

# 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

ประหยัดเงิน  
เริ่มต้นที่นี่

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.

# Energy Saving Solution

## Floating Solar Pontoon

Solar floating pontoon also known as renewable energy is an excellent way to add value to existing resources especially in countries with high population density and competing uses for available land.

A solar panel will be installed on pontoon or flotation structure which has buoyancy enough to float on water and support a heavy load.

HDPE blow-molded product are widely used be as pontoon or floating structure with offer resistant to ultra violet radiation and corrosion. Nowadays, the HDPE floating structure has established itself as the most common solution, with several suppliers in the market and installed capacity worldwide of solar floating plants.

HDPE resin for this application should have a balance between strength and processability. Key features are including impact strength, tensile strength, flexural modulus, excellent Environment Stress Cracking Resistance (ESCR) and environmentally friendly.

## International Standard Compliances

	<b>RoHS</b> Restriction of Hazardous Substances:EU Directive 2011/65/EU		<b>TIS 816-2556*</b> (มอก.816) Polyethylene industrial standard		<b>Halal</b> Islamic law for food relate goods/product		<b>US FDA</b> Food and Drug Administration (FDA) Specification according to US FDA 21 code of Federal regulations part 177.1520 ©
	<b>EU FDA</b> Plastic Materials and Articles Intended to Come into contact with food		<b>JCII</b> Japan Chemical Innovation and Inspection Institute.				

\*This certification will be updated and revised by 2024 to TIS 816-2565

## X PURGE Purging Compound



X PURGE 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 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

	<b>RoHS</b> Restriction of Hazardous Substances:EU Directive 2011/65/EU		<b>US FDA</b> Food and Drug Administration (FDA) Specification according to US FDA 21 code of Federal regulations part 177.1520 ©		<b>REACH</b>
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**Floating  
Solar Pontoon**

# Floating Solar Pontoon

## Energy Saving Solution



Floating Solar  
Pontoon

InnoPlus: HDPE				
Properties	Test Method	Unit	Floating Solar Pontoon	
			HD7800B	HD8200B
MFR (190 °C, 2.16 kg)	ASTM D1238	g/10 min	0.04	0.03
MFR (190 °C, 21.6 kg)	ASTM D1238	g/10 min	6	4
Density	ASTM D1505	g/cm <sup>3</sup>	0.950	0.955
Melting Temperature	ASTM D3418	°C	130	134
Tensile Strength at Yield	ASTM D638	kg/cm <sup>2</sup>	300	300
Tensile Strength at Break	ASTM D638	kg/cm <sup>2</sup>	370	370
Elongation at Break	ASTM D638	%	850	850
Flexural Modulus	ASTM D790	kg/cm <sup>2</sup>	12,000	12,000
Notched Izod Impact Strength	ASTM D256	kg.cm/cm	72 (NB*)	64 (NB*)
Durometer Hardness	ASTM D2240	shore D	61	64
Vicat Softening Point	ASTM D1525	°C	125	128
ESCR; 25% Igepal, F <sub>50</sub>	ASTM D1693	Hours	>1,000	>1,000
<b>End Product</b>			Floating Solar Pontoon	
<b>Product Highlight</b>			Large Blow molding drum, Jerry can, Floating Solar Pontoon, Easy processability and High Impact Strength with Excellent ESCR Suitable for Heavy Duty Applications	

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

InnoPlus: HDPE				
Properties	Test Method	Unit	Floating Solar Pontoon	
			HD8225B (Experimental grade)	
<b>Physical Properties</b>				
Melt Flow Rate (190 °C, 2.16 kg)	ASTM D1238	g/10 min	0.03	
Melt Flow Rate (190 °C, 21.6 kg)	ASTM D1238	g/10 min	4	
Density	ASTM D1505	g/cm <sup>3</sup>	0.955	
Vicat softening point	ASTM D1525	°C	128	
Melting Temperature	ASTM D3418	°C	134	
<b>Mechanical Properties</b>				
Tensile Strength at Yield	ASTM D638	kg/cm <sup>2</sup>	300	
Tensile Strength at Break	ASTM D638	kg/cm <sup>2</sup>	370	
Elongation at Break	ASTM D638	%	850	
Stiffness	ASTM D747	kg/cm <sup>2</sup>	9,000	
Flexural Modulus	ASTM D790	kg/cm <sup>2</sup>	12,000	
Notched Izod Impact Strength	ASTM D256	kg.cm/cm	64 (NB)*	
Durometer Hardness	ASTM D2240	Shore D	64	
ESCR, F <sub>50</sub> (Condition B, 25% Igepal)	ASTM D1693	hrs	>1,000	
<b>UV Resistant</b>			Yes	
<b>End Product</b>			Floating Solar Pontoon	
<b>Product Highlight</b>			UV added for Floating Solar Pontoon, Large blow molding water tank, Excellent UV Dispersive Formulation Suitable with Excellent ESCR for Long-life Applications	

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.



# Purging Compound

## Energy Saving Solution

**PURGE** Solution Provider by GGC is high efficiency ready-to-use purging compound which provides fast and effective color, material change and contaminant removal in the machine without disassemble. **PURGE** Solution Provider by GGC 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.

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 <small>NEW</small>		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 **PURGE** Solution Provider by GGC according to the clamping force.

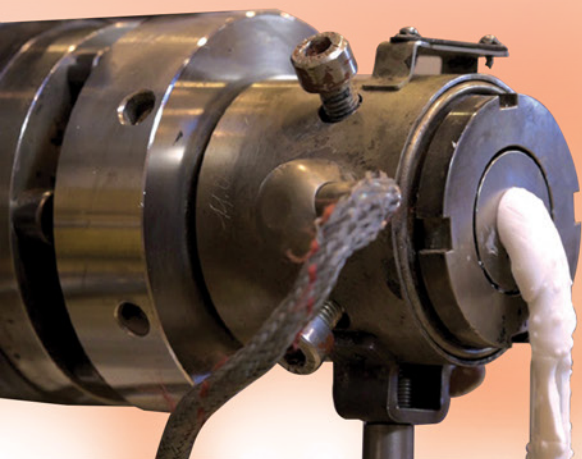
Clamping Force (Ton)	Recommended Quantity (kg)
100	1.5
200	3.0
550	6.0
750	15.0
1,200	65.0

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

Recommended quantity of **PURGE** Solution Provider by GGC according to screw diameter.

Screw Diameter (mm)	Recommended Quantity (kg)
65	11
90	17
100	20
130	30

Remark: Blending with resin at ratio 50:50 is recommended for the best cleaning  
The actual amount required may depending on equipment and material





Chemistry For Better Living









Website



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Technical Document  
for Polymer Products



LINE  
Official Account

#### **Disclaimer:**

To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however, we do not assume any liability what so ever for the accuracy and completeness of such information. We make no warranties which extend beyond the description contained herein. Nothing herein shall constitute any implied warranty of merchantability or fitness for a particular purpose. It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products. No liability can be accepted in respect of the use of our products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.

**Date as of December 2023**