



# GHAED BASIR

Petrochemical Products Co.



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### The Company at a Glance

Ghaed Basir Petrochemical Products Company (GBPC) was established as the first ABS producer in Iran under Kumho technology in the private sector in 1998. ABS and SAN plant started up in 2003 and commercial production with 22000 MT SAN and 35000 MT ABS started in 2004.

### GBPC Today

GBPC produces ABS in more than 70 grades (Injection, Extrusion, High Heat, Flame Retardant, and anti-static) as natural and pre-colored grades. SAN is also produced in 2 grades injection and extrusion. To achieve desired physical, mechanical, and heat properties, we produce ABS and SAN blends such as ABS/PC, ABS/PA; etc. To satisfy all the company beneficiaries, including customers, employees, and shareholders, GBPC combines economic success, social, responsibility, and environmental protection.

According to this policy, we are pleased to have achieved Quality Management Systems for Petrochemical Companies ISO 29001:2020, Environmental Management Systems ISO 14001:2015, Health and Safety Management System ISO 45001:2018, competence management and people development system ISO 10015:1999, and energy management systems ISO 50001:2018.

Also, by relying on the expertise and technical knowledge of its employees, it has succeeded in increasing the nominal capacity from 35,000 tons to 42,000 tons per year and has received the license to operate with the new capacity from the Ministry of Industry, Mining and Trade.



### SAN Resin:

Styrene Acrylonitrile Copolymer provides high chemical resistance and has good processability and mechanical properties as well. It is suitable for producing electric/electronic appliances, office equipment, home appliances, automobile parts, electric fans, disposable lighters, and a variety of containers

### ABS Resin:

Acrylonitrile Butadiene Styrene Copolymer is produced in 70 grades including general purpose, special grades, heat resistant, flame retardant, and antistatic grades in both forms natural and pre-colored.

ABS resins have satisfactory properties such as impact and chemical resistance, good processability, and thermal properties. They are easily injection molded, extruded, and thermoformed. Final products have excellent dimensional stability and a glossy surface. They can also have excellent secondary processes such as electro-plating, painting, and so on. It is suitable for producing home appliances, automobile parts, electric industry parts, medical equipment; etc.

### ABS and SAN Blends:

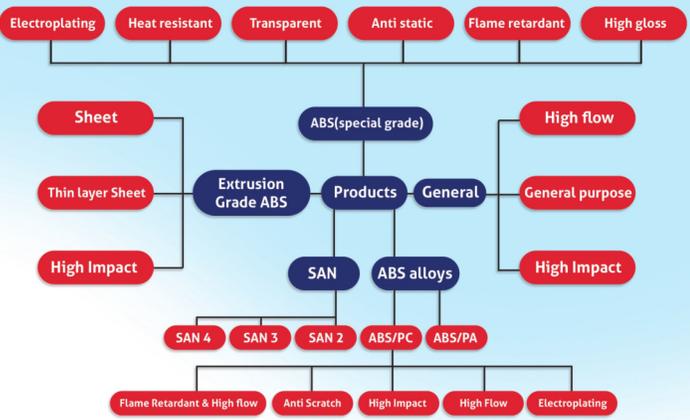
To improve mechanical and physical properties such as impact strength and heat resistance for different applications, especially automotive, we produce ABS and SAN blends such as ABS/PC, ABS/PA; etc. Also, by trusting our R & D team, we can customize our productions according to customers' needs.





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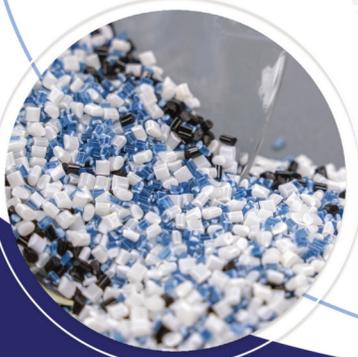


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Properties	Test Method (ASTM)	Test Condition	Unit	SAN								Injection ABS				Extrusion ABS			Special Grades								
				General Grade	General Purpose	High Impact	High Flow	Sheet	Thin layer sheet	High Impact	Electroplating	High Gloss	Heat resistant	Flame Retardant	Antistatic	Transparent											
				SAN 2	SAN 3	SAN 4	50	70	90	40	80	75	75T	90	10	HA 265	HW	HC-505	GH500	HFA-70	HFA-7B	HFA-7S	50 V	GAC 550-TR	50TR		
<b>PHYSICAL AND RHEOLOGICAL PROPERTIES</b>																											
Specific Gravity	D-792	23°C	g/cm <sup>3</sup>	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.05	1.16	1.16	1.16	1.04	1.06	1.04		
Melt Flow Index	D-1238	230°C/3.0 kg 220°C/5 kg 220°C/10 kg	g/10 min	2.1	1.3	5	3	1.5	2.7	2	5	0.5	0.5	0.8	2.7	2.7	2.7	0.7	2.8	5	1.5	2.9	2.2	2.6			
Mold Shrinkage	D-955	-	%	0.2-0.6	0.2-0.6	0.2-0.6	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.3-0.6	0.4-0.7		
Water Absorption	D-570	24-hour immersion in water	%	0.3	0.3	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>MECHANICAL PROPERTIES</b>																											
Izod Impact	D-256	6.4 mm Notched	KJ/m <sup>2</sup>	1	1.5	2	20	25	23	28	18	27	23	33	23	17	10	10	16	15	18	16	20	14	20		
Tensile Strength	D-638	23°C, 50 mm/min	kg/cm <sup>2</sup>	550	700	750	430	420	420	350	440	410	470	380	410	430	460	550	420	420	400	470	430	510	430		
Tensile Elongation	D-638	23°C, 50 mm/min	%	-	-	-	14	15	17	20	15	18	10	20	20	8	20	14	15	15	12	15	22	15			
Flexural Strength	D-790	23°C, 2.8 mm/min	kg/cm <sup>2</sup>	750	900	1000	620	620	600	450	640	640	670	550	590	610	660	810	700	620	600	620	620	750	620		
Flexural Modulus	D-790	23°C, 2.8 mm/min	kg/cm <sup>2</sup>	30000	30500	31000	19500	19500	19500	16000	20000	19000	20000	20000	18000	18000	21000	23000	19000	18000	17500	20000	19000	18000	19000		
Rockwell Hardness	D-785	-	R-scale	84	85	86	108	110	108	98	110	107	108	95	104	110	112	115	108	112	110	110	109	120	109		
<b>THERMAL PROPERTIES</b>																											
Heat Deflection Temperature	D-648	0.45MPa	°C	98	99	100	88	88	88	84	87	88	85	82	86	91	94	95	105	84	82	84	88	95	88		
Vicat Softening Temperature	D-1525	10N	°C	103	105	105	95	100	100	92	95	96	95	92	94	96	99	100	120	94	92	92	95	102	96		
<b>FLAMMABILITY CHARACTERISTIC</b>																											
Flammability	UL94	1/8 inch (3.2 mm)		HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	V-0	V-0	V-0	HB	HB	HB	HB	HB
<b>OPTICAL CHARACTERISTIC</b>																											
Glossness	D-523	60°	Glossness	-	-	-	88	88	88	86	90	88	90	86	88	88	90	94	88	88	86	86	88	92	92		
Coloring	D-6290	C/2	Hunter	Transparent/Colorless	Transparent/Colorless	Transparent/Colorless	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color	Transparent	Transparent	Customize color	Transparent



Properties	Test Method (ASTM)	Test Condition	Unit	ABS/PC							ABS/PA
				Anti-scratch	High Impact Strength	Super High Impact Strength	High Flow	Flame Retardant	High flow& Flame retardant	Electroplating	
				GAC 265 HA	GAC 265 HFR	GAC 250	GAC 265	GAC 250 R	GAC 220	GAC 265 FR	HI 390
<b>PHYSICAL AND RHEOLOGICAL PROPERTIES</b>											
Specific Gravity	D-792	23°C	-	1.08	1.05	1.08	1.08	1.08	1.08	1.12	1.07
Melt Flow Index	D-1238	230°C/3.0 kg 200°C/5 kg 220°C/10 kg	g/10 min	-	-	-	-	-	-	-	-
Mold Shrinkage	D-955	-	%	0.2-0.6	0.2-0.8	0.5-0.7	0.5-0.7	0.5-0.7	0.3-0.6	0.5-0.7	0.5-0.7
<b>MECHANICAL PROPERTIES</b>											
Izod Impact	D-256	6.4 mm Notched	KJ/m <sup>2</sup>	35	20	40	48	32	10	35	52
Tensile Strength	D-638	23°C, 50 mm/min	kg/cm <sup>2</sup>	610	600	500	580	500	460	520	420
Tensile Elongation	D-638	23°C, 50 mm/min	%	80	20	45	50	50	20	40	60
Flexural Strength	D-790	23°C, 2.8 mm/min	kg/cm <sup>2</sup>	880	780	750	800	700	650	750	600
Flexural Modulus	D-790	23°C, 2.8 mm/min	kg/cm <sup>2</sup>	21000	21000	18500	19000	19000	19000	19000	15000
Rockwell Hardness	D-785	R-scale	Rockwell	120	112	112	115	112	105	115	115
<b>THERMAL PROPERTIES</b>											
Heat Deflection Temp	D-648	0.45 MPa	°C	120	110	120	125	107	100	115	115
Vicat Softening Temp	D-1525	10N	°C	125	105	110	112	105	105	120	120
<b>FLAME CHARACTERISTIC</b>											
Flammability	UL94	1/8 inch (3.2mm)		HB	V-2	V-0	HB	V-2	HB	HB	V-0
<b>OPTICAL CHARACTERISTIC</b>											
Glossness	D-523	60°	Glossness	90	88	90	90	90	90	90	90
Coloring	D-6290	C/2	Hunter	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color	Customize color

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Property	Test Method (ASTM)	Test Condition	Unit	SAN		
				General Grade		
				SAN 2	SAN 3	SAN 4
Izod Impact	D - 256	6.4 mm, Notched	KJ/m <sup>2</sup>	1	1.5	2
Melt Flow Index	D - 1238	220°C, 10 Kg	gr/10 min	62	31	12
Rockwell Hardness	D - 785	R - Scale	Rockwell	84	85	86
Heat Deflection Temp	D - 648	0.45 Mpa	°C	98	99	100
Vicat Softening Temp	D - 1525	10 N	°C	103	105	105
Tensile Strength	D - 638	23°C, 50 mm/min	Kg/cm <sup>2</sup>	550	700	750
Flexural Strength	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	750	900	1000
Flexural Modulus	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	30000	30500	31000
Water Absorbion	D - 570	24 hr. Immersion in water	%	0.3	0.3	0.3
Specific Gravity	D - 792	23°C	g/cm <sup>3</sup>	1.04	1.04	1.04
Molding Shrinkage	D - 955	-	%	0.2 - 0.6	0.2 - 0.6	0.2 - 0.6
Flammability	UL 94	¼ inch (3.2 mm)	-	HB	HB	HB

Note 1) These are typical property values, not specifications.  
 Note 2) In pre-colored products, the values could slightly differ from table values.  
 Note 3) Values are measured at 23°C and in relative humidity (RH) of 50% on injection molded specimens of natural grade compliant with ASTM standards.

Grade	Characteristic	Application
SAN - 2	High Flow High Transparency	Electrical Parts, Refrigerator Parts, Refrigerator crisper, home appliances
SAN - 3	Moderate Flow, Chemical Resistance, Good Strength	Electrical Parts, Home appliances, stationary
SAN - 4	Chemical Resistance, High Strength, Heat resistance	Disposable lighters, transparent sheets, office supplies

**TYPICAL SAN PROCESSING CONDITIONS**  
 DRYING: It is recommended that GBPC SAN Resins be dried at (70-75°C) for 3 hours.  
 The following molding conditions are recommended starting points for GBPC ABS Resin. A moisture level of ≤0.1% should be reached before injection molding the resin.  
 Some modifications may be required depending on the specific molding equipment and part configuration.

**INJECTION MOLDING**

Melt Temp (°C)	Nozzle Temp (°C)	Front Temp (°C)	Center Temp (°C)	Center Temp (°C)	Rear Temp (°C)
230	215 - 225	210 - 220	210 - 220	200 - 210	190 - 200
Filling Speed			Mold Temp (°C)		
Slow-Med			60 - 80		



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Property	Test Method (ASTM)	Test Condition	Unit	ABS				
				General Purpose			High Impact Strength	High flow
				ABS-50	ABS-70	ABS GP 45-SW	ABS-40	ABS-80
Izod Impact	D - 256	6.4 mm, Notched	KJ/m <sup>2</sup>	20	25	23	28	18
Melt Flow Index	D - 1238	220°C, 10 Kg	gr/10 min	33	17	29	22	49
Rockwell Hardness	D - 785	R - scale	Rockwell	108	110	108	98	110
Heat Deflection Temp	D - 648	0.45 MPa	°C	88	88	88	84	87
Vicat Softening Temp	D - 1525	10 N	°C	95	100	100	92	95
Tensile Strength	D - 638	23°C, 50 mm/min	Kg/cm <sup>2</sup>	430	420	420	350	440
Tensile Elongation	D - 638	23°C, 50 mm/min	%	14	15	17	20	15
Flexural Strength	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	620	620	600	450	640
Flexural Modulus	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	19500	19500	19500	16000	20000
Specific Gravity	D - 792	23°C	g/cm <sup>3</sup>	1.04	1.04	1.04	1.04	1.04
Mold Shrinkage	D - 955	-	%	0.4 - 0.7	0.4 - 0.7	0.4 - 0.7	0.4 - 0.7	0.4 - 0.7
Flammability	UL 94	¼ inch (3.2 mm)	-	HB	HB	HB	HB	HB

Note 1) These are typical property values, not specifications.  
 Note 2) In pre-colored products, the values could slightly differ from table values.  
 Note 3) Values are measured at 23°C and in relative humidity (RH) of 50% on injection molded specimens of natural grade compliant with ASTM standards

Group	Grade	Characteristic	Application
High Impact Strength	ABS-40	High Impact resistance	Home appliances, Helmet, Automobile parts, Shoe heel
High flow	ABS-80	Medium impact resistance, High Flow	Office equipment, home appliances, Automobile parts
General	ABS-50	Medium impact resistance, Medium Flow	
	ABS-70	General purpose	Automobile parts, injection molded parts, profiles extrusion
	ABS GP 45-SW	Super white, common grade	Home appliances, Office equipment, Automobile parts

**TYPICAL ABS PROCESSING CONDITIONS**  
 DRYING: It is recommended that GBPC ABS Resins be dried at (80-85°C) for 3 hours.  
 The following molding conditions are recommended starting points for GBPC ABS Resin. A moisture level of ≤0.1% should be reached before injection molding the resin.  
 Some modifications may be required depending on the specific molding equipment and part configuration.

**INJECTION MOLDING**

Melt Temp (°C)	Nozzle Temp (°C)	Front Temp (°C)	Center Temp (°C)	Center Temp (°C)	Rear Temp (°C)
230	215-225	210-220	210-220	200-210	190-200
Filling Speed			Mold Temp (°C)		
Slow-Med			60-80		



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Properties	Test Method (ASTM)	Test Condition	Unit	Extrusion ABS		
				Sheet Grade		High Impact
				ABS-75	ABS-75T	ABS-90
Izod Impact	D - 256	6.4 mm, Notched	KJ/m <sup>2</sup>	27	23	33
Melt Flow Index	D - 1238	220°C, 10 Kg	gr/10 min	5	5.5	9
Rockwell Hardness	D - 785	R-scale	Rockwell	107	108	95
Heat Deflection Temp	D - 648	0.45 Mpa	°C	88	85	82
Vicat Softening Temp	D - 1525	10 N	°C	96	95	92
Tensile Strength	D - 638	23°C, 50 mm/min	Kg/cm <sup>2</sup>	410	470	380
Tensile Elongation	D - 638	23°C, 50 mm/min	%	18	18	20
Flexural Strength	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	640	670	550
Flexural Modulus	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	19000	20000	16000
Specific Gravity	D - 792	23°C	g/cm <sup>3</sup>	1.04	1.04	1.04
Molding Shrinkage	D - 955	-	%	0.4 - 0.7	0.4 - 0.7	0.4 - 0.7
Flammability	UL 94	½ inch (3.2 mm)	-	HB	HB	HB

Note 1) These are typical property values, not specifications.  
 Note 2) In pre-colored products, the values could slightly differ from table values.  
 Note 3) Values are measured at 23°C and in relative humidity (RH) of 50% on injection molded specimens of natural grade compliant with ASTM standards



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Group	Grade	Characteristic	Application
Sheet (Extrusion)	ABS-75	High Impact Strength, High Hardness	The refrigerator inner liner, and refrigerator door liner, consistent with Cyclopentane gas
	ABS-75 T	Thin layer sheet, High Hardness, proper for Thermoforming	Refrigeration Industries, Jacuzzi tub, Electrical part
High Impact	90	High Impact Strength, extrusion	Automobile parts, helmets, boats, suitcase

**TYPICAL ABS PROCESSING CONDITIONS**  
 DRYING: It is recommended that GBPC ABS Resins be dried at (80-85°C) for 3 hours.  
 An extruder with one-stage or two-stage venting and a Gear pump is recommended for the extrusion of the sheet. compression ratios should be between 2.5/1 and 3.0/1 for a single stage screw and L/D ratios > 30(L/D=30) is typical.

Zone 7(°C)	Zone 6(°C)	Zone 5(°C)	Zone 4(°C)	Zone 3(°C)	Zone 2(°C)	Zone 1(°C)
225-245	225-245	225-245	225-245	220-240	210-230	190-210
Screen Pack Mesh (2 Layer)		Center Die Zone(°C)		Mid Die Zone (°C)	Outer Die Zone(°C)	Adapter(°C)
#40 / #80 / #80 / #40		220-240		220-240	230-245	225-245
Head pressure		Die Lip Thickness(mm)		Nip Roll Bottom(°C)	Nip Roll Middle(°C)	Nip Roll Top(°C)
140 bar		1.5-4.5		60-80	70-90	60-80



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Property	Test Method (ASTM)	Test Condition	Unit	ABS (special grade)			
				Electroplating	High Gloss		
					ABS-10	HA-28WH	28 WH
Izod Impact	D - 256	6.4 mm, Notched	KJ/m <sup>2</sup>	23	17	10	10
Melt Flow Index	D - 1238	220°C, 10 Kg	gr/10 min	30	30	30	30
Rockwell Hardness	D - 785	R-scale	Rockwell	104	110	112	115
Heat Deflection Temp	D - 648	0.45 Mpa	°C	86	91	94	95
Vicat Softening Temp	D - 1525	10 N	°C	94	96	99	100
Tensile Strength	D - 638	23°C, 50 mm/min	Kg/cm <sup>2</sup>	410	430	460	550
Tensile Elongation	D - 638	23°C, 50 mm/min	%	20	20	8	20
Flexural Strength	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	590	610	660	810
Flexural Modulus	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	18500	18000	21000	23000
Specific Gravity	D - 792	23°C	g/cm <sup>3</sup>	1.04	1.04	1.04	1.04
Mold Shrinkage	D - 955	-	%	0.4 - 0.7	0.4 - 0.7	0.4 - 0.7	0.4 - 0.7
Flammability	UL 94	½ inch (3.2 mm)	-	HB	HB	HB	HB
Glossiness	D - 523	60	Glossity	88	88	90	94

Note 1) These are typical property values, not specifications.  
 Note 2) In pre-colored products, the values could slightly differ from table values.  
 Note 3) Values are measured at 23°C and in relative humidity (RH) of 50% on injection molded specimens of natural grade compliant with ASTM standards.



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Group	Grade	Characteristic	Application
Electroplating	ABS-10	General plating, Electroplating	Automobile parts, Electrical parts, Handles of automobile and refrigerator
High Gloss	HA-28WH	High gloss, anti-scratch	Electrical parts, home appliances, monitor, TV. Vacuum cleaner
	28WH	High gloss	Electrical parts, home appliances, monitor, TV. Vacuum cleaner
	HG-505	High gloss	Electrical parts, home appliances, monitor, TV. Vacuum cleaner

**TYPICAL ABS PROCESSING CONDITIONS**  
 DRYING: It is recommended that GBPC ABS Resins be dried at (80-85°C) for 3 hours.  
 The following molding conditions are recommended starting points for GBPC ABS Resin. A moisture level of ≤0.1% should be reached before injection molding the resin.  
 Some modifications may be required depending on the specific molding equipment and part configuration.

Melt Temp (°C)	Nozzle Temp (°C)	Front Temp (°C)	Center Temp (°C)	Center Temp (°C)	Rear Temp(°C)
260	265-270	250-260	240-250	230-240	230-240
			Filling Speed	Mold Temp (°C)	
			Slow-Med	70-80	

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Property	Test Method (ASTM)	Test Condition	Unit	ABS(special grade)			
				Flame Retardant			Anti-static
				HFA-70	HFA-75	HFA-78	50 V
Izod Impact	D - 256	6.4 mm, Notched	KJ/m <sup>2</sup>	15	16	18	20
Melt Flow Index	D - 1238	220°C, 10 Kg	gr/10 min	32	12	50	32
Rockwell Hardness	D - 785	R-scale	Rockwell	112	110	110	109
Heat Deflection Temp	D - 648	0.45 Mpa	°C	84	84	82	88
Vicat Softening Temp	D - 1525	10 N	°C	94	92	92	95
Tensile Strength	D - 638	23°C, 50 mm/min	Kg/cm <sup>2</sup>	420	470	400	430
Tensile Elongation	D - 638	23°C, 50 mm/min	%	15	12	15	15
Flexural Strength	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	620	620	600	620
Flexural Modulus	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	18000	20000	17500	19000
Specific Gravity	D - 792	23°C	g/cm <sup>3</sup>	1.16	1.16	1.16	1.04
Mold Shrinkage	D - 955	-	%	0.4 - 0.7	0.4 - 0.7	0.4 - 0.7	0.4 - 0.7
Flammability	UL 94	½ inch (3.2 mm)	-	V-0	V-0	V-0	HB

Note 1) These are typical property values, not specifications.  
 Note 2) In case of pre-colored products, the values could slightly differ from table values.  
 Note 3) Values are measured at 23°C and in relative humidity (RH) of 50% on injection molded specimens of natural grade compliant with ASTM standards.

Group	Grade	Characteristic	Application
Anti-static	50 V	Anti-static, medium impact strength	Electronic and electrical equipment, vacuum cleaner, home appliance
Flame retardant	HFA-70	Flame retardant, medium impact strength	Electronic and electrical equipment, automobile parts, home appliances, water heater
	HFA-75	Flame retardant, good sheet formability	Electronic and electrical equipment, automobile parts, home appliance
	HFA-78	Flame retardant, high flow	Electronic and electrical equipment, automobile parts, home appliance

**TYPICAL ABS PROCESSING CONDITIONS**  
 DRYING: It is recommended that GBPC ABS Resins be dried at (80-85°C) for 3 hours. The following molding conditions are recommended starting points for GBPC ABS Resin. A moisture level of ≤0.1% should be reached before injection molding the resin. Some modifications may be required depending on the specific molding equipment and part configuration.

INJECTION MOLDING					
Melt Temp (°C)	Nozzle Temp (°C)	Front Temp (°C)	Center Temp (°C)	Center Temp (°C)	Rear Temp (°C)
220	210-220	200-210	200-210	200-210	190-200
Filling Speed			Mold Temp (°C)		
Slow-Med			60-80		



Property	Test Method (ASTM)	Test Condition	Unit	ABS (Special grade)		
				Transparent		High Heat
				GAC-550 TR	50-TR	GH-500
Izod Impact	D - 256	6.4 mm, Notched	KJ/m <sup>2</sup>	14	12	16
Melt Flow Index	D - 1238	220°C, 10 Kg	gr/10 min	25	28	8
Rockwell Hardness	D - 785	R-scale	Rockwell	120	105	108
Heat Deflection Temp	D - 648	0.45 Mpa	°C	95	88	105
Vicat Softening Temp	D - 1525	10 N	°C	102	96	120
Tensile Strength	D - 638	23°C, 50 mm/min	Kg/cm <sup>2</sup>	510	400	420
Tensile Elongation	D - 638	23°C, 50 mm/min	%	22	8	14
Flexural Strength	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	750	500	700
Flexural Modulus	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	18000	16000	19000
Specific Gravity	D - 792	23°C	g/cm <sup>3</sup>	1.06	1.04	1.05
Molding Shrinkage	D - 955	-	%	0.3 - 0.6	0.4 - 0.7	0.4 - 0.7
Flammability	UL 94	½ inch (3.2 mm)	-	HB	HB	HB

Note 1) These are typical property values, not specifications.  
 Note 2) In pre-colored products, the values could slightly differ from table values.  
 Note 3) Values are measured at 23°C and in relative humidity (RH) of 50% on injection molded specimens of natural grade compliant with ASTM standards.

Group	Grade	Characteristic	Application
Transparent	50-TR	Transparent	Home appliances, Electrical Parts, office supplies, washing machine
	GAC 550-TR	Transparent	Home appliances, Electrical Parts, office supplies, washing machine
High Heat	GH-500	Super high heat-resistant	Automobile and Electrical Parts

**TYPICAL SAN PROCESSING CONDITIONS**  
 DRYING: It is recommended that GBPC SAN Resins be dried at (80-85°C) for 3 hours. The following molding conditions are recommended starting points for GBPC SAN Resin. A moisture level of ≤0.1% should be reached before injection molding the resin. Some modifications may be required depending on the specific molding equipment and part configuration.

INJECTION MOLDING					
Melt Temp (°C)	Nozzle Temp (°C)	Front Temp (°C)	Center Temp (°C)	Center Temp (°C)	Rear Temp (°C)
230	215-225	210-220	210-220	200-210	190-200
Filling Speed			Mold Temp (°C)		
Slow-Med			60-80		



Property	Test Method (ASTM)	Test Condition	Unit	ABS/PC						
				High flow	High-impact strength			Super High-impact strength		
				High flow	Electroplating	Anti-scratch	Flame retardant	Flame retardant & high-flow		
				GAC 220	GAC 250	GAC 250 E	GAC 265	GAC 265 HA	GAC 265 FR	GAC 265 HFR
Izod Impact	D - 256	6.4 mm, Notched	KJ/m <sup>2</sup>	10	40	32	48	35	35	20
Melt Flow Index	D - 1238	220°C, 10 Kg	gr/10 min	12	8	12	6	8	12	42
Rockwell Hardness	D - 785	R-scale	Rockwell	105	112	112	115	120	115	112
Heat Deflection Temp	D - 648	0.45 Mpa	°C	100	120	107	125	120	115	110
Vicat Softening Temp	D - 1525	10 N	°C	105	110	112	130	125	120	105
Tensile Strength	D - 638	23°C, 50 mm/min	Kg/cm <sup>2</sup>	460	500	500	580	610	520	600
Tensile Elongation	D - 638	23°C, 50 mm/min	%	20	45	50	50	80	40	20
Flexural Strength	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	700	750	700	800	880	750	780
Flexural Modulus	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	19000	18500	19000	19000	21000	19000	21000
Specific Gravity	D - 792	23°C	-	1.08	1.08	1.08	1.08	1.08	1.12	1.05
Molding Shrinkage	D - 955	-	%	0.5 - 0.7	0.5 - 0.7	0.3 - 0.6	0.5 - 0.7	0.2 - 0.6	0.5 - 0.7	0.2 - 0.8
Flammability	UL94	½ inch (3.2 mm)	-	HB	HB	HB	V-2	V-2	V-0	V-0

Note 1) These are typical property values, not specifications.  
 Note 2) Pre-colored products, the values could slightly differ from table values.  
 Note 3) Values are measured at 23°C and in relative humidity (RH) of 50% on injection molded specimens of natural grade compliant with ASTM standards.



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Group	Group	Characteristic	Application
Super High-impact strength	GAC 265 HA	Anti-scratch, high hardness, heat resistant	Home Appliances, Electrical Parts, Automobile Interior and Exterior Trims, Switches, and Sockets
	GAC 265 HFR	Flame retardant, high flow, halogen free, odorless	Home Appliances, Electrical Part, Automobile Interior, and Exterior Trims
	GAC 265	Super High-impact strength	Electrical cases, Automobile Interior and Exterior Trims
	GAC 265FR	Flame retardant	Electrical cases, Automobile Interior and Exterior Trims and Exterior Trims
High-impact strength	GAC 220	High Flow	Home appliance, automobile parts
	GAC 250	High flow, High-impact strength	Automobile Interior and Exterior Trims
	GAC 250 E	Electroplating, injectable parts, heat resistant	Automobile Interior and Exterior Trims (door handle)

#### TYPICAL ABS PROCESSING CONDITIONS

DRYING: It is recommended that GBPC ABS Resins be dried at (80-85°C) for 3 hours. The following molding conditions are recommended starting point for GBPC ABS Resin. A moisture level of ≤0.1% should be reached before injection molding the resin. Some modifications may be required depending on the specific molding equipment and part configuration

#### INJECTION MOLDING

Melt Temp (°C)	Nozzle Temp (°C)	Front Temp (°C)	Center Temp (°C)	Center Temp (°C)	Rear Temp (°C)
260	260 - 270	250 - 260	240 - 250	230 - 240	230 - 240
Filling Speed			Mold Temp (°C)		
Slow-Med			70-80		



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Property	Test Method (ASTM)	Test Condition	Unit	ABS/PA
				Super High Impact HI - 390
Izod Impact	D - 256	6.4 mm, Notched	KJ/m <sup>2</sup>	52
Melt Flow Index	D - 1238	240°C, 10 Kg	gr/10 min	55
Rockwell Hardness	D - 785	R - scale	Rockwell	115
Heat Deflection Temp	D - 648	0.45 Mpa	°C	115
Vicat Softening Temp	D - 1525	10 N	°C	120
Tensile Strength	D - 638	23°C, 50 mm/min	Kg/cm <sup>2</sup>	420
Tensile Elongation	D - 638	23°C, 50 mm/min	%	60
Flexural Strength	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	600
Flexural Modulus	D - 790	23°C, 2.8 mm/min	Kg/cm <sup>2</sup>	15000
Specific Gravity	D - 792	23°C	g/cm <sup>3</sup>	1.07
Molding Shrinkage	D - 955	-	%	0.5 - 0.7
Flammability	UL 94	½ inch (3.2 mm)	-	HB

Note 1) These are typical property values, not specifications.  
 Note 2) In case of pre-colored products, the values could slightly differ from table values.  
 Note 3) Values are measured at 23°C and in relative humidity (RH) of 50% on injection molded specimens of natural grade compliant with ASTM standards



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Group	Characteristic	Application
HI-390	High Impact Strength, Heat Stability	Home appliances, Electrical Parts, Automobile Interior and Exterior Trims

#### TYPICAL SAN PROCESSING CONDITIONS

DRYING: It is recommended that GBPC SAN Resins be dried at (80-85°C) for 3 hours. The following molding conditions are recommended starting point for GBPC SAN Resin. A moisture level of ≤0.1% should be reached before injection molding the resin. Some modifications may be required depending on the specific molding equipment and part configuration.

#### INJECTION MOLDING

Melt Temp (°C)	Nozzle Temp (°C)	Front Temp (°C)	Center Temp (°C)	Center Temp (°C)	Rear Temp (°C)
250	240 - 250	230-240	230 - 240	230 - 240	230 - 240
Filling Speed			Mold Temp (°C)		
Slow-Med			50-80		

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