



DIAMOND POLYMERS, INC.

ABS/PC ALLOY'S 7030, 7801, 7901, 8901, 9901

PROCESSING GUIDELINES CONTINUED

Melt Temperature: 238°-272°C (460°-520°F). Melt temperatures in excess of 272°C (530°F) are not recommended, and may result in color shifts and / or thermal instability.

Nozzle Temp.: **238°-272°C (460°-520°F)
Front Cylinder Temp.: **238°-272°C (460°-520°F)
Center Cylinder Temp.: **235°-265°C (455°-510°F)
Rear Cylinder Temp.: **230°-260°C (445°-500°F)

Back Pressure: Minimum pressure to keep a consistent shot, yet not create excessive shear heat. The recommended pressure should be in the range of 50-150 psi.

Mold Temperature: 40°-80°C (100°-180°F). Higher mold temperature can aid flow in processing, provides a better surface finish, and creates less residual stress in the finished products.

Screw Decompression: Minimum amount - or splay can be induced.

Regrind: Providing material degradation has not occurred, regrind can be used for up to 3 generations with minimal mechanical and physical property loss. It is recommended that regrind levels do not exceed 30%, and that the regrind be mixed thoroughly with the virgin material.

Purging: ABS/PC Alloy's should not be left in the barrel for extended periods of time. For short periods of down time, 30 minutes, the screw should be purged forward and left in the forward position. Extended down time, longer than 30 minutes, the hopper should be shut off and the machine should be purged dry with styrene. For extended down time, longer than 30 minutes and if unable to purge out the barrel, we recommend banking the heats to 148°C (300°F) to avoid degradation (black specs) when restarting.

*Optimum shot size is determined by screw design, melt temperature and residence time.

** Cylinder temperature is determined by screw design, back pressure, residence time, and part design.



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ABS/Polycarbonate alloys offer designers and processors many of the property advantages associated with polycarbonate while providing the processability of ABS. Diamond Polymers offers several grades of ABS/PC alloys, including our flame retardant grade, FC-30. All of Diamond Polymer's ABS/PC alloys are available in custom colors, and with UV stabilizer packages for added UV resistance.

DIAMOND POLYMERS ABS/PC ALLOY'S have a wide variety of excellent mechanical and physical properties including high impact strength, high flexural strength, high vicat and heat distortion temperatures, good chemical resistance, dimensional stability and UL/CSA 94 HB ratings for flammability.

DIAMOND POLYMERS ABS/PC ALLOY'S have gained wide acceptance in the manufacture of small and large parts which require a material with high impact strength, high heat deflection temperatures, and UV stability. Applications include hand held scanner, personal computers, lap top computers, printers, cellular telephones, lawn and garden equipment, etc.

DIAMOND POLYMERS ABS/PC ALLOY'S can be successfully processed on conventional Injection Molding machines by using the following recommended processing parameters.

Process Recommendations:

Drying: Drying of the material is necessary to retain the mechanical properties, and eliminate splay. The material is hygroscopic and must be dried to a level of 0.02% or less moisture prior to processing. Drying can be accomplished in a vented barrel (26:1 L/D) or by using a desiccant dryer. Drying can generally be performed in 2 - 4 hrs. at 90° - 100°C (195° - 210°F)

Screw Design: ABS/PC Alloy's will process well in GP screw designs with medium to low compression ratios. We recommend not using a screw designed with a mixing apparatus as excessive shear heat can be generated and can cause material degradation.

Non Return Valve: It is recommended that a free flow sliding check ring screw tip, or a free flow style self closing poppet / spool valve screw tip be used. Do not use a ball valve screw tip as excessive shear heat can be generated.

Barrel Capacity: *Optimum shot size to barrel capacity is 40 - 70% of rated barrel capacity. It is not recommended to use more than 85%, or less than 25% of the rated barrel capacity.