
Dppl
Way to engineering compounds..
Mfg.
Thermoplastic
Compounds
& Alloys
Trading
Toll
Compounding
www.dharapetrochemicals.com

About Us

Vision

Mark Global footprints

Mission

Excel with harmonious amalgamation of Man & Machine.

Dhara Petrochemicals has been established as an Engineering plastic trading company in India in the year 2000. Our traditional business model is based on the accomplishment of agency tie ups with Samsung, DIC and few well renowned Engineering Plastic Manufacturers from India & Abroad.

Looking at the cutting edge competition company has decided to plunge in to backward integration and have started manufacturing of engineering Blends and alloys with a vision to provide quality services that exceeds the expectation of esteemed customers.Company has tied up with Axel Polymers one of the oldest and most experienced compounder having state of art facilities and global approvals with annual capacity of 10000 MT's.

Company has three Major activities under One Roof.

* **Manufacturing of plastics engineering compounds.**
* **Trading of plastics Raw materials**
* **Toll compounding..**

As a social responsibility company has started new range of **"Utility Compounds"** where it not only protect the environment by using the reprocess plastics but at the same time it also produces given quality with economical price.

DPPL Milestones

- **2000** Established as a trading firm under the name of "Dhara Industries"
- **2004** Appointed as an agent of Cheil Industries Korea for their product range of ABS, SAN & Tr. ABS on all over India basis.
- **2009** Dhara Industries has been converted into Private Limited and named as Dhara Petrochemicals Private Limited.
- **2012** Appointed as an agent for DIC Corporation Japan for their PPS material on all over India Basis
- **2013** Started Manufacturing of Engineering Polymer Compounds under own Brand Names

AXEL Milestones

- **1992** Established "Axel Polymers Limited"
- **1994** Compounding plant was ready with first set to Manufacturing infrastructure
- **2004** Double the capacities upto 10,000 TPA with third Compounding Line
- **2009** Established SBU : Repellants-Manufacturing of treated textiles
- **2013** Merged with DPPL as a manufacturing arm for engineering polymer compounds & alloys.

Toll Compounding

Mfg. Thermoplastic Compounds & Alloys

Trading

Engineering Polymers

Speciality Polymers

Blends & Alloys

Our steps to Success

* Proactive manufacturing facilities
* Continuous improvement
* Consistent quality & punctuality
* Upgradation of knowledge
* Adherence to statutory compliances
* Overall Excellence

'Unbound passion, Unmatched skills and Uncompromising quality, steers axel from one success to another'

PRODUCTION FACILITIES

3 Twin Screw Compounding Lines
Line 1 W&P (GmbH)- ZSK 58 M 96
Line 2 STEER-Omega-60
Line 3 STEER-61

SUPPORTING EQUIPMENTS

*Pneumatic Suction feeders for Basic Raw Material
*Metal Separator for Ferrous and Non-ferrous Material
*Pre-Mixers - 4 nos. capacity of 100 - 350 Kgs. each
*Spiral and Pneumatic Conveying Systems
*Storage Silos - 5 nos. total capacity of 6000
*Double Cone Vacuum Dryer - with Nitrogen blanketing
*Nitrogen Plant capacity - 5 Nm3- purity level of 99.998 %
*Air Scrubber for processing drug-filled grades
*Overhead Crane / Hoist for loading & unloading
*Jumbo Pallet Stacker, Pallet Trucks for material movement
*Label Printing Machine

PRODUCTION EXPERTISE

We at AXEL have excelled in producing Grades with
*Glass Fiber
*Mica
*Mineral
*Flame Retardants – Halogenated & Non-Halogenated
*Impact Modifiers to suit special applications
*Highly Filled Grades with filler contents up to 60%
*UV Stabilizers to suit special applications
*PP + Active (Deltamethrin loaded chips)
*Combination of any of the above fillers

QUALITY ASSURANCE

Follow ISO 9001:2008 QMS and have SOPs
*Injection Moulding Machine with test specimen tool set
*MFI / MVR
*Impact
*UTM – Tensile & Flexural Strengths
*GWT – Glow wire tests
*Muffle furnace
*Moisture analysis
*Spectrophotometer
*Color-o-scan chamber
*Visual inspection chamber
*Vacuum oven
*[illegible] Tested as per UL 94 (External Lab)

ISO 9001 : 2008

Above all .... Skillful and Dedicated Manpower !

Under the banner of "DPPL" we offer a product portfolio of thermoplastic compounded grades...

Our USP is the commitment to deliver customized solution to suit application needs keeping cost under focus. These grades are made using various Polymers and reinforcements and speciality additives systems complying to international standards and certifications.

Individual grades are offered in an optional choice of customized pre-pigmented opaque colours. These are broadly categorized as :

- **Unfilled**
- **Reinforced**
- **Flame Retardant**
- **Alloys of miscible and immiscible polymers**

Product Range

Dpnor
mPPE Compounds

Dplon
Polycarbonate Compounds

Dplen
PBT Compounds

Dpnyl
Nylon Compounds

Dpron
Polypropylene Compounds

&
Utility Compounds

Trading

- *Polyphynlene Sulfide (PPS)
- *MS Resin
- *Thermoplastic Polyurethane
- *Transperant ABS
- *Polycarbonate (PC) – Clear
- *ABS Resin
- & Speciality Polymers

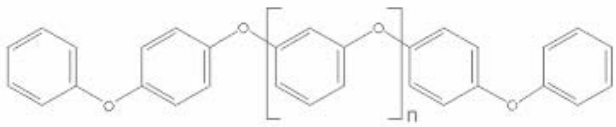
Dpnor™
mPPE Compounds

Modified Polyphenylene Ether Compounds

Introduction

Dpnor modified PPE is a strong engineering plastic with outstanding mechanical, thermal, and electrical properties. Low moisture absorption and low thermal expansion make Dpnor one of the most dimensionally stable thermoplastics available. Dpnor is widely used for water portable parts, electrical housings and structural components since it has excellent insulating properties, flame resistance, and dimensional stability over a wide range of service temperatures. Dpnor is often selected for fluid handling applications since it has low moisture absorption and excellent strength and stiffness. Dpnor is easy to fabricate, paint, and glue.

Chemical Structure of PPE



Features of Dpnor Compounds

- Excellent dimensional stability
- High strength, stiffness and toughness
- Easy to machine
- High dielectric strength
- Good impact resistance
- Low moisture absorption
- Chemical resistance

We have full range of Modified Polyphenylene Ether (mPPE) Compounds for use in injection moulding. It is compounded with Glass, FR & other chemical additives to give properties like excellent heat & water resistance. It is available in Natural , Black & Colours.

Technical Specifications

Properties	Standards	Unit	Unfilled Grades		Unfilled FR
			Dpnor-UF-M 010 (Natural)	Dpnor-UF-M 012 (Black)	Dpnor-UF-M9-010 (Natural)
Physical					
Density	ASTM D792	g/cc	1.04	1.04	1.08
Melt Flow Index @ 280°C /3.8 Kg.	ASTM D 1238	g/10 min	-	-	-
Water Absorption (24 hrs immersion at 23 +/- 1°C)	ASTM D 570	%	0.12	0.12	0.10
Shrinkage (In Flow Direction @3.2 mm Thickness)	ASTM D 955	%	0.65	0.65	0.65
Mechanical					
Tensile Strength @ Yield	ASTM D-638	Kg/cm²	450	450	490
Flexural Strength	ASTM D-790	Kg/cm²	690	690	800
Flexural Modulus	ASTM D-790	Kg/cm²	23300	23300	23500
Izod Impact Strength (Notched) @ 23°C	ASTM D-256	Kg.cm/cm	13	12	14
Hardness	ASTM D 2240	Shore D	78	78	78
Abrasion Resistance (CS-17,1000gms,1000 cycles)	ASTM D 1044	gms	-	-	-
Flammability					
Flammability Rating At 3.2 mm Thickness	UL 94	mm/mm	HB	HB	V0@0.8mm V0@1.6mm
Thermal					
Heat Deflection Temperature @ 18.5 Kg/cm²	ASTM D-648	°C	111	111	110

Grade Summary

Class	Grade	Filler Type	Typical Application
Unfilled General/ Flame Retardant	Dpnor UF-M-010 Dpnor UF-M-012 Dpnor UF-M9-010	Unfilled Natural Unfilled Black Unfilled FR V0 Natural	Heat Resistant Parts, Automobile Interiors, Solar Panels Pipe Fitting, Electrical Parts
Glassfilled General	Dpnor GF-M-210 Dpnor GF-M-212 Dpnor GF-M-310 Dpnor GF-M-312	20% Glass Filled Natural 20% Glass Filled Black 30% Glass Filled Natural 30% Glass Filled Black	Impeller and Pump Housing Printer Frame, Tray
Glassfilled/ Flame Retardant	Dpnor GF-M9-112 Dpnor GF-M9-212	10% FR Glass Filled Black 20% FR Glass Filled Black	OA Equipment, Impeller and Pump Housing
PPE/PA Blends	Dpnor- UF-MN-010 Dpnor- GF-MN-312	Unfilled Natural 30% Glass Filled Black	Wheel Cap, Door Handles, Fender For Automobile

Chemical Resistance Properties

Dpnor is resistant to many common solvents, fats and oils. The chemical resistance depends on the concentration, temperature and duration of contact

Chemicals	mPPE
30% Sulfuric acid	Excellent
10% Nitric acid	Excellent
10% Hydrochloric acid	Excellent
Sodium hydroxide	Excellent
Ammonium hydroxide	Excellent
Methanol	Excellent
Ethanol	Excellent
Acetone	Poor
Chloroform	Poor
Carbon tetrachloride	Poor
Heptane	Excellent
Toulene	Poor
Gasoline	Poor
Machine oil	Excellent

Glassfilled Grades				Glass Filled FR Grades		PPE/PA Blends	
Dpnor-GF-M 210 (Natural)	Dpnor-GF-M 212 (Black)	Dpnor-GF-M 310 (Natural)	Dpnor-GF-M 312 (Black)	Dpnor GF-M9-112 (Black)	Dpnor GF-M9-212 (Black)	Dpnor UF-MN-010 (Natural)	Dpnor GF-MN-312 (Black)
1.24 - 0.05 0.29	1.24 - 0.05 0.25	1.26 - 0.05 0.25	1.26 - 0.05 0.25	1.22 - 0.08 0.49	1.24 - 0.1 0.23	1.09 - - 1-1.2	1.3 - 0.91 0.32
1038 1233 76000 12 80 0.026	1100 1343 81000 13 83 0.026	1100 1343 81000 13 83 0.026	1100 1343 81000 11 83 0.026	780 910 54000 10 78 -	1050 1500 58500 10 75 -	600 900 60000 15 80 -	700 850 58000 10 80 -
HB	HB	HB	HB	V0	V0	HB	HB
130	132	132	132	115	125	140	180

Dplon™

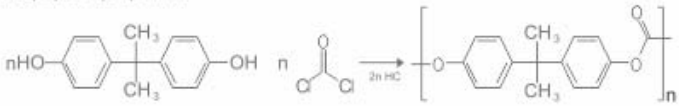
Polycarbonate Compounds

Polycarbonate Compounds

Introduction

Dplon Polycarbonate is an amorphous thermoplastic engineering polymer is having very good thermal, electrical, mechanical and optical properties polycarbonate is versatile material with attractive processing and physical properties.

Chemical Structure of Polycarbonate



Repeating Chemical structure unit of Polycarbonate made from Bisphenol –A. Polycarbonate is a durable material , unlike most thermoplastics it can resist plastic deformations without cracking or breaking.

Features of Dplon Compounds

- Durable
- High impact resistance
- Good electrical insulation
- Better flame retardant properties
- Better mechanical properties

We have full range of Dplon Polycarbonate compounds for use in injection moulding , polycarbonate is compounded with Glass, FR and other Additives to produce better mechanical properties it is available in Natural, Black & colours.

Technical Specifications

Properties	Standards	Unit	Unfilled Grades			
			Dplon UF-P-0012 (Tr. Smoke Grey)	Dplon UF-P-011 (B.White)	PC-UF-P-011 (Eco White)	PC-UF-P-012 (Black)
Physical						
Density	ASTM D792	g/cc	1.20	1.22	1.22	1.22
Melt Flow Index @ 280°C /3.8 Kg.)	ASTM D 1238	g/10 min	22	20	20	20
Shrinkage (In Flow Direction @3.2 mm Thickness)	ASTM D 955	%	0.8	0.85	0.85	0.85
Mechanical						
Tensile Strength @ Yield	ASTM D-638	Kg/cm^2	645	655	655	655
Flexural Strength	ASTM D-790	Kg/cm^2	780	735	735	735
Flexural Modulus	ASTM D-790	Kg/cm^2	25500	25500	25500	25500
Izod Impact Strength (Notched) @ 23°C	ASTM D-256	Kg.cm/cm	10.5	10	10.5	10
Hardness	ASTM D 785	R - Scale	120	120	120	120
Flammability						
Flammability Rating At 3.2 mm Thickness	UL 94	mm/mm	V2	V0	V0	V0
Glow Wire Test	IEC-60695-2-12	°C	-	-	-	-
Thermal						
Vicat Softening Point	ASTM D 1525	°C	138	-	-	-
Heat Deflection Temperature @18.5Kg/cm^2	ASTM D-648	°C	130	135	135	135
Electrical						
Dielectric strength @3.2mm Thickness (No breakdown upto)	ASTM D-149	KV/mm	20	20	20	20

Grade Summary

Class	Grade	Filler Type	Typical Application
Unfilled Natural/ Transparent Precoloured	Dplon UF-P-0012 Dplon UF-P-011 Dplon UF-P-011 Dplon UF-P-012	Unfilled Transparent Grey Unfilled B.White Unfilled Eco White Unfilled Black	For Wide Use in Electrical Wiring Devices & Accessories
Glassfilled General	Dplon GF-P-0710 Dpnor GF-P-110 Dplon GF-P-310	7% Glass Filled Natural 10% Glass Filled Natural 30% Glass Filled Black	Impeller and Pump Housing Printer Frame, Tray
Unfilled Flame Retardant	Dplon UF-P9-0010 Dplon GF-P9-016	Unfilled FR Clear Unfilled FR Grey	Electrical & Electronics Applications
Glassfilled Flame Retardant	Dplon- GF-P9-112	10% Glassfilled FR Black	Terminal Blocks & Energy Meter Housing
Alloys	Dplon- UF-PB-012	PC-PBT Unfilled Black	Structural Parts for Furniture Industry

Chemical Resistance Properties

Chemicals	Polycarbonate
Acids-concentrated	Fair
Acids-dilute	Good
Alcohols Alkalis Aromatic	Good
Hydrocarbons	Poor
Greases and Oils	Good
Halogens Ketones	Poor

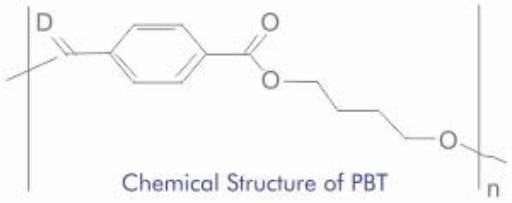
Glassfilled Grades			Unfilled Flame Retardant		Glass Filled FR Grades	Alloys (PC+PBT)
Dplon-GF-P-0710 (Natural)	Dplon-GF-P-110 (Natural)	Dplon-GF-P-310 (Natural)	Dplon UF-P9-0010 (FR Clear)	Dplon UF-P9-016 (Gun Grey)	Dplon GF-P9-112 (Black)	Dplon UF-PB-012 (Black)
1.22 11 0.32	1.25 11 0.31	1.42 10 0.31	1.17 22 0.8	1.22 20 0.85	1.22 - 0.31	1.22 35 0.62
580 900 28000 23 121	600 950 30000 22 121	1150 1500 62000 16 125	650 750 23000 10.5 120	660 750 25500 10.5 120	825 1065 40700 10.35 121	495 630 18500 65 125
HB -	HB -	HB -	V0 960	V0 960	V0 960	HB -
- 135	- 138	- 138	138 130	- 135	- 132	- 110
25	25	25	20	20	25	-

Dplen™
PBT Compounds

PBT Compounds

Introduction

Dplen Polybutylene Terephthalate is a semi crystalline Thermoplastic engineering polymer having application in Electrical & Electronics industry as an insulator. PBT is resistant to solvents & a type of Polyester shrinks very little during forming, is mechanically strong, heat resistant up to 150 or 200 degree with glass fiber reinforcement and can be treated with flame retardants to make it noncombustible.



Chemical Structure of PBT

Features of Dplen Compounds

- Better heat resistant
- Excellent moldability
- High resistance to fuels, oil, fats and many solvents
- Good chemical resistance
- Excellent electrical properties
- Excellent wear resistance

We have full range of PBT compounds for use in injection moulding. PBT is compounded with Glass, FR, Mineral and other additives to give excellent electrical properties & moldability. These are available in natural, White, Black & all RAL colour shades.

Technical Specifications

Properties	Standards	Unit	Unfilled Grades	
			Dplen-UF-B- 010 (Natural)	Dplen-UF-B8- 012 (UV-Black)
Physical				
Density	ASTM D792	g/cc	1.32	1.32
Melt Flow Index @ 280°C /3.8 Kg.)	ASTM D 1238	g/10 min	-	-
Shrinkage (In Flow Direction @3.2 mm Thickness)	ASTM D 955	%	-	-
Mechanical				
Tensile Strength @ Yield	ASTM D-638	Kg/cm^2	500-600	500-600
Flexural Strength	ASTM D-790	Kg/cm^2	800-900	800-900
Flexural Modulus	ASTM D-790	Kg/cm^2	23000	23000
Izod Impact Strength (Notched) @ 23°C	ASTM D-256	Kg.cm/cm	4.5	4.5
Flammability				
Flammability Rating At 3.2 mm Thickness	UL 94	mm/mm	HB	HB
Glow Wire Test	IEC-60695-2-12	°C	650	650
Electrical				
Volume Resistivity	IEC60093	ohm-m	15^{12}	15^{12}
Surface Resistivity	IEC60093	ohm		
Comparative Tracking Index (CTI)	IEC60112	V		
Dielectric strength, 2mm Thickness	D149	KV/mm	20	20
Thermal				
Heat Deflection Temperature @ 4.6 Kg/cm^2	ASTM D-648	°C	155	155

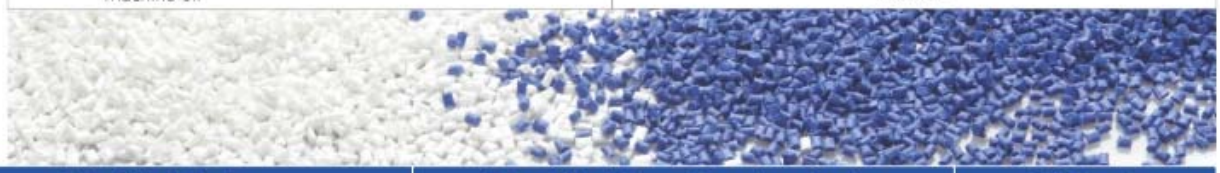
Grade Summary

Class	Grade	Filler Type	Typical Application
Unfilled/UV Stabilised	Dplen UF-B-010 Dplen UF-B8-012	Unfilled Natural Unfilled UV Black	Injection Moulding & Compounding Ro system Parts
Glassfilled General	Dplen GF-B-310 Dplen GF-B-312 Dplen GF-B-1516	30% Glass Filled Natural 30% Glass Filled Black 15% Glass Filled Grey	Electrical & Electronics Parts
Glassfilled / Flame Retardant	Dplen GF-B9-311 Dplen GF-B9-316 Dplen GF-B9-1511 Dplen GF-B9-1512	30% FR Glass Filled White 30% FR Glass Filled Grey 15% FR Glass Filled White 15% FR Glass Filled Black	Terminal Blocks & Electrical & Electronic Parts, OA Equipment,
CFL (Reinforced Flame Retardant)	Dplen GF-B9-211 Dplen GF-B9-311	20% FR Reinforced White 30% FR Reinforced White	CFL

Chemical Resistance Properties

Dplen is resistant to many common solvents, fats and oils the chemical resistance depends on the concentration , temperature and duration of contact.

Chemicals	PBT
30% Sulfuric acid	Excellent
10% Nitric acid	Excellent
10% Hydrochloric acid	Excellent
Sodium hydroxide	Poor
Ammonium hydroxide	Excellent
Methanol	Excellent
Ethanol	Excellent
Acetone	Excellent
Chloroform	Fair
Carbon tetrachloride	Excellent
Heptane	Excellent
Toulene	Excellent
Gasoline	Excellent
Machine oil	Excellent



Glassfilled Grades			Glass Filled Flame Retardant Grades				CFL Grades	
Dplen-GF-B-310 (Natural)	Dplen-GF-B-312 (Black)	Dplen-GF-B-1516 (Grey)	Dplen-GF-B9-311(White)	Dplen-GF-B9-316 (Grey)	Dplen-GF-B9-1511 (White)	Dplen-GF-B9-1512 (Black)	Dplen-GF-B9-211 (White) CFL	DplenGF-B9-311 (White) CFL
1.52 - 0.50-0.70	1.52 - 0.50-0.70	1.51 - 0.4-1.1	1.63 - 0.45	1.63 - 0.45	1.51 - 0.4-1.1	1.51 - 0.4-1.1	1.54 - -	1.65 - -
1050 1000 79000 8.5	1050 1000 79000 8.5	950 1400 55000 5	1440 1710 77000 7	1440 1710 77000 7	1000 1500 55000 5	1000 1500 55000 5	1020 1700 56000 5	1440 1720 77000 6
HB 650	HB 650	HB 650	V0 960	V0 960	V0 960	V0 960	V0@1.6mm 960	V0@1.6mm 960
- - - -	- - - -	- - - -	10^{12} 10^{14} 295 -	10^{12} 10^{14} 295 -	10^{12} 10^{14} 295 -	10^{12} 10^{14} 295 -	10^{12} 10^{14} 295 -	10^{12} 10^{14} 295 -
200	200	200	210	210	200	200	205	205

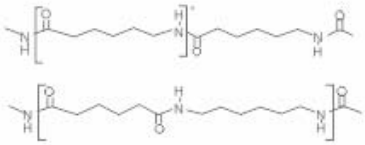
Dpnyl™
Nylon Compounds

Nylon 6 & 66 Compounds

Introduction

Dpnyl Nylon6 & Nylon66 is a Crystalline & Hygroscopic thermoplastic engineering Polymer which is widely accepted by the Automotive Industry due to its good mechanical properties.

Chemical Structure of Ny6 & Ny66



Nylon 6 (above) has a structure similar to Nylon 6,6 (below).

Features of Dpnyl Compounds

- High elongation
- Excellent abrasion resistance
- Good chemical resistance
- Easy online paintability
- Good electrical insulator
- Melts instead of burning

We have full range of Dpnyl Nylon 6 & 66 Compounds for use in injection moulding. It is compounded with Glass, FR & other chemical additives to enhance the mechanical properties. It is available in Natural , Black & Colours.

Technical Specifications

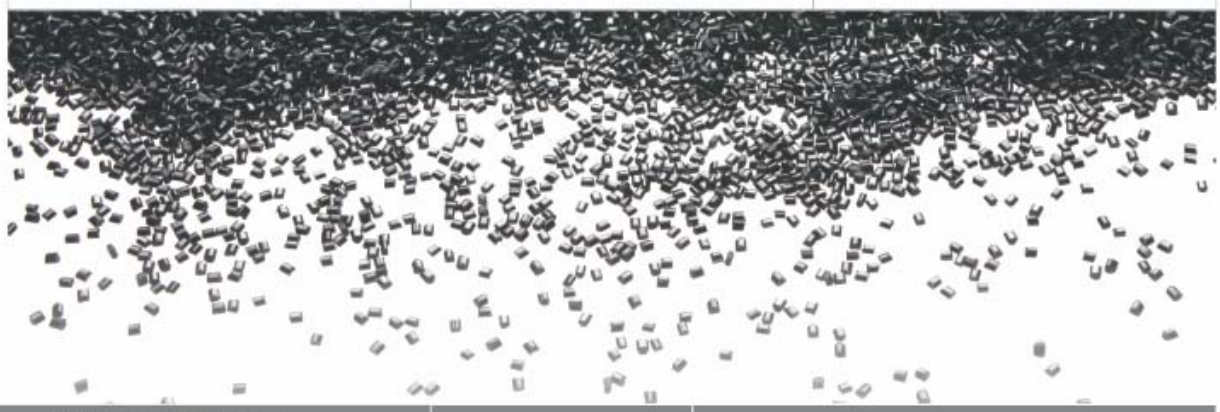
Properties	Standards	Unit	NY6 Unfilled Grades	NY 6 Glassfilled Grades		
			Dpnyl UF-N-012 (Black)	Dpnyl GF-N-1512 (Black)	Dpnyl GF-N-312 (Black)	Dpnyl GF-N-310 (Natural)
Physical						
Density	ASTM D792	g/cc	1.12	1.20	1.35	1.35
Melt Flow Index @ 280°C /3.8 Kg.	ASTM D 1238	g/10 min	-	-	-	-
Shrinkage (In Flow Direction @3.2 mm Thickness)	ASTM D 955	%	1.4	0.5	0.25	0.31
Mechanical						
Tensile Strength @ Yield	ASTM D-638	Kg/cm^2	750	1000	1400	1450
Flexural Strength	ASTM D-790	Kg/cm^2	900	1400	1500	1550
Flexural Modulus	ASTM D-790	Kg/cm^2	25000	47000	75000	77500
Izod Impact Strength (Notched) @ 23°C	ASTM D-256	Kg.cm/cm	6	6	10	12.5
Flammability						
Flammability Rating At 3.2 mm Thickness	UL 94	mm/mm	HB	HB	HB	HB
Glow Wire Test	IEC-60695-2-12	°C	-	-	-	-
Thermal						
Heat Deflection Temperature @ 18.5 Kg/cm^2	ASTM D-648	°C	155	185	200	200

Grade Summary

Class	Grade	Filler Type	Typical Application
NY 6 Unfilled	Dpnyl UF-N-012	Unfilled Black	For Wide Use
NY 6 Glassfilled General	Dpnyl GF-N-1512 Dpnyl GF-N-312 Dpnyl GF-N-310	15% Glassfilled Black 30% Glassfilled Black 30% Glassfilled Natural	Impeller and Pump Housing, Automotive Application, Industrial Components
NY 6 Glassfilled/ Flame Retardant	Dpnyl GF-N9-416 (HD Grey) Dpnyl GF-N9-310 (Natural)	40% Glassfilled FR V0 Grey 30% Glassfilled FR V0 Natural	E & E Application Railway Applications
NY 66 Unfilled	Dpnyl 66 UF-N-012	Unfilled Black	For Wide Use
NY 66 Glassfilled General	Dpnyl 66 GF-N-5012 HS Dpnyl 66 GF-N-3312 Dpnyl 66 GF-N-312 HS	50% Glassfilled Black 33% Glassfilled Black 30% Glassfilled Black Heat Stabilized	E & E Applications, Automotive Application, Industrial Components

Chemical Resistance Properties

Chemicals	Nylon 6	Nylon 66
Acids-concentrated	Poor	Poor
Acids-dilute	Poor	Poor
Alcohols Alkalis Aromatic	Good	Good
Hydrocarbons	Good-Fair	Good-Fair
Greases and Oils	Good	Good
Halogenated	Good-Fair	Good-Fair
Halogens Ketones	Good-Poor	Good



NY 6 Glass Filled Flame Retardant Grades		NY 66 Unfilled Grades	NY 66 Glassfilled Grades		
Dpnyl GF-N9-416 (HD Grey)	Dpnyl GF-N9-310 (Natural)	Dpnyl 66 UF-N-012 (Black)	Dpnyl 66 GF-N-5012 HS (Black)	Dpnyl 66 GF-N-3312 (Black)	Dpnyl 66 GF-N-312 HS (Black)
1.58 - 0.40-0.60	1.35 - 0.31	1.15 - 1.3	1.55 - 0.30	1.37 - 0.36	1.34 - 0.36
1400 1200 52000 7	1400 1500 77500 9	950 1250 35000 9	1850 2500 90000 15	1850 2850 90000 14	1900 2600 95000 14
V0 960	V0 960	HB -	HB -	HB -	HB -
195	200	205	250	250	250

Dpron™

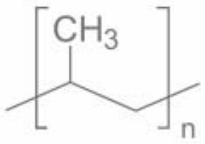
Polypropylene Compounds

Polypropylene Compounds

Introduction

Dpron Polypropylene Compounds has the advantages of excellent comprehensive properties, good chemical stability, good shape processing performance and relatively low cost. It is adapt to a wider range of application requirements through modifying, copolymerization, grafting, blending, reinforced filling, Glass filling etc.

Chemical Structure of Polypropylene



Features of Dpron Compounds

- Good fatigue resistance
- Good hinging properties
- Good chemical stability
- Reasonably economical

We have a full range of Polypropylene Compounds for the use in injection Moulding. It is compounded with various Minerals (Talc, calcite, Wollastonite & Mica), Chemically coupled & Uncoupled Glass and other Chemical additives to give properties like High Flow, High Gloss, High Modulus- High Impact, Flame Retardant, It is available in Natural , Black & Colours.

Product Description

- 10% - 40% Mineral filled compounds.
- 10% - 40% Glass reinforced compounds.
- Impact modified compounds for automobile applications.
- Mineral filled high gloss compounds for appliances.
- Flame retardant compounds.
- High tensile, chemically coupled glass compounds.
- PP - Long term heat ageing (LTHA) compounds.
- Special compound for energy meter enclosures.

Properties	Test Method	Unit	Mineral filled / High Tensile Grades		
			Dpron MF-R-210 (Natural)	Dpron MF-R-212 (Black)	Dpron MF-R-210 HT (Natural)
Physical					
Density	ASTM D792	g/cc	1.06	1.06	1.06
Melt Flow Index @ 280°C /3.8 Kg.)	ASTM D 1238	g/10 min	9	15	11
Shrinkage (In Flow Direction @3.2 mm Thickness)	ASTM D 955	%	-	-	-
Mechanical					
Tensile Strength @ Yield	ASTM D-638	Kg/cm²	325	390	525
Flexural Strength	ASTM D-790	Kg/cm²	400	440	600
Flexural Modulus	ASTM D-790	Kg/cm²	22500	25300	17500
Izod Impact Strength (Notched) @ 23°C	ASTM D-256	Kg.cm/cm	4.5	6.5	7
Flammability					
Flammability Rating At 3.2 mm Thickness	UL 94	mm/mm	HB	HB	HB
Thermal					
Heat Deflection Temperature @18.5Kg/cm²	ASTM D-648	°C	120	102	125

Grade Summary

Class	Grade	Filler Type	Typical Application
Mineral Filled/High Tensile	Dpron MF-R-210 Dpron MF-R-212 Dpron MF-R-210 HT Dpron MF-R-411 LTHA	20% Mineral filled Natural 20% Mineral filled Black 20% Mineral filled High Tensile Natural 40% Mineral filled Long Term Heat Aging White	Automotive parts, Appliances, Component Housings
Glass Mineral Filled	Dpron GFM-R-2511	25% Glass Mineral filled White	Electrical Housing & Accessories
Glass Filled/High Tensile chemically coupled	Dpron GF-R-110 HT Dpron GF-R-210 HT Dpron GF-R-310 HT	10% Glass Filled Natural High Tensile 20% Glass Filled Natural High Tensile 30% Glass Filled Natural High Tensile	Industrial Fans, Structural Parts, Automotive applications
Unfilled FR	DpronUF-R9-012	Unfilled FR Black	Electrical Components, Battery Cases

Chemical Resistance Properties

Chemicals	Polypropylene
Acids-concentrated	Good-Fair
Acids-dilute	Good-Fair
Alcohols Alkalis Aromatic	Good
Hydrocarbons	Good
Greases and Oils	Good-Fair
Halogenated	Good-Poor
Halogens Ketones	Good-Fair

	Glass Mineral Filled Grades	Glass Filled High Tensile Grades			Unfilled Flame Retardant
Dpron MF-R-411 LTHA (White)	Dpron-GFM-R-2511 (White)	Dpron-GF-R-110 HT (Natural)	Dpron-GF-R-210 (Natural)	Dpron-GF-R-310 HT (Natural)	Dpron-UF-R9-012 (Black)
1.20 12.5 -	1.1 14 1.05	1.1 0.8	1.05 - 0.68	1.12 - 0.55	1.05 12 -
275 450 23500 5	297 378 18500 8.73	700 850 45000 9	800 900 47500 10	950 1050 60000 11	250 275 12000 10
HB	HB	HB	HB	HB	V0
135	130	135	145	150	105

Effort to Preserve the Environment

Utility Compounds

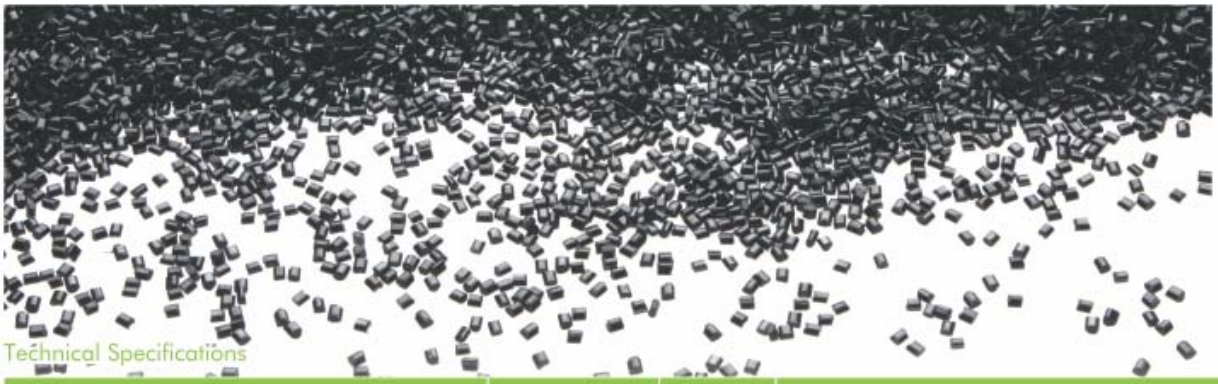
Introduction

Plastic Industry in India is growing at 14 to 15 % per annum including domestic as well as industrial polymers. It is boon as well as curse in terms of disposal, as in last five years India has came across many new high end engineering polymers at the same time awareness has also spread across the globe regarding global warming and plastics disposal in friendly manner with out harming the environment.

The interesting fact is till 1990's India was treated as Dump House for rest of the world but in last decade increase in local volume due to very big consumer market disposal has became an issue for country like India.

We at DPPL are taking a step forward to develop a compound which is environmental friendly creating new generation of plastics..... and that is.....

"UTILITY COMPOUNDS"



Technical Specifications

Properties	Standards	Unit	Polycarbonate			
			PC Unfilled B. White	PC Unfilled Black	PC Unfilled Grey	PC Unfilled Ivory
Physical						
Density	ASTM D792	g/cc	1.21	1.21	1.21	1.21
Melt Flow Index @ 280°C /3.8 Kg.)	ASTM D 1238	g/10 min	-	-	-	-
Shrinkage (In Flow Direction @3.2 mm Thickness)	ASTM D 955	%	0.64	0.64	0.64	0.64
Mechanical						
Tensile Strength @ Yield	ASTM D-638	Kg/cm^2	600	600	600	600
Flexural Strength	ASTM D-790	Kg/cm^2	700	650	680	700
Flexural Modulus	ASTM D-790	Kg/cm^2	23500	23500	23500	23500
Izod Impact Strength (Notched) @ 23°C	ASTM D-256	Kg.cm/cm	7	6.5	6.5	6.5
Flammability						
Flammability Rating At 3.2 mm Thickness	UL 94	mm/mm	HB	HB	HB	HB
Thermal						
Heat Deflection Temperature @18.5Kg/cm^2	ASTM D-648	°C	125	125	125	125

Grade Summary

Polymer	Grade	Filler Type	Typical Application
Polycarbonate Compounds	PC Unfilled B.White PC Unfilled Black PC Unfilled Grey PC Unfilled Ivory	Unfilled Pre colored	Electrical - Wiring Devices & Accessories
mPPE Compounds	30% GF Natural 30% GF Black 30% GF Graphite Grey	Glassfilled	Impellers & Bowls for Pump Industry
Nylon Compounds	Nylon6 Unfilled Black Nylon6 30% GF Black Nylon66 33% GF Black	Glassfilled / Unfilled	Automotive parts / Industrial Components
PBT Compounds	PBT 30% GF FR Black	Glassfilled Flame Retardant	MCB / Electrical Components

Processing Guidelines

Pre-drying - Predry the material at 100-120 ^{0}C for minimum 2 to 3 hours in hot air circulating oven

Injection Moulding Profile

Polymer	Feed zone to nozzel Temp. Profile °C	Injection Pressure Kg/Cm²	Screw Speed	Back Pressure	Mould Temp. °C
mPPE Utility Compounds	260 to 275	900 to 1500	Low	Low	60 to 90
PC Utility Compounds	260 to 270	900 to 1500	Low	Low	60 to 90
PBT Utility Compounds	230 to 240	800 to 1200	Low	Low	100 to 120
Nylon Utility Compounds	240 to 260	900 to 1400	Low	Low	60 to 90

Material Purging Instructions

Our Compounds	Purging Material	Special Instruction
mPPE Utility Compounds	HIPS	(After Moulding all & any Grades)
PBT Utility Compounds	LDPE/PP	(After Moulding GF & FR Grades)
PC Utility Compounds	SAN/LDPE	(After Moulding all & any Grades)
Nylon Utility Compounds	LDPE/PP	(After Moulding GF & FR Grades)

mPPE			Nylon			PBT
mPPE 30% GF Natural	mPPE 30% GF Black	mPPE 30% GF Graphite Grey	Nylon6 Unfilled Black	Nylon6 30% Glassfilled Black	Nylon66 33% Glassfilled Black	PBT 30% GF FR Black
1.26 - 0.25	1.26 - 0.25	1.26 - 0.25	1.14 - -	1.26 - 0.31	1.34 - 0.36	1.65 - 0.45
1150 1250 75000 9	1100 1200 74000 8.5	1100 1200 74000 8.5	700 800 55000 5	1100 1200 74000 8.5	1500 2050 81000 8.5	1350 1600 75000 6.5
HB	HB	HB	HB	HB	HB	V0
130	130	130	135	130	200	200

Trading Division Product Range

Products	Characteristics	Applications
DIC PPS		
PPS or Polyphenylene Sulphide, is a strong rigid material made up of alternating sulphur atoms and phenylene rings. It can be used as an alternative to metals and thermo-set resins (depending on the product application).	1. Heat Resistance, Long term service temperature, > 200°C 2. UL94 V-0 Flammability without flame retardant 3. Excellent Dimensional Stability 4. Low water absorption 5. Low Thermal Expansion 6. Superior Strength & Modulus 7. Chemical resistance equal to PTFE 8. 2 main types: Cross-linked & Linear PPS	1. Automotive 2. Cold & Hot water Applications 3. Electrical & Electronics 4. Other Applications
M S Resin		
The MS Resin is a transparent copolymerization primarily composed of methyl methacrylate (MMA) and styrene monomer (SM). The proportion of MS Resin is lower compared to that of Acrylic, and the cost is also cheaper.	1. Excellent transparency 2. Good optical properties 3. Low hygroscopic 4. Good weather resistance 5. Easy to Process 6. Low residual stress for molded products	1. Optical components 2. Toys 3. Lampshades 4. OA accessories 5. Food containers 6. Household appliances 7. Building materials
Thermoplastic Polyurethane		
Thermoplastic polyurethane (TPU) is an elastomer that is fully thermoplastic. Like all thermoplastic elastomers, TPU is elastic and melt-processable. Further, it can be processed on extrusion as well as injection, blow and compression molding equipment. It can be vacuum-formed or solution-coated and is well suited for a wide variety of fabrication methodologies. TPU can even be colored through a number of processes. But more so than any other thermoplastic elastomer, TPU can provide a considerable number of physical property combinations making it an extremely flexible material adaptable to dozens of uses.	1. High resilience 2. Good compression set 3. Resistance to impacts, abrasions, tears, weather, and hydrocarbons 4. TPU offers flexibility without the use of plasticizers as well as a broad range of hardness's and high elasticity 5. TPU bridges the material gap between rubbers and plastics	1. Automotive Lumbar Supports 2. Caster Wheels 3. Constant Velocity Boots (Automotive) 4. Flexible Tubing 5. Food Processing Equipment 6. Footwear—sport shoe soles 7. Sporting Goods 8. Swim Fins and Goggles 9. Wire and Cable Coatings
Transparent ABS		
Clear ABS has the same refractive index between Rubber and SAN phase. To match the Refractive Index of rubber phase, MMA monomer is added to matrix phase in the Clear ABS. Clear ABS is the Fusion Material with PMMA and ABS. (MMA Content : 50 ~ 70 %)	1. Fusion material of MMA & ABS. 2. Balanced physical property. 3. Reasonable cost. 4. Excellent productivity.	1. Dish Washer 2. Ball Pen 3. Tooling Box 4. Cosmetic Vessel 5. Meter Cover 6. Washing Machine Parts 7. Humidifier
Polycarbonate (PC)		
Polycarbonate is most commonly known as PC. It falls into the polyester family of plastics. PC resin is an amorphous engineering thermoplastic with high mechanical, optical, electrical & thermal properties. PC is available with UV stabilized and mold release grades. It is also available in FDA compliant, Flame Retardant & high flow grades.	1. High impact resistance 2. Outstanding dimensional stability 3. Crystal clarity with excellent toughness.	1. Automotive 2. Electronics & Electrical 3. Healthcare 4. Packing 5. Textile Bobbins 6. Lamp Reflectors 7. Disposable Food Containers 8. Electrical Components
ABS Resin		
ABS is thermoplastic resin made from three-dimensional monomer of Acrylonitrile, Butadiene, Styrene. This material is a terpolymer of acrylonitrile, butadiene and styrene. Usual compositions are about half styrene with the balance divided between butadiene and acrylonitrile. Considerable variation is, of course, possible resulting in many different grades of acrylonitrile butadiene styrene with a wide range of features and applications. In addition, many blends with other materials such as polyvinylchloride, polycarbonates and polysulfones have been developed. Acrylonitrile butadiene styrene materials can be processed by any of the standard thermoplastic processing methods	1. ABS possesses outstanding impact strength 2. High mechanical strength, which makes it so suitable for tough consumer products 3. ABS has good dimensional stability and electrical insulating properties	1. Used for electric/electronic parts 2. Automotive parts 3. Telephone bodies 4. Safety helmets 5. Piping, furniture, car components 6. TV casings, radios, control panels

Certificates

Certificate of Registration

The Governing Board of
Q.A. International Certification Limited
hereby grants to:

DHARA PETROCHEMICALS PVT. LTD.

Registration No. : QAIC / IN-1477 - A

(hereinafter called the Registered Company) the right to be listed in the Directory of Registered Companies in respect of the services listed below. These services shall be offered by the Registered Company at or from only the address given below in accordance with the quality management system in compliance with ISO 9001:2008.

Address to which this Certificate refers :

**Unit No.8, Mahaveer Industrial Estate, Ramchandra Lane Extn.,
Valani Village, Kachpada, Malad (West), Mumbai - 400 064, Maharashtra India**

Approved Scope to which this Certificate refers.

Importer and Distributor of Engineering Polymers
(Further clarification regarding the Scope of this Certificate and the applicability of ISO 9001:2008 requirements may be obtained by consulting the organization)

Signed for and on behalf of the Board

CHIEF EXECUTIVE — SCHEME MANAGER

Certificate Issue Date : *30th June 2014* - **Certificate Expiry Date** : *17th June 2015*
Date of Initial Registration : *18th June 2008* - **Re-assessment Date** : *17th June 2015*
This Certificate of Registration is granted subject to the Regulations approved by the Board.

QA INTERNATIONAL

Our Ref: HL/M2304045
Test Report: MAT/LAM-MINN & MINN

WRAS
Water Regulations Advisory Scheme

12th February 2014

M/S. Dhara Petrochemicals Pvt. Ltd.
C/O AFL 208, Mind,
Sankardo Sodi Road,
Lokdo Nava,
Dist. Vadodara 391 780,
India

WATER REGULATIONS ADVISORY SCHEME (WRAS)
MATERIAL APPROVAL

The material referred to in this letter is suitable for contact with wholesome water for domestic purposes having met the requirements of BS 6920:1:2000 "suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water".

The reference relates solely to its effect on the quality of the water with which it may come into contact and does not signify the approval of its mechanical or physical properties for any use.

POLYPHENYLENE ETHER (PPE) – MATERIAL ONLY **5253**

DPNO8 GF-M-330, GF-M-210 & UT-M-010. Beige coloured, Injection moulded PPE material. For use with water up to 85°C.

APPROVAL NUMBER: 1312528
APPROVAL HOLDER: M/S. DHARA PETROCHEMICALS PVT. LTD.

The Scheme reserves the right to review approval. This approval is valid between December 2013 and December 2018.

An entry, as above, will accordingly be included in the Water Fittings Directory on-line under the section headed, "Materials which have passed full tests of effect on water quality".

The Directory may be found at: www.wras.co.uk/directory

Yours faithfully

Jason Fennyd
Approvals & Enquiries Manager
Water Regulations Advisory Scheme

SGS

TEST REPORT

Report No. : GR/HL/4480011037 DATE : 30/04/2013

DHARA PETROCHEMICALS PVT. LTD.
OFF AMAHAVIR IND ESTATE,RAMCHANDRA LANE VALANI VILLAGE,KACHPADA,MALAD(W)
MUMBAI-400064
INDIA
A/C SGS INDIA PRIVATE LTD. (Ahmedabad)
CONTACT PERSON : SARWAR SINGH

THE FOLLOWING SAMPLE(S) WAS/WERE SUBMITTED AND IDENTIFIED BY/ON BEHALF OF THE CUSTOMER AS :

SAMPLE DESCRIPTION PPS+30% REINFORCED AND DPNO8 GF-M-310
COUNTRY OF ORIGIN INDIA
SAMPLE RECD ON 22/04/2013 **TESTING PERIOD** : 22/04/2013 - 30/04/2013
TEST(S) REQUESTED RoHS TEST FOR Pb, Cd, Hg, Cr6+, PBB & PBDE
Conclusion Based on the performed tests on submitted samples & as per client's requirements, the results Of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II,amending 2002/95/EC

Test result:
ID for sample : 4480011037
Description for sample : PPE+30% REINFORCED AND DPNO8 GF-M-310

Test Item(s):	Unit	Test Method	Results	MDL	Limit
Cadmium (Cd)	mg/kg	With reference to IEC 62321:2008, and performed by ICP-OES	n.d.	5	100
Lead (Pb)	mg/kg	With reference to IEC 62321:2008, and performed by ICP-OES	n.d.	5	1000
Mercury (Hg)	mg/kg	With reference to IEC 62321:2008, and performed by ICP-OES	n.d.	5	1000
Hexavalent Chromium (CrVI)	mg/kg	With reference to IEC 62321:2008,and performed by UV-Spectrophotometer	n.d.	2	1000
Sum of PBBs	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	**n.d.**	-	1000
Monobromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	n.d.	50	-
Dibromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	n.d.	50	-
Tribromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	n.d.	50	-
Tetrabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	n.d.	50	-
Hexabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	n.d.	50	-
Pentabromobiphenyl	mg/kg	With reference to IEC	n.d.	50	-

Page 1 of 6

"This is a computer generated report does not require signature"

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents at http://www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. This document cannot be reproduced except in full, without prior approval of the Company.

SGS

TEST REPORT

Report No. : GR/HL/4480011038 DATE : 30/04/2013

DHARA PETROCHEMICALS PVT. LTD.
OFF AMAHAVIR IND ESTATE,RAMCHANDRA LANE VALANI VILLAGE,KACHPADA,MALAD(W)
MUMBAI-400064
INDIA
A/C SGS INDIA PRIVATE LTD. (Ahmedabad)
CONTACT PERSON : SARWAR SINGH

THE FOLLOWING SAMPLE(S) WAS/WERE SUBMITTED AND IDENTIFIED BY/ON BEHALF OF THE CUSTOMER AS :

SAMPLE DESCRIPTION PPS UNFILLED DPNO8 GF-M-010
COUNTRY OF ORIGIN INDIA
SAMPLE RECD ON 22/04/2013 **TESTING PERIOD** : 22/04/2013 - 30/04/2013
TEST(S) REQUESTED RoHS TEST FOR Pb, Cd, Hg, Cr6+, PBB & PBDE
Conclusion Based on the performed tests on submitted samples & as per client's requirements, the results Of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II,amending 2002/95/EC

Test result:
ID for sample : 4480011038
Description for sample : PPE UNFILLED DPNO8 GF-M-010

Test Item(s):	Unit	Test Method	Results	MDL	Limit
Cadmium/Cd	mg/kg	With reference to IEC 62321:2008, and performed by ICP-OES	n.d.	5	100
Lead (Pb)	mg/kg	With reference to IEC 62321:2008, and performed by ICP-OES	n.d.	5	1000
Mercury (Hg)	mg/kg	With reference to IEC 62321:2008, and performed by ICP-OES	n.d.	5	1000
Hexavalent Chromium (CrVI)	mg/kg	With reference to IEC 62321:2008,and performed by UV-Spectrophotometer	n.d.	2	1000
Sum of PBBs	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	**n.d.**	-	1000
Monobromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	n.d.	50	-
Dibromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	n.d.	50	-
Tribromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	n.d.	50	-
Tetrabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	n.d.	50	-
Hexabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	n.d.	50	-
Pentabromobiphenyl	mg/kg	With reference to IEC	n.d.	50	-

Page 1 of 6

"This is a computer generated report does not require signature"

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents at http://www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. This document cannot be reproduced except in full, without prior approval of the Company.

Corporate Office:
Dhara Petrochemicals Pvt. Ltd.
8, Mahaveer Indl. Estate,Ramchandra Lane Extn.,
Kachpada, Malad (W),Mumbai- 400064.
Tel : +91-22-2844 5671/72/ 6699 2617/18.
Email: sales@dharaindustries.com

Manufacturing Plant
Axel Polymers Limited
309, Moxi, Sankarda-Savli Road, Tal. Savli
Dist Vadodara 391 780, Gujarat. India
Telefax+91-2667-244395 / 244438 / 244396