SABIC
Innovative
Plastics™

سابك
sabic

SABIC® PC polycarbonate resin



SABIC PC polycarbonate resin

Sharing our futures

SABIC PC resin is an amorphous engineering thermoplastic which is characterized by high levels of mechanical, optical, electrical and thermal properties. It is offered in special grades for use in custom compounding, extrusion, general purpose and optical media applications. These products are available in a standard transparent color and are excellent candidates for a wide variety of applications and compounding needs.

SABIC PC resin, manufactured exclusively at the new Saudi Kayan plant, comes with the same commitment to quality that you have come to expect from SABIC Innovative Plastics™, a world leader in polycarbonate resin manufacturing for over 50 years.

SABIC PC resin offers:

- High impact strength
- Inherent “water clear” transparency
- Product purity, consistency and durability
- High heat resistance
- Dimensional stability at elevated temperatures
- UV stability
- Very good processability
- Recyclability



SAUDI KAYAN World-class facility. Located in Saudi Arabia's Jubail Industrial City, SAUDI KAYAN is the largest integrated petrochemical complex in the Middle East, consisting of a total of 15 plants.

The facility will be one of the first petrochemical sites in the world to use crude oil for steam generation and hosts the largest closed loop seawater cooling tower in the Middle East.

The SABIC PC resins portfolio offers an optimized set of products designed to serve high volume applications in the extrusion, injection molding and optical media markets. We also offer a wide range of products for the custom compounding market.

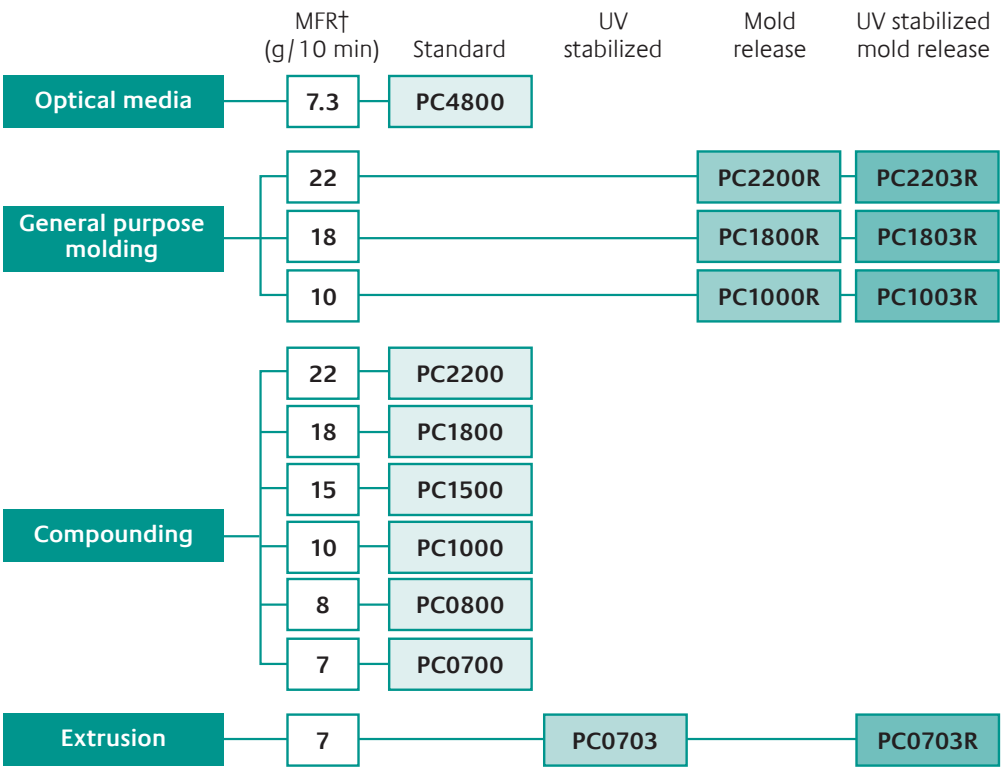
Extrusion grades (EXT)
SABIC PC resin is available for extrusion applications in UV stabilized grades with or without release.

Compounding grades (CMP)
SABIC PC resin offers a variety of grades suitable for use as feedstock for custom compounding operations.

General purpose molding grades (GP)
SABIC PC resin offers a range of melt flow options in general purpose grades for injection molding applications.

Optical media grade (OQ)
SABIC PC resin is available in a high flow, optical quality grade designed specifically for use in optical media.

SABIC PC resins product tree



†250°C/1.2 kg for PC4800, 300°C/1.2 kg for all other grades.

SABIC PC resin nomenclature

PC	X X	0	X	X
	Flow (MFR‡)	Reserved	Additives	Special
	48		0	R
	22		(Heat stabilizer)	(Release)
	18		3	
	15		(UV, heat stabilizer)	
	10			
	8			
	7			

‡300°C/1.2 kg

SABIC PC resin color nomenclature

GC	X	X	X
Global color	Lightness indicator	Alpha numeric description	Special
	9 (Lightest)		T (Tint)
	↓		
	1 (Darkest)		N (Natural)

Typical property values† Visit sabicpc.sg

			Extrusion		Compounding		
Property	**Unit**	**Method**	**PC0703**	**PC0703R**	**PC0700**	**PC0800**	**PC1000**
Mechanical							
Tensile stress, yield, 50 mm/min (type I)	MPa	ISO 527 (ASTM D 638)	63 (63)	63 (63)	63 (63)	63 (63)	63 (63)
Tensile strain, yield, 50 mm/min (type I)	%	ISO 527 (ASTM D 638)	6 (6)	6 (6)	6 (6)	6 (6)	6 (6)
Tensile strain, break, 50 mm/min (type I)	%	ISO 527 (ASTM D 638)	>70 (>70)	>70 (>70)	>70 (>70)	>70 (>70)	>70 (>70)
Tensile modulus, 1 mm/min	MPa	ISO 527	2,350	2,350	2,350	2,350	2,350
Tensile modulus, 50 mm/min	MPa	ASTM D 638	2,350	2,350	2,350	2,350	2,350
Flexural strength, yield, 2 mm/min	MPa	ISO 178	90	90	90	90	90
Flexural stress, yield, 1.3 mm/min, 50 mm span	MPa	ASTM D 790	90	90	90	90	90
Flexural modulus, 2 mm/min	MPa	ISO 178	2,300	2,300	2,300	2,300	2,300
Flexural modulus, 1.3 mm/min, 50 mm span	MPa	ASTM D 790	2,300	2,300	2,300	2,300	2,300
Hardness, Rockwell R	—	ISO 2039 (ASTM D 785)	120 (120)	120 (120)	120 (120)	120 (120)	120 (120)
Impact							
Izod impact, unnotched 80*10*3 23°C	kJ/m²	ISO 180/ 1U	NB	NB	NB	NB	NB
Izod impact, unnotched 80*10*3 -30°C	kJ/m²	ISO 180/ 1U	NB	NB	NB	NB	NB
Izod impact, unnotched, 23°C	J/m	ASTM D 4812	NB	NB	NB	NB	NB
Izod impact, notched 80*10*3 23°C	kJ/m²	ISO 180/ 1A	70	70	70	70	70
Izod impact, notched 80*10*3 -30°C	kJ/m²	ISO 180/ 1A	12	12	12	12	12
Izod impact, notched, 23°C	J/m	ASTM D 256	900	900	900	900	800
Instrumented impact energy @ peak, 23°C	J	ASTM D 3763	65	65	65	65	65
Thermal							
Thermal conductivity	W/m-°C	ISO 8302 (ASTM C 177)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)
CTE, 23°C to 80°C, flow	1/C	ISO 11359-2	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05
CTE, -40°C to 95°C, flow	1/°C	ASTM E 831	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05
Ball pressure test, 125°C ±2°C	—	IEC 60695-10-2	Passes	Passes	Passes	Passes	Passes
Vicat softening temperature, rate B/50	°C	ISO 306 (ASTM D 1525)	144 (144)	144 (144)	144 (144)	144 (144)	143 (143)
HDT, 0.45 MPa	°C	ISO 75 (ASTM D 648)	138 (138)	138 (138)	138 (138)	138 (138)	138 (138)
HDT, 1.8 MPa	°C	ISO 75 (ASTM D 648)	127 (127)	127 (127)	127 (127)	127 (127)	127 (127)
Physical							
Mold shrinkage on tensile bar, flow (2)	%	SABIC method	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7
Mold shrinkage, flow, 3.2 mm	%	SABIC method	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7
Density	g/cm³	ISO 1183	1.2	1.2	1.2	1.2	1.2
Specific gravity	—	ASTM D 792	1.2	1.2	1.2	1.2	1.2
Water absorption (23°C/sat)	%	ISO 62-1	0.35	0.35	0.35	0.35	0.35
Water absorption equilibrium, 23°C	%	ASTM D 570	0.35	0.35	0.35	0.35	0.35
Melt flow rate (MFR) at 300°C/1.2 kgf	g/10 min	ASTM D 1238	7	7	7	8	10
Melt flow rate (MFR) at 250°C/1.2 kgf	g/10 min	ASTM D 1238	—	—	—	—	—
Melt volume rate (MVR) at 300°C/1.2 kg	cm³/10 min	ISO 1133	6.5	6.5	6.5	7.5	9.5
Melt volume rate (MVR) at 250°C/1.2 kg	cm³/10 min	ISO 1133	—	—	—	—	—
Optical							
Refractive index	—	ISO 489 (ASTM D 542)	1.586 (1.586)	1.586 (1.586)	1.586 (1.586)	1.586 (1.586)	1.586 (1.586)
Light transmission, 2.54 mm	%	ASTM D 1003	88 - 90	88 - 90	88 - 90	88 - 90	88 - 90
Haze, 2.54 mm	%	ASTM D 1003	<0.8	<0.8	<0.8	<0.8	<0.8
Electrical							
Volume resistivity	Ohm-cm	IEC 60093 (ASTM D 257)	>1 E+15 (>1 E+15)	>1 E+15 (>1 E+15)	>1 E+15 (>1 E+15)	>1 E+15 (>1 E+15)	>1 E+15 (>1 E+15)
Dielectric strength, 1.6 mm	kV/mm	IEC 60243-1 (ASTM D149)	27 (27)	27 (27)	27 (27)	27 (27)	27 (27)
Relative permittivity 60 Hz	—	IEC 60250 (ASTM D 150)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)
Relative permittivity 1 MHz	—	IEC 60250 (ASTM D 150)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)
Dissipation factor, 60 Hz	—	IEC 60250 (ASTM D 150)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Dissipation factor, 1 MHz	—	IEC 60250 (ASTM D 150)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)

† See disclaimer on back cover

Compounding			General purpose molding						Optical media
PC1500	**PC1800**	**PC2200**	**PC1000R**	**PC1003R**	**PC1800R**	**PC1803R**	**PC2200R**	**PC2203R**	**PC4800**
63 (63)	63 (63)	63 (63)	63 (63)	63 (63)	63 (63)	63 (63)	63 (63)	63 (63)	60 (60)
6 (6)	6 (6)	6 (6)	6 (6)	6 (6)	6 (6)	6 (6)	6 (6)	6 (6)	6 (6)
>70 (>70)	>70 (>70)	>70 (>70)	>70 (>70)	>70 (>70)	>70 (>70)	>70 (>70)	>70 (>70)	>70 (>70)	>40 (>40)
2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350
2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350
90	90	90	90	90	90	90	90	90	90
90	90	90	90	90	90	90	90	90	90
2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300
2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300
120 (120)	120 (120)	120 (120)	120 (120)	120 (120)	120 (120)	120 (120)	120 (120)	120 (120)	— (—)
NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
NB	NB	NB	NB	NB	NB	NB	NB	NB	—
70	70	65	70	70	70	70	65	65	15
12	12	12	12	12	12	12	12	12	12
800	700	640	800	800	700	700	640	640	—
65	65	55	65	65	65	65	55	55	—
0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)
7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05
7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05	7.0 E-05
Passes	Passes	Passes	Passes	Passes	Passes	Passes	Passes	Passes	Passes
141 (141)	141 (141)	140 (140)	143 (143)	143 (143)	141 (141)	141 (141)	140 (140)	140 (140)	138 (138)
136 (136)	135 (135)	133 (133)	138 (138)	138 (138)	135 (135)	135 (135)	133 (133)	133 (133)	132 (132)
125 (125)	124 (124)	122 (122)	127 (127)	127 (127)	124 (124)	124 (124)	122 (122)	122 (122)	122 (122)
0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7
0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	—
1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
15	18	22	10	10	18	18	22	22	—
—	—	—	—	—	—	—	—	—	7.3
14	17	21	9.5	9.5	17	17	21	21	—
—	—	—	—	—	—	—	—	—	—
1.586 (1.586)	1.586 (1.586)	1.586 (1.586)	1.586 (1.586)	1.586 (1.586)	1.586 (1.586)	1.586 (1.586)	1.586 (1.586)	1.586 (1.586)	1.586 (1.586)
88 - 90	88 - 90	88 - 90	88 - 90	88 - 90	88 - 90	88 - 90	88 - 90	88 - 90	>90
<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.7
>1 E+15 (>1 E+15)	>1 E+15 (>1 E+15)	>1 E+15 (>1 E+15)	>1 E+15 (>1 E+15)	>1 E+15 (>1 E+15)	>1 E+15 (>1 E+15)	>1 E+15 (>1 E+15)	>1 E+15 (>1 E+15)	>1 E+15 (>1 E+15)	>1 E+15 (—)
27 (27)	27 (27)	27 (27)	27 (27)	27 (27)	27 (27)	27 (27)	27 (27)	27 (27)	— (—)
3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	— (—)
3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)	3.0 (—)
0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	— (—)
0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (—)

Processing conditions

Our processing conditions are provided as guidelines for injection molding and extrusion of SABIC® PC resins. Some adjustment within these guidelines may be necessary in order to optimize performance in specific processing equipment and tooling.

		Injection molding							Extrusion
	Unit	PC0700 PC0703 PC0703R	PC0800	PC1000 PC1000R PC1003R	PC1500	PC1800 PC1800R PC1803R	PC2200 PC2000R PC2003R	PC4800	PC0703 PC0703R
Drying temperature	°C	120	120	120	120	120	120	120	120
Drying time	hrs	2-4	2-4	2-4	2-4	2-4	2-4	4-6	2-4
Maximum moisture content	%	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Melt temperature	°C	290-320	290-320	280-310	280-310	280-300	280-300	340-370	270-280
Nozzle temperature	°C	280-310	280-310	270-290	270-290	270-290	270-290	340-370	–
Front – zone 3 temperature	°C	290-320	290-320	280-310	280-310	280-300	280-300	350-380	–
Middle – zone 2 temperature	°C	280-310	280-310	270-290	270-290	270-290	270-290	320-340	–
Rear – zone 1 temperature	°C	270-300	270-300	260-280	260-280	260-280	260-280	270-290	–
Barrel – zone 1 temperature	°C	–	–	–	–	–	–	–	260-280
Barrel – zone 2 temperature	°C	–	–	–	–	–	–	–	260-280
Barrel – zone 3 temperature	°C	–	–	–	–	–	–	–	260-280
Barrel – zone 4 temperature	°C	–	–	–	–	–	–	–	260-280
Hopper temperature	°C	60-80	60-80	60-80	60-80	60-80	60-80	60-80	40-60
Mold temperature	°C	80-120	80-120	80-110	80-110	80-100	80-100	75-95	–
Adapter temperature	°C	–	–	–	–	–	–	–	260-280
Die temperature	°C	–	–	–	–	–	–	–	250-260
Calibrator temperature	°C	–	–	–	–	–	–	–	70-90

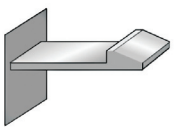
SABIC PC engineering tools

To support your design needs, online engineering tools are available for SABIC PC resins at sabicpc.com



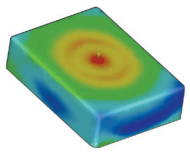
Thermal analysis

Use this tool to perform simple thermal analysis of sealed electronic and telecom enclosures. Valid for enclosure volumes from 2327 cm^3 (142 in^3) to 60600 cm^3 (3700 in^3).



Snap fit

Evaluate the feasibility of your snap fit design using this tool. Calculated results include maximum strain and insertion and pullout forces.



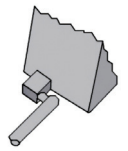
Flow calculator

A quick yet powerful analytical tool to determine if your part will fit with the given flow length, thickness, geometry and designated material by determining the maximum injection pressure required to fill it.



Part cost estimator

Roughly estimate material and processing cost for a given part. This tool can be used to compare different material or design options.



Shear rate calculator

Determine gate size and design feasibility by calculating the maximum shear rate of plastic flowing through user-defined gate geometry.

Typical offsets

SABIC® PC resin	Market	MFR target	R	UV	Lexan* PC resin	Bayer MAKROLON	Dow CALIBRE	Teijin PANLITE	Mitsubishi IUPILON	Mitsubishi NOVAREX	Chi Mei WONDER-LITE	Cheil INFINO	Honam HOPELEX	Kazan-orgsintez MAPKA
PC4800	OQ	7.3†			OQ1023	OD2015	1080DVD	AD-5503	H-4000	M7020AD2	(PC-175) (PC-175D)	(SC-1620)	(PC-1750)	(PC-075)
PC2200	CMP	22					300EP-22				PC-122	SC-1220	PC-1220	PC-022
PC2200R	GP	22	•			2405	301EP-22					SC-1220R		
PC2203R	GP	22	•	•		2407	303EP-22 (302EP-22)				(PC-122U)	SC-1220UR (SC-1220U)		
PC1800	CMP	18			121									
PC1800R	GP	18	•		121R			L-1225L		7020R				
PC1803R	GP	18	•	•	123R									
PC1500	CMP	15				(2605)	300-15 (301-15)		S-3000 (S-3000R)	(7022R)	PC-115		PC-1150	PC-015
PC1000	CMP	10			141/161		300-10		S-2000		PC-110	SC-1100	PC-1100	PC-010
PC1000R	GP	10	•		141R/161R	2805	301-10	L-1225Y	S-2000R		PC-110R	SC-1100R		
PC1003R	GP	10	•	•	143R/163R (143/163)	2807	303-10 (302-10)	L-1225Z100	S-2000UR (S-2000U)		(PC-110U)	SC-1100UR (SC-1100U)	(PC-1100U)	(PC-010U)
PC0800	CMP	8						L-1250Y		(7025R)				
PC0700	CMP	7			101 (101R)	(3105)	(300-6) (301-6)		S-1000 (S-1000R)	(7027R)	PC-108	(SC-1060)	PC-1070	PC-007
PC0703	EXT	7		•	103	(3103)	(302-6)		S-1000U		PC-108U	(SC-1060U)	PC-1070U	PC-007U
PC0703R	EXT	7	•	•	103R	3103 MAS157 (3107)	(303-6)		S-1000UR					

R = Mold release
UV = UV stabilized

MFR targets for SABIC® PC resins per ASTM D 1238

†Melt Flow Rate (MFR) for PC4800 at 250°C/1.2 kg
MFR for all other grades at 300°C/1.2 kg

"( )" indicates indirect offset

OQ = Optical media grade
CMP = Compounding grade
GP = General purpose molding grade
EXT = Extrusion grade

To place your order call:

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