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# Automotive Part Solutions

Updated as of June 2021



# Company Introduction



## PTT Global Chemical Public Company Limited



PTT Global Chemical Public Company Limited, or GC, Thailand's largest integrated petrochemical and refining business and a leading corporation in the Asia-Pacific region, both in size and product variety. GC has a combined olefins and aromatics capacity of 11.28 million tons/year. We committed to creating chemical innovations for a better future. We strongly support technological advances that meet today's lifestyles through products that span several sectors including automobiles, construction, medical products, electric and electronic equipment, agricultural products, environmentally friendly, and safe consumer products that benefit society and improve consumer satisfaction.

[www.pttgcgroup.com](http://www.pttgcgroup.com)

## HMC Polymers Company Limited



HMC Polymers Company Limited, or HMC, a subsidiary of PTT Global Chemical Company Limited (GC). The first polypropylene manufacturer in Thailand with the production facilities output over 810,000 metric tons per year and comprise two Spheripol lines and a latest technology Spherizone line from LyondellBasell. We produce a wide range of Moplen polypropylene grades including homopolymer, heterophasic and random copolymer resins, as well as specialty polypropylene resins.

[www.hmcpolymers.com](http://www.hmcpolymers.com)

## GC Polyols Company Limited



GC Polyols Company Limited, or GC Polyols, is a joint venture company of PTT Global Company Limited (GC), Sanyo Chemical Industries, Ltd. (SC) and Toyota Tsusho Corporation (TTC) with nameplate capacity of 180 KT/year of polyether polyols, polymer polyols and PO system.

With fully integrated company. Producing all feedstocks and raw materials required for Polyols production in one location ensures consistent quality.

### High Quality Product

Quality and consistency are key to producing our polyol grades. Sanyo technologies, Integrated manufacturing sites and R&D manufacturing process assurance system ensures a range of polyols with consistent high quality

[www.gcpolyols.com](http://www.gcpolyols.com)



# Company Introduction

## DynaChisso Thai Company Limited



DynaChisso Thai Co.,Ltd. ,or DYCT, is a joint venture company of Dynachem & Co from Taiwan PTT, Global Chemical Public Company Limited (GC) and Chisso Corporation from Japan with capacity of 25,000 MT/year of total plastic compound.

DYCT and has been located in the Amata Industrial Estate in ChonBuri province of Thailand. Hence, the name of DynaChisso derives from the joint force between Dynachem and Chisso Corporation.

[www.dynachisso.com](http://www.dynachisso.com)

## GC Marketing Solutions Company Limited



GC Marketing Solutions Company Limited, or GCM, a subsidiary of PTT Global Chemical Company Limited (GC). GCM is a major polymer sales and marketing company in Thailand. We offer variety of high-quality polymers such as high density polyethylene (HDPE), low density polyethylene (LDPE), linear low density polyethylene (LLDPE), polypropylene (PP), polystyrene (PS) and polyethylene terephthalate (PET). Our products are distributed throughout Thailand as well as being exported to more than 100 countries around the world with the product and services qualities are well accepted by our customers internationally.

[www.gcmgrp.com](http://www.gcmgrp.com)

## Solution Creation Company Limited



Solution Creation Company Limited, or SUN, is an innovative company to fulfill customers' expectation with value products & services. We offer a comprehensive range of superior quality products from GC's innovation center and leading suppliers worldwide with flexibly manufactures as well as providing supply chain services to both local and international markets. We provides customers with technical and application services through state-of-the-art facilities. We employ an experienced and dedicated staffs to assure the highest degree of customer satisfaction.

## GC Logistics Solutions Company Limited



GC Logistics Solutions Company Limited, or GCL, a subsidiary of PTT Global Chemical Public Company Limited (GC). GCL is full logistics service for chemical business and other products. The services is including silo, bagging & packing, warehouse management, transportation, freight forwarding, and customs clearance etc. We are committed to strengthen our client's competitive advantage though high quality services, advanced technology and competitive cost.







# Product Introduction

## Business Trends

Currently, there are about 30,000 parts in a vehicle, out of which 1/3 are made of plastic. In total, about 39 different types of basic plastics and polymers are used to make an automobile. More than 70% of the plastic used in automobiles comes from four polymers: polypropylene, polyurethane, polyamides and PVC. High-performance materials are more interesting due to recyclability process. The average plastic weight contained in a car will be up to 120kg, accounting for 10% by weight or 50% by volume of all components and parts. Weight reduction of vehicles can make more fuel efficiency and reduce greenhouse gas (GHG) emission in the cost-effective way.

## Value Chain



### Plastic Converter

#### Benefit to Converter (Production Perspective) :

The GC Material are well controlled in quality to provide an advantage of Processability, Product stability and Product consistency which benefit to better cycle time and lower set-up cost

### Brand

#### Benefit to Brand (Marketing Perspective) :

The GC Material are superior properties which suitable for weight reductions and thus lower energy consumption. the possibility to integrate additional features into polymer parts and components like sensors and electrical wiring provides great opportunities for the application of polymers in the cars of the future

### Consumer

#### Benefit to Consumer (User Experience Perspective) :

Our automotive parts resin has been developed for increasing efficiency and safety including create better capacity regarding weight, and energy saving.



# Solutions

## Product Quality

Because the quality and safety are major required for automotive, we are strongly committed to producing InnoPlus and Moplen automotive resin a safe, functional and legal product by obtaining globally recognized certification.

### InnoPlus

InnoPlus PE is manufactured under International ISO 9001 / ISO 14001 / OHSAS 18001 standard and strictly control for Good Manufacturing Practices (GMP) and Hazard Analysis and Critical Control Point (HACCP) standard.

InnoPlus PE also meet with international standard regulations in contact with food application such a U.S FDA 21 CFR 177.1520 and EC1935/2004, EU10/2011 and its amendments.

In particular country , InnoPlus PE comply with HALAL for Muslim country, JCI for Japan, GB 9685-16 for China and TIS 816-2556 for Thailand

### Moplen

Moplen PP for automotive is manufactured under international ISO 9001 and ISO14001 standards. Moplen PP for automotive also meets with international standard regulations in contact with food application such as U.S FDA 21 CFR 177.1520, EC1935/2004, EU10/2011 and its amendments, and another country's equivalent regulatory classification.

## Service Quality

We are also strongly committed to handle and automotive parts resin. We storage the resin in International Distribution Center (IDC) is one of the largest in the Southeast Asian region. It is over 140,000 sq.m. in size and has a capacity to handle the production and delivery of over 1 million tons of polymer per year with most advanced technology under top quality management.

We provide fully logistics with highly effective integrated Transportation Management System (TMS) spanning across transportation network design, routes selection, vehicle scheduling and freight management to ensure the best results.



## How to Handling and Storage

### Handling

Use good housekeeping for safe handling of the product. No smoking, open flames or source of ignition drinking or eating in handling and store area. Avoid spilling the product, as this might cause falls. Potential toxic/irritating fumes may be evolved from heated material. Provide appropriate ventilation for such processing conditions. Take precautionary measures against explosion risks, as all types of polymers may develop dust during transporting or grinding of granules.

### Storage

Store away from heat, ultraviolet and direct sunlight in a dry, cool and well-ventilated area. Take precautionary measures to prevent the formation of static electricity. Do not store together with oxidizing and self-igniting products.

# POLYPRO

## Product Quality

DynaChisso, as one of the direct technological successors of Chisso Corporation, a one-time polyolefin leader in Japan, positions ourselves as an expert in engineered thermoplastics compounding, focusing on polypropylene and other types of polymer.

Established in 2001, DynaChisso has been providing competitively high-quality plastics resins to local manufacturers in automotive, motorcycle, and home-appliances industries, gaining recognizable performance and winning trust among worldwide clients.

## Service Quality

DynaChisso expand from a Thailand's domestic supplier to a global enabler, serving our customers with the high-quality products by leveraging our superior manufacturing and R&D capabilities. We believe that the service we provide; the products we offer; the commitment we believe; and the aggressiveness we hold, will achieve win-win successes with our worldwide partners.

## How to Handling and Storage

### Precautions for safety handling:

Protective measures:

Put on appropriate personal protective equipment (See section VIII). Avoid contacting molten material with eyes, skin and clothing. Avoid breathing dust and process fumes. Ensure good ventilation at the workspace. Prevent dust accumulation. Pneumatic conveying of powder and pellets and other mechanical handling operations can generate large static electrical changes. Dust can be ignited by static electrical discharge. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipments before transferring material. Worker should handle the container with appropriate apparatus such as forklift and handlift. If worker feels stiff, should take a rest sufficiently.

### Advice on general occupational hygiene:

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Always wash hands after handling the product.

### Conditions for safe storage, including any incompatibilities:

#### Technical measures and storage conditions:

Electrically bond and ground equipment to reduce the potential for dust explosions. Store in dry, cool, dust-free and well ventilated area at temperature below 50 degrees Celcius. Protect from heat, direct sunlight and rain.

#### Packaging materials:

Store only in the original container. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakagc. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

#### Materials to avoid:

Store away from incompatible substances, fammable substances and oxidizing agents.

#### Specific end uses:

No further relevant information available.



# Genix

## Product Quality

At GC Polyols, we seek out the latest breakthroughs in products and processes to provide you with the most cutting-edge technology that best serves your needs.

Polyurethane Application Center resembles customers' production line to scale up and ensure consistent and highest quality of our products. We provide application testing for flexible and rigid foam at various scale.

## Service Quality

Our on-site technical support and, strong logistics and sales & marketing network, mean we are at the forefront of delivering long-term solutions to our customers, whilst maintaining the highest standards of innovative Polyols product.

## How to Handling and Storage

It is recommended that the product is kept in its original container and well-sealed after each usage. The container should be kept in a dry and well-ventilated place, avoiding flame and direct sunlight. The product should be stored at an appropriate ambient temperature, lower than 35oC, to avoid product quality deterioration.

Before handling this product, please refer to the Safety Data Sheet for recommended protective equipment, storage, detailed precautionary and hazards information.

# PlastMate

PlastMate	Test Method (ASTM)	C1803PJ-04	PP09310JBK	PP25027JGY	PP11001J
MFR at 230 OC, 2.16 kg (g/10min)	1133	7	9	25	11
Density (g/cm3)	1183	1.05	1.14	1.07	0.902
Flexural Modulus (MPa)	178	2,000	6,000	2,700	1,660
Notched Charpy Impact at 23 OC (KJ/m2)	179	7.5	8	-	3.2
HDT at 0.45 Mpa (C)	75	110	-	115	100
HDT at 1.82 Mpa (C)	75	-	141	-	-
Tensile strength (MPa)	527	23	90	23.5	36
Elongation at break (%)	527	>5	3	80	-
Material		PP TD20	PP GF30	PP TD25	PP
Specific Features		Weathering Resistance	Long term heat resistance	Weathering resistance(Interior)	Weathering resistance(Interior)
Business Segment (from 6 Segment)		Automotive	Automotive	Automotive	Automotive

PlastMate	Test Method (ASTM)	PP07605JBK
MFR at 230 OC, 2.16 kg (g/10min)	D1238	7.6
Density (g/cm3)	D792	0.9
Flexural Modulus (MPa)	D790	1,240
Notched Charpy Impact at 23 OC (KJ/m2)	D256	108
HDT at 0.45 Mpa (C)	D648	105.6
HDT at 1.82 Mpa (C)	D648	56.2
Tensile strength (MPa)	D638	25.7
Elongation at break (%)	D638	-
Material		PP
Specific Features		Weathering resistance (Exterior)
Business Segment (from 6 Segment)		Automotive

PlastMate	Test Method (ISO)	PC2006JBK (C1922GJ-01)	PC20011JSE
MFR at 260 OC, 5 kg (g/10min)	1133	17	20
Density (g/cm3)	1183	1.13	1.2
Flexural Modulus (MPa)	178	2,200	2,450
Notched Charpy Impact at 23 OC (KJ/m2)	179	50	60
HDT at 1.8 Mpa (C)	75	99	126
Tensile strength (MPa)	527	51	63
Elongation at break (%)	527	>50	>100
Material		PC/ABS	PC
Specific Features		Paintable grade	UV resistance
Business Segment (from 6 Segment)		Automotive and EE	Automotive



# POLYPRO

## PP Compound

Properties	Test	Condition	Unit	General	Talcum	Glass Fiber
	Method			一般	タルク	ガラス
物性	測定方法	測定条件	単位	EK0819	TW07	T150
Specific Gravity 比重	ASTM D792	Molding Piece	g/cm <sup>3</sup>	0.90	1.05	1.04
Melt Flow Rate 流動性	ASTM D1238	230 °C /2.16kgf	g/10min	8.5	9.0	13.4
Tensile Strength 引張強度	ASTM D638	50mm/min	MPa	25	29	86
Elongation at Break 引張破断点伸び	ASTM D638	50mm/min	%	200	50	11
Flexural Strength 曲げ強度	ASTM D790	1.3mm/min	MPa	30	50	121
Flexural Modulus 曲げ弾性率	ASTM D790	1.3mm/min	MPa	1,050	2,548	5,086
Izod Impact Strength アイゾット衝撃強度	ASTM D256	Notched 23°C	kgf cm/cm <sup>2</sup>	11.5	3.6	7.7
Rockwell Hardness ロックウェル硬さ	ASTM D785	Rockwell	R-SCALE	80	100	112
Heat Distortion Temperature 荷重たわみ温度	ASTM D648	4.6kgf/cm <sup>2</sup>	°C	100	136	157
Ash Content 灰分率	ASTM D2584		%	-	20% (Talc)	20% (GF)
Flammability 燃焼性	UL94		CLASS (mm)	-	-	-

# POLYPRO

## PP Compound

Properties	Test	Condition	Unit	General	General	General	Talcum	Talcum	Multi	Glass Fiber	Glass Fiber
	Method			一般	一般	一般	タルク	タルク	複合ファイラー	ガラス	ガラス
物性	測定方法	測定条件	単位	K5330R	T10	T011	TA1	GF03X	SHA02	T072	T205
Specific Gravity 比重	ASTM D792	Molding Piece	g/cm <sup>3</sup>	0.90	0.90	0.90	1.32	1.32	1.29	0.97	1.00
Melt Flow Rate 流動性	ASTM D1238	230 °C /2.16kgf	g/10min	35.0	20.0	48.2	12.5	12.5	22.0	5.8	1.5
Tensile Strength 引張強度	ASTM D638	50mm/min	MPa	30	28	26	35	30	27	67	72
Elongation at Break 引張破断点伸び	ASTM D638	50mm/min	%	60	100	32	7	3	4	11	13
Flexural Strength 曲げ強度	ASTM D790	1.3mm/min	MPa	40	40	37	55	55	45	87	93
Flexural Modulus 曲げ弾性率	ASTM D790	1.3mm/min	MPa	1,450	1,600	1,343	5,300	4,500	3,800	2,780	3,691
Izod Impact Strength アイゾット衝撃強度	ASTM D256	Notched 23°C	kgf cm/cm <sup>2</sup>	7.5	14.0	11.3	3.5	2.5	2.0	7.4	9.5
Rockwell Hardness ロックウェル硬さ	ASTM D785	Rockwell	R-SCALE	95	97	96	100	90	-	109	107
Heat Distortion Temperature 荷重たわみ温度	ASTM D648	4.6kgf/cm <sup>2</sup>	°C	120	120	111	140	130	135	155	151
Ash Content 灰分率	ASTM D2584		%	-	-	-	40% (Talc)	40% (Talc)	Talc (30%) Calcium(15%)	10% (GF)	15% (GF)
Flammability 燃焼性	UL94		CLASS (mm)	-	-	-	-	-	-	-	-

# POLYPRO

## PP Compound

Properties	Test	Condition	Unit	General	General	General	General	Talcum	Talcum	Talcum	Talcum
	Method			一般	一般	一般	一般	タルク	タルク	タルク	タルク
物性	測定方法	測定条件	単位	T186	T009	T240	T034	TW	TC	TA	THW11
Specific Gravity 比重	ASTM D792	Molding Piece	g/cm <sup>3</sup>	0.90	0.90	0.91	0.90	1.05	1.14	1.24	1.05
Melt Flow Rate 流動性	ASTM D1238	230 °C /2.16kgf	g/10min	6.3	1.2	2.7	2.0	9.0	8.5	6.5	30.0
Tensile Strength 引張強度	ASTM D638	50mm/min	MPa	28	28	44	28	29	30	29	28
Elongation at Break 引張破断点伸び	ASTM D638	50mm/min	%	229	240	25	210	50	33	24	25
Flexural Strength 曲げ強度	ASTM D790	1.3mm/min	MPa	37	32	67	35	50	50	50	40
Flexural Modulus 曲げ弾性率	ASTM D790	1.3mm/min	MPa	1,405	1,236	2,476	1,250	2,548	3,236	4,111	2,058
Izod Impact Strength アイゾット衝撃強度	ASTM D256	Notched 23°C	kgf cm/cm <sup>2</sup>	16.7	76.0	4.9	20.0	3.6	4.7	4.5	3.0
Rockwell Hardness ロックウェル硬さ	ASTM D785	Rockwell	R-SCALE	98	85	111	85	100	95	95	95
Heat Distortion Temperature 荷重たわみ温度	ASTM D648	4.6kgf/cm <sup>2</sup>	°C	108	115	142	105	136	135	130	125
Ash Content 灰分率	ASTM D2584		%	-	-	-	-	20% (Talc)	30% (Talc)	40% (Talc)	20% (Talc)
Flammability 燃焼性	UL94		CLASS (mm)	-	-	-	-	-	-	-	-

# POLYPRO

## PP Compound

Properties	Test	Condition	Unit	Mica	Mica	Talcum	Talcum	Talcum	Talcum	Talcum	Talcum
	Method			マイカ	マイカ	タルク	タルク	タルク	タルク	タルク	タルク
物性	測定方法	測定条件	単位	MAN-1	MA04N	CL0793	CL0795	CL0774	CL1133	T60MB	T214T
Specific Gravity 比重	ASTM D792	Molding Piece	g/cm <sup>3</sup>	1.23	1.23	1.05	1.02	1.05	1.05	1.53	1.05
Melt Flow Rate 流動性	ASTM D1238	230 °C /2.16kgf	g/10min	7.5	27.0	22.0	30.0	22.0	30.0	25.0	25.0
Tensile Strength 引張強度	ASTM D638	50mm/min	MPa	32	52	34	35	34	35	27	36
Elongation at Break 引張破断点伸び	ASTM D638	50mm/min	%	5	2	20	30	20	30	3	25
Flexural Strength 曲げ強度	ASTM D790	1.3mm/min	MPa	60	71	50	45	50	45	43	55
Flexural Modulus 曲げ弾性率	ASTM D790	1.3mm/min	MPa	5,243	6,470	2,700	2,400	2,700	2,400	6,500	2,878
Izod Impact Strength アイゾット衝撃強度	ASTM D256	Notched 23°C	kgf cm/cm <sup>2</sup>	3.6	2.6	3.0	2.5	3.0	2.5	1.5	4.5
Rockwell Hardness ロックウェル硬さ	ASTM D785	Rockwell	R-SCALE	100	104	100	90	100	90	73	97
Heat Distortion Temperature 荷重たわみ温度	ASTM D648	4.6kgf/cm <sup>2</sup>	°C	140	141	125	125	125	125	130	141
Ash Content 灰分率	ASTM D2584		%	40% (Mica)	40% (Mica)	21% (Talc)	15% (Talc)	20% (Talc)	20% (Talc)	60% (Talc)	20% (Talc)
Flammability 燃焼性	UL94		CLASS (mm)	-	-	-	-	-	-	-	-

# POLYPRO

## PP Compound

Properties	Test	Condition	Unit	Talcum	Glass Fiber	Glass Fiber	Glass Fiber	Multi	Wollastnite	Wollastnite
	Method			タルク	ガラス	ガラス	ガラス	複合フィラー	ワラストナイト	ワラストナイト
物性	測定方法	測定条件	単位	T067	T0001	GW224T	GCS30	R213ZT	KHWN-1	KB
Specific Gravity 比重	ASTM D792	Molding Piece	g/cm <sup>3</sup>	1.24	1.03	1.03	1.12	1.12	1.06	1.18
Melt Flow Rate 流動性	ASTM D1238	230 °C /2.16kgf	g/10min	20.0	0.4	5.9	2.5	2.5	5.0	7.0
Tensile Strength 引張強度	ASTM D638	50mm/min	MPa	29	65	88	80	80	38	29
Elongation at Break 引張破断点伸び	ASTM D638	50mm/min	%	5	9	12	8	8	40	40
Flexural Strength 曲げ強度	ASTM D790	1.3mm/min	MPa	50	95	114	120	120	-	-
Flexural Modulus 曲げ弾性率	ASTM D790	1.3mm/min	MPa	3,900	3,500	4,651	5,800	5,800	2,107	3,038
Izod Impact Strength アイゾット衝撃強度	ASTM D256	Notched 23°C	kgf cm/cm <sup>2</sup>	2.0	8.5	10.5	6.5	6.5	3.7	3.6
Rockwell Hardness ロックウェル硬さ	ASTM D785	Rockwell	R-SCALE	95	105	109	115	115	105	90
Heat Distortion Temperature 荷重たわみ温度	ASTM D648	4.6kgf/cm <sup>2</sup>	°C	130	150	159	145	145	130	130
Ash Content 灰分率	ASTM D2584		%	40% (Talc)	18% (GF)	20% (GF)	30% (GF)	30% (GF)	20% (Wollastnite)	35% (Wollastnite)
Flammability 燃焼性	UL94		CLASS (mm)	-	-	-	-	-	-	-



# POLYPRO

## PP Compound

Properties	Test	Condition	Unit	Talcum	Talcum	Long GF	Long GF	Long GF
	Method			タルク	タルク	ガラス長繊維	ガラス長繊維	ガラス長繊維
物性	測定方法	測定条件	単位	CT-125MT	CT-140MT	LGF15T	LGF30T	LGF40T
Specific Gravity 比重	ASTM D792	Molding Piece	g/cm <sup>3</sup>	1.10	1.32	0.99	1.13	1.22
Melt Flow Rate 流動性	ASTM D1238	230 °C /2.16kgf	g/10min	25.1	12.5	-	-	-
Tensile Strength 引張強度	ASTM D638	50mm/min	MPa	39	35	82	113	124
Elongation at Break 引張破断点伸び	ASTM D638	50mm/min	%	25	7	11	11	10
Flexural Strength 曲げ強度	ASTM D790	1.3mm/min	MPa	63	55	108	145	165
Flexural Modulus 曲げ弾性率	ASTM D790	1.3mm/min	MPa	3,501	5,300	3,718	7,398	8,156
Izod Impact Strength アイゾット衝撃強度	ASTM D256	Notched 23°C	kgf cm/cm <sup>2</sup>	5.1	3.5	9.4	14.5	24.6
Rockwell Hardness ロックウェル硬さ	ASTM D785	Rockwell	R-SCALE	99	100	107	105	105
Heat Distortion Temperature 荷重たわみ温度	ASTM D648	4.6kgf/cm <sup>2</sup>	°C	136	140	155	158	158
Ash Content 灰分率	ASTM D2584		%	25% (Talc)	40% (Talc)	15% (LGF)	30% (LGF)	40% (LGF)
Flammability 燃焼性	UL94		CLASS (mm)	-	-	-	-	-

## Genix

Properties	Test Method	Unit	Genix FA-703	Genix KC-900	Genix FA-921	Genix SP-750	Genix GA-5000	Genix PA-2000
Appearance	Internal Method	-	Colorless to pale yellow liquid	Opaque yellow liquid	Pale yellow transparent liquid	Transparent uniform liquid	Colorless to pale yellow liquid	Colorless to pale yellow liquid
Color (Hazen)	ASTM D5386	-	10	-	10	50	10	10
Hydroxyl value	ISO 14900:2001	-	33	22	28	490	33.0	56.0
Water Content	ASTM D4672	wt %	0.03	0.04	0.03	0.03	0.02	0.02
pH	Internal Method	-	6.5	7.5	6.5	6.3	6.3	6.1
Viscosity (at 25 °C)	ASTM D445	mPa * s	910	4,800	1,155	16,000	900	325

Genix Auto Premix\* = Genix Auto Premix products are customized grade. The properties are varied company by company

## Moplen

Properties	Test Method (ASTM)	Grade EP310D	Grade EP300H
PP type	-	Impact Copolymer	Impact Copolymer
Melt flow rate (230°C / 2.16 kg), dg/min	D1238	0.7	1.8
Density, g/cm <sup>3</sup>	D792B	0.9	0.9
Tensile strength at yield, MPa	D638	26	25
Elongation at yield, %	D638	13	9
Flexural modulus, MPa	D790A	1100	1150
Notched izod impact strength at 23°C, J/m	D256A	No Break	No Break
Deflection temperature, at 455 kPa, °C	D648	90	88