

Arnitel® TPE-E

Recommendations for Material Handling

Arnitel® is supplied pre-dried, in moisture proof bags. The moisture content is low enough to permit immediate extrusion for most applications but pre-drying will improve the performance of the final polymer even more.

Moisture absorption: When exposed to air, Arnitel® granules absorb moisture. Small quantities of absorbed moisture in the Arnitel® granules cause degradation during processing. This results in varying molecular weights, leading to a decrease in mechanical performance and to irregular throughput.

Take the following precautions:

- allow material that has been stored in a relatively cold room to adapt slowly to the temperature in the processing room - do not open the packages until the extruder is heated and ready for production
- always feed the entire contents of one or more bags into the hopper and close the hopper tightly immediately
- do not refill the hopper until there is room for the entire contents of a bag
- always try to refill the hopper to the top
- ensure that the hopper is not larger than necessary in order to limit residence time of the material

Drying: For critical extrusion operations such as monofilaments, profiles and vacuum calibrating tubes with small tolerances, drying the granulate in a desiccant dryer to assure a constant moisture level is recommended. The hopper of the dryer should preferably be mounted directly on the extruder. The granules must be dried for at least 3 hours prior to processing at 90°C to 105°C.

In cases where bags have been exposed to the ambient air for long, please follow the chart shown for best results.

Arnitel® grades		Drying conditions	
Base grade	Hardness Shore D	Time (hours)	Temperature (°C)
E	40	10	100
E	46	10	100
E	55	10	110
E	63	8	110
E	74	6	120
P	38	3	120
P	58	6	120

Materials dried in this way will reabsorb moisture quickly during cooling. So, adapt one of the following procedures:

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- Leave the hot, dried granules to cool in a sealed moisture- and air-tight package. After cooling to room temperature, these granules can be processed like Arnitel[®] that has just been delivered

- if sealing equipment is not available, the hot and dry granules should be transferred immediately to the hopper and the lid closed tightly. If the temperature of the granules does not go below 80°C the amount of moisture absorbed will not be excessive. Rapid cooling of the granules can be prevented by insulating the hopper or by using hopper dryer set to 100°C.

Use of regrind: The excellent heat stability of the Arnitel[®] melt permits the use of regrind as long as the material was properly processed during the initial extrusion. Depending on the demands to be met in service, up to 20% regrind can be used. The scrap should be chopped into granules approximately the same size as the original pellets. The regrind must be blended with virgin polymer and dried to ensure uniform quality.

Material Safety: Under normal conditions, Arnitel[®] does not present a toxic hazard through skin contact or inhalation. During processing, contact with the polymer melt and inhalation of the fumes should be avoided. For all safety aspects we refer to our Material Safety Data Sheets, which are available upon request from your local DSM Sales Office

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