

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

THERMAL PROPERTIES

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