

GRILON R 47 HW 10 NATURAL

GRILON XE 3479 NATURAL

Grilon R 47 HW 10 is a flexible, cold impact resistant and heat stabilized polyamide 6 for applications in the extrusion.

The material can be processed on all for polyamides suitable tube-extrusion lines, as well as on rod and profile extrusion equipment.

Grilon R 47 HW 10 was specially developed for the production of small diameter mandrels which are used for the manufacturing of rubber hoses.

GRILON®
EMS

GENERAL PROPERTIES

		Norm	Unit	Status	Grilon R 47 HW 10
Melt temperature	DSC max.	ISO 3146-C	°C	dry	216
Tube-Density		ISO 1181	g/dm ³	dry	1.10
Moisture absorption	23°C/50% r.h.	DIN 53495	%		2 - 3
Water absorption	23°C/sat.	DIN 53495	%		~10

MECHANICAL PROPERTIES

Tensile strength at yield		ISO 527	MPa	dry	34
			MPa	cond.	--
Elongation at yield		ISO 527	%	dry	16
			%	cond.	--
Tensile strength at break	ISO 527	MPa	dry	44	
			MPa	cond.	46
Elongation at break		ISO 527	%	dry	> 50
			%	cond.	> 50
Tensile-E-modulus		ISO 527	MPa	dry	940
			MPa	cond.	430
Shore D hardness		DIN 53505	--	dry	--
			--	cond.	--
Impact strength	(Izod, 23°C)	ISO 179	kJ/m ²	dry	> 100
			kJ/m ²	cond.	no break
Impact strength	(Izod, -30°C)	ISO 179	kJ/m ²	dry	> 100
			kJ/m ²	cond.	> 100
Notched impact strength	(Izod, 23°C)	ISO 179	kJ/m ²	dry	> 120
			kJ/m ²	cond.	no break
Notched impact strength	(Izod, -30°C)	ISO 179	kJ/m ²	dry	9.6
			kJ/m ²	cond.	7.5

THERMAL PROPERTIES

Heat deflection temp.	HDT B (0.46 MPa)	ISO 75/DIN 53461	°C	dry	142
	HDT A (1.82 MPa)	ISO 75/DIN 53461	°C	dry	47
Vicat-Softening point	A (10 N)	DIN 53460	°C	dry	210
	B (50 N)	DIN 53460	°C	dry	159
Coefficient of expansion		DIN 53752	K ⁻¹	dry	12 - 14·10 ⁻⁵
Max. usage temperature	long term	EMS	°C	-	80 - 110
	short term	EMS	°C	-	150

PROCESSING

Storage

Grilon R 47 HW 10 granules are supplied ready for processing in moisture-proof packing. The storage area should be dry. During colder times of the year, the temperature of the granules must be equalised to that of the room before opening the packing. This avoids moisture condensation on the surface of the granules.

Drying / Pre-drying

Grilon R 47 HW 10 takes up moisture from the environment, as is typical for polyamides. If the granulate is left exposed or moistened with water, then the material must be dried before processing. Processing of moist granulate reduces the optical (streaks) and mechanical (embrittlement) qualities of the tubes, profiles and films.

Drying requirements

Device	Temperature	Time
Dry air dryer (dew-point approx. -25 to -40°C)	70°C	4-16h
Vacuum oven	100°C*	4-16h

* Before opening the oven the temperature should be reduced to 70°C.

Over-heating or over-long-drying times can lead to yellowing of the granulate.

Extrusion

Grilon R 47 HW 10 can be processed using commercial 3-Zone screws, suitable for Polyamides screw length: 25D. Compression ratio: 2.5 up to 3 : 1.

By the extrusion of Grilon R 47 HW 10 attention should be paid to a well operating extraction system, especially around the area of the die, due to the escape of volatile particles especially at higher processing temperatures. For further information please refer to the product safety sheet.

Recommended temperature profile:

Hopper zone	:	cooled
First barrel zone	:	220 -230°C
Further barrel zones and flanges	:	235 - 245°C
Head	:	235 - 245°C
Nozzle	:	230 - 240°C

The ideal temperature is 230 - 250°C

The recommendation and data given are based on our experience to date, however, no liability can be assumed in connection with their usage and processing.

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