

Processing Guidelines

Injection Moulding



ROTEC® ABS, ASA, AES ROTEC® U400, U359

General

Rotec ABS, ASA, AES, U400, U359 can be processed using all techniques convenient for thermoplastic resins. In particular it can be moulded without difficulty on usual injection moulding machines. Based on its good processing properties and due to the thermal stability of the product, the material is easy to process and shows an excellent surface finish and gloss (fast injection speed, high tool temperature). Application of various types of gates is possible (VDI 2006).

Storage

Rotec ABS, ASA, AES, U400, U359 should be stored dry in closed rooms. Rotec ABS, ASA, AES, U400, U359 have to be protected against direct sun shine. If the material is stored outside the packs can be easily damaged and the granulate becomes faster yellow. Thus the mechanical and optical properties can be affected.

Drying

Rotec ABS, ASA, AES, U400, U359 leaves the plant with moisture content < 0.1 % (Karl-Fischer-Titration). Rotec ABS, ASA, AES, U400, U359 can absorb moisture if stored in inconvenient places. We therefore recommend to dry the material in a dry air dryer at 80°C for about 2-4 hours (circulation air drying oven, vacuum dryer, fixed hopper). If the material will not be dried properly, streaks on the surface can occur.

Furthermore, we recommend to dry the material up to moisture content < 0.05 %. The pellet hopper used should be heatable.

The drying time should be limited to 2h if the material is coloured in light colour.

Processing

Depending on the size of the injection moulding machine and the finished part, the processing conditions should be controlled regularly and very carefully. Following conditions are recommended for processing:

ROTEC® Grades	Standard transparent	High heat resistant	Plating grade	Flame retardant
Drying temperature	< 80 °C	< 85 °C	< 80 °C	< 80 °C
Drying time	2 - 4 h	2 - 4 h	2 - 4 h	2 - 4 h
Barrel temperature	210 - 250 °C	230 - 250 °C	210 - 250 °C	200 - 230 °C
Mould temperature	40 - 80 °C	60 - 80 °C	40 - 80 °C	40 - 60 °C
Injection speed	high	high	slow as possible	slow
Melt temperature	< 260 °C	< 260 °C	< 260 °C	< 235 °C
Screw rotation speed	moderate to high	moderate to high	slow to moderate	slow
Back pressure	low to moderate	low to moderate	low to moderate	< 10 %
Injection pressure	tool depending	tool depending	tool depending	high

The above mentioned processing parameter are only approximate and depend on the tool geometry and the machine used. It should be considered that flame retardant material is shear and temperature sensitive.

Transparent material appears to be milky immediately after moulding, but becomes transparent after storage at ambient temperature.

Recycling

Defective parts and sprues from Rotec ABS, ASA, AES, U400, U359 without any contaminations can be reprocessed as a regrind. The amount of the regrind used should be chosen in dependence on the colour and degree of reinforcing. We recommend to start with 5% regrind and to control changes of the mechanical and optical properties. However, if there are specific properties requested, only prime material should be used.

The use of regrind from flame retardant materials has to be limited. Trials are necessary to evaluate the maximum possible amount.

The above processing guidelines should advise without commitment. The statements given are based on our experience and are correct to the best of the knowledge at the time of printing. No liability should be assumed as a result of this information.

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