strength • Wide variety blow molding applications of small to medium size container	• Optimum balance of processability • High environmental stress cracking resistance (ESCR) • High impact strength • Wide variety blow molding applications of small to medium size container

Note : *P = Partial Break

InnoPlus : LLDPE			
Properties	**Test Method**	**Unit**	**Injection**
			LL8420A
MFR (190 °C, 2.16 kg)	ASTM D1238	g/10 min	20
Density	ASTM D792	g/cm³	0.924
Molded Plague Properties			
Tensile Strength at Yield	ASTM D638	MPa	15
Tensile Strength at Break	ASTM D638	MPa	10
Elongation at Break	ASTM D638	%	700
Secant Modulus	ASTM D638	MPa	310
Vicat Softening Point	ASTM D1525	°C	92
Durometer Hardness	ASTM D2240	Shore D	53
End Product			Fender (Wheel Arch Liner)
Product Highlight			• Designed for injection molding application • Very narrow molecular weight distribution • Excellent impact strength and rigidity • Excellent processibility

Electric and Electronics

(Home Appliances)

Home Appliance

Office Automation

Electronic Packaging

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

RoHS
Restriction of Hazardous Substances:EU Directive 2011/65/EU

Halal
Islamic law for food relate goods/product

US FDA
Food and Drug Administration (FDA) Specification according to US FDA 21 code of Federal regulations part 177.1520 ©

EU FDA
Plastic Materials and Articles intended to Come into contact with food

JCII
Japan Chemical Innovation and Inspection Institute.

GB9685 - 2016 (China FDA)
The Hygienic Standards for Uses of Additives in Food Containers and Packaging Materials" under GB31603- 2015

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.

DIAREX : PS						
Properties	Test Method	Unit	Grade			
			H350	H350E	H370	H950
Physical Properties						
MFR (200 °C, 5 kg)	ASTM D1238	g/10 min	3.5	2.6	5	3
Vicat Softening Point (1 kg)*	ASTM D1525	°C	104	101	100	105
Deflection Temperature* (18.56 kg/cm2)	ASTM D648	°C	78	76	74	79
Gloss (60 * Gardner)	ASTM D523	%	-	-	-	95
Mechanical Properties						
Tensile Strength at Yield	ASTM D638	lb/in2	4,250	4,000	4,000	4,900
Tensile Elongation	ASTM D638	%	55	53	40	50
Flexural Strenght	ASTM D790	lb/in2	6,000	5,500	6,500	6,500
Flexural Modulus (x10,000)	ASTM D790	lb/in2	30	30	33	30
Izod Impact Strength	ASTM D256	ft.lb/in	2	2	2	2
Rockwell Hardness	ASTM D785	Scale	R112	R112	R112	R112
Underwriter Laboratory*	UL-94		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 Impact	HIPS High Gloss
End Product			Refrigerator accessories Household appliance Office automation apparatus	E&E tray Household appliance	Refrigerator liner and accessoriesliner Household appliance Office automation apparatus Air condition part	
Product Highlight			• Designed for injection molding application • Good balance between flowability and mechanical properties	• Designed for extrusion and thermoforming applications • Good balance between flowability and mechanical properties	• Designed for injection molding application • Good balance between flowability and mechanical properties	• High gloss • High impact • Good processability and heat resistance

Recommendation:
DIAREX 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.

Masterbatch Carrier

Masterbatch carrier resins act as base polymers, enabling the addition of colors, fillers, functionalities and specific mechanical properties to products.

Grade	MFR	Density	Form	Application
Unit	g/10min	g/cm³		
Standard method	ASTM D1238	ASTM D792		
HD1010J	20	0.956	Pellet	HDPE Masterbatch Carrier
LD2420K	4	0.924	Pellet	LDPE Masterbatch Carrier
LL8420A	20	0.924	Pellet	LLDPE Masterbatch Carrier
LL8420AB	20	0.924	Powder	LLDPE Masterbatch Carrier

LL8420AB

was grinded from LL8420A to

- ✓ Higher pigment, filler, additive dosage content
- ✓ Increase compatibility with pigment, filler, additive
- ✓ Well-controlled particle size distribution
- ✓ Smaller particle size of powder enhances pigment wettability
- ✓ No contamination with specific grinding production line
- ✓ Good flowability for good mixing with pigment, filler, additive

PE Wax

PVC

Color/Filler Masterbatch

Polyethylene homopolymer wax is synthetic wax derived from high-density polyethylene (HDPE), slurry process technology.

Grade	Product Form	Viscosity at 149 °C	Dropping Point	Penetration Index	Type
Unit		cPs	°C	d.mm	
Standard method		ASTM D3236	ASTM D3954	ASTM D1321	
NW1004P	Powder	≤ 40	113	> 3	Polyethylene Homopolymer Wax
NW1030F	Flake	100 - 300	116	> 3	Polyethylene Homopolymer Wax
NW1080F	Flake	301 - 800	116	> 3	Polyethylene Homopolymer Wax

Energy Saving Solution

X PURGE Purging Compound

X PURGE by GC is high efficiency ready-to-use purging compound which provides fast and effective color, material change and contaminant removal in the machine without disassemble. X PURGE by GC 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, sheet/profile extrusion machine.

International Standard Compliances

US FDA
Food and Drug Administration (FDA) Specification according to US FDA 21 code of Federal regulations part 177.1520 ©

RoHS
Restriction of Hazardous Substances:EU Directive 2011/65/EU

REACH

X PURGE GRADE	Recommend Temperatural and Material				Type of Machine		Feature
	140-240°C	200-240°C	240-290°C	290-340°C	Injection	Extrusion	
GX168	PVC,TPE, PE				✓	✓	General Grade
EX20T		POM, PP, PS, ABS, PC/ABS PA6, PBT, PA6 +GF		PA66+GF, LCP	✓	✓	High Heat Stability
PX319		PE, PP, PS, ABS, PC/ABS PA6, PBT, PA6 +GF			✓		Low smoke and Smell Superior Efficiency

Comply with US. FDA. RoHS and REACH regulation

GUIDELINE OF X PURGE FOR INJECTION MACHINE

Recommended quantity of X PURGE by GC according to the clamping force.

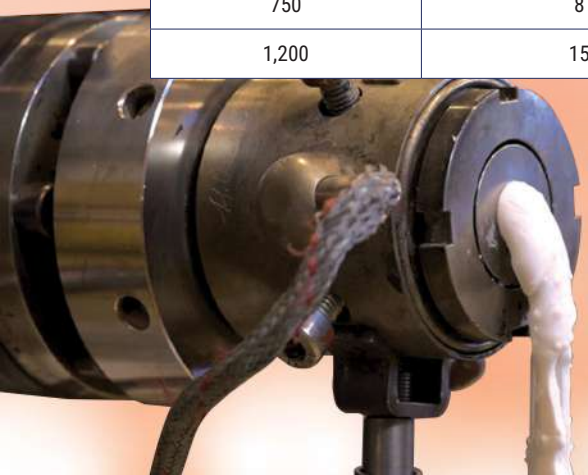
Clamping Force (Ton)	Recommended Quantity (kg)
100	1.5
200	3
550	6
750	8
1,200	15

GUIDELINE OF X PURGE FOR BLOW MOLDING, BLOWN FILM AND EXTRUSION MACHINE

Recommended quantity of X PURGE by GC according to screw diameter.

Screw Diameter (mm)	Recommended Quantity (kg)
60	10
80	14
100	20
120	25

Remark:
- Recommended quantity calculated base on single screw extruder with L/D ratio 24.
- Blending with resin at ratio 50:50 is recommended for the best cleaning
- The actual amount required may depending on equipment and material




GC
Chemistry For Better Living

Website

Contact Us

Technical Document for Polymer Products

LINE Official Account

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Date as of 30 June 2026