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Arnite® A

PET

Print date: 2024-02-28

Introduction:

Arnite® A polyesters are available in various grades. The main difference is the viscosity. Extrusion (single screw) of Arnite® A is possible with a conventional 3 zone screw with a compression ratio between 2.5 and 3.2. A barrier screw in combination with a grooved barrel results in an optimal stable process.

Material handling:

Pre-drying of Arnite® A grades is essential for extrusion application. Therefore we recommend minimum 4 hours drying at 140 °C. Please refer table mentioned below. A desiccant dryer with a dew point of ≤ -30 °C should be used (airflow rate: 2,5-3,0 m3/kg.hr) in order to reach a moisture level below 50 ppm (0,0005%). A drying hopper should be applied to the extruder.

Processing:

Arnite® A extrusion grades are run at mass temperatures between 270 and 280 °C depending on machine and material choice. All Arnite® T grades should be processed with low moisture content (< 50 ppm) to keep manufacturing stable. The machine parameters can be changed in order to meet the required stability and melt temperature. Arnite® A has high melt stability it helps to improve processing.

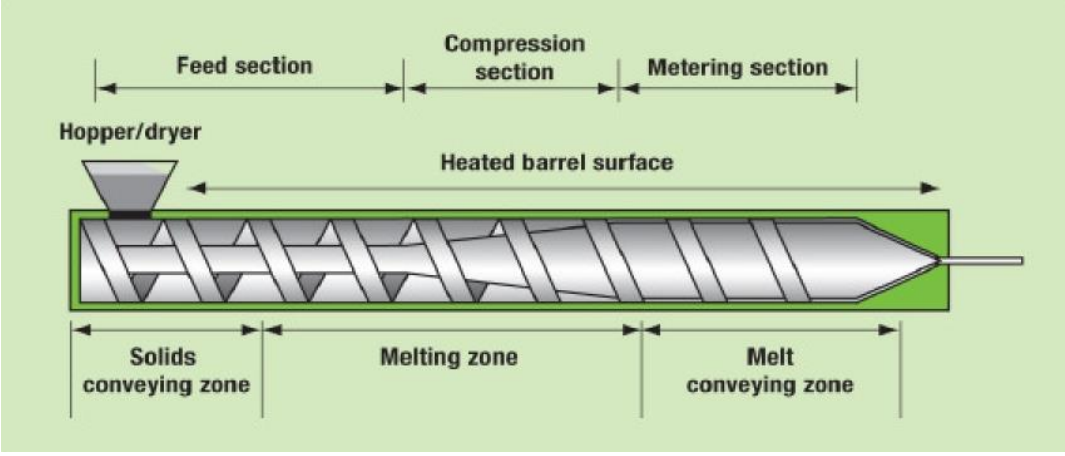

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Table 1. Typical temperature settings for Arnite® A extrusion (°C)

Grade Name	Zone 1	Zone 2	Zone 3	Zone 4	Die	Melt	Pre-Drying
Arnite® A06 101	285-295	270-280	265-275	265-275	265-275	270-280	80-120
Arnite® A06 700	285-295	270-280	265-275	265-275	265-275	270-280	80-120
Arnite® A08 100	285-295	270-280	265-275	265-275	265-275	270-280	80-120

Annealing:

Stock shapes application annealing is important process to follow.

- The annealing of Arnite A semi-finished products 3hours to 20 hours at 150 DegC in a hot air oven based on diameter of the stock shapes.
- After annealing these stock shapes have cooled up to 40 Deg C approximately 24 hours to 40 hours based on the rod's diameter (Ref-Table 2)
- Fast cooling should be avoided, otherwise it could create stress in the bars/rods and it would break during cutting process.
- It is necessary to prevent isolation of the rods to avoid rapid cooling.

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Table 2. Cooling time of Arnite® A Stock Shapes

Diameter (mm)	Time on 150°C	Cooling time
15	3	24 hours
20	3.5	
25	3.75	
30	4	
35	4.25	30 hours
40	5	
45	5	
50	5.5	
55	6	
60	6.5	
65	7	
70	8	
80	9	35 hours
90	10	
100	12	
125	15	
150	20	
175	30	40 hours
200	40	

Processing Guideline Arnite® A Extrusion

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Application:
Arnite® A06 101, A06 700 and A08 100 can be used preferably as stock shapes in precision parts and in food applications.

Safety:
Please handle the material with care. Follow all guidelines indicated on the temporarily version of the SDS.