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Altech® ABS Processing Guide Injection Molding

Altech® ABS is an amorphous thermoplastic, unfilled or reinforced with glass fibers.

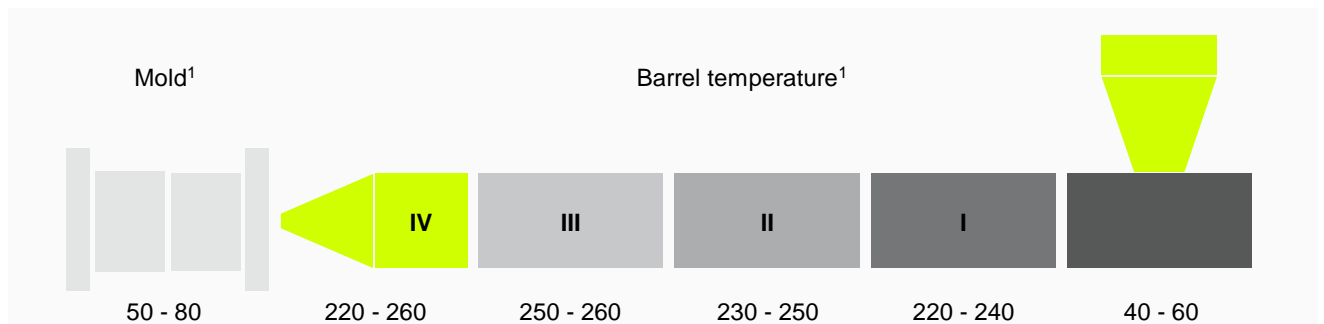
Pre-drying

Altech® ABS is a hygroscopic polymer. Depending on external conditions, such as climate or storage, the material may absorb moisture. Pre-drying of Altech® ABS compounds is recommended to prevent surface defects or

quality issues on the finished parts. Please see the technical data sheet of the individual Altech® ABS compound for drying conditions.

Processing

Altech® ABS can be processed on all standard injection molding machines.



Temperatures in degrees Celsius (°C)

¹Guide values. Standard starting profile might be in the middle. For reinforced or heat resistant ABS, values above the middle values are preferable, while for standard ABS, values below the middle values shall be selected.

Properties

Polymer	ABS
Density (ISO 1183)	1,02 - 1,30 g/cm ³ (see technical data sheet)

Injection machinery

Screw stroke	Metering stroke between 1 x D and 3 x D (D = screw diameter)
Screw type	Three zone screw with L/D ratio 18:1 to 22:1
Nozzle type	Open or shut-off nozzle
Hopper type	Standard

Pre-processing

Storage	Dry, protected from heat and UV radiation	
Dryer type	Air circulating	Dry air (desiccant)
Drying time	3 - 6 h	2 - 4 h
Drying temperature	80 °C	80 °C
Permissible moisture content	< 0.2 %	< 0.2 %

Processing conditions

Mass temperature	220 - 260 °C (for type-specific values, see technical data sheet)	
Mold temperature	50 - 80 °C	
Coolant	Water	
Throughput coolant	Turbulent flow must be achieved	
Peripheral screw speed	50 - 300 mm/s, e.g., screw speed of 35 rpm with a screw diameter of 50 mm	
Back pressure (specific)	50 - 100 bar	
Residence time	4 - 8 min	
Injection speed	Profile for constant flow front speed	

Shrinkage²

	ABS, unfilled	ABS, glass fiber reinforced
Parallel to flow, 24 h (ISO 294-4)	0.3 - 0.7 %	0.1 - 0.3 %
Transverse to flow, 24 h (ISO 294-4)	0.3 - 0.7 %	0.2 - 0.4 %

²Shrinkage is not a pure material property, but is influenced by fillers, the part/component geometry, its wall thickness and the position and size of the gate. The processing parameters, such as mold wall and melt temperature, also play a decisive role.

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