synthetic fibres and polymers

AQUAFIL s.p.a. synthetic fibres and polymers

via Linfano, n°9 - 38062 Arco (TN) Italy

Technical Data Sheet

Product Description		**Product Code**	
ECONYL ECO 27		**10026965**	
Polyamide 6		Ed./Rev.	2.1
Product descriptors		Em. Date	08/07/2025
Symbol	ISO 1043	PA6	
Description	ISO 1874-1	-PA6, G, 14-020	
		Printed/Validated @	08/07/2025

TYPICAL PROPERTIES (*)	METHOD	CONDITION	UNIT	Reference value	Range of variation (+/-)
PHYSICAL PROPERTIES					
Density	ISO 1183		g/cm3	1,130	0,020
Melt Volume Rate	ISO 1133	250 °C / 2,16 kg	cm3 / 10 min	28	4
Moisture Absorption	ISO 62	23°C, sat.	%	10	1,0
Mold shrinkage (longitudinal)	ISO 2577	72h, 23°c, 50% RH	%	-	
Mold shrinkage (trasversal)	ISO 2577	72h, 23°c, 50% RH	%	-	
Viscosity number	ISO 307	96% H2SO4	cc/g	148	2,0
MECHANICAL PROPERTIES		**after conditioning 24h @ RT, RH 45-55 %**			
Tensile Modulus	ISO 527	1 mm/min	MPa	2215	100
Tensile Strenght	ISO 527	50 mm/min	MPa	70	5
Tensile Stress, yield	ISO 527	50 mm/min	MPa	70	5
Tensile Strain, yield	ISO 527	50 mm/min	%	5	1
Tensile Stress, break	ISO 527	50 mm/min	MPa	d.f. (*)	5
Tensile Strain, break	ISO 527	50 mm/min	%	d.f. (*)	0,5
Flexural Modulus	ISO 178	2 mm/min	MPa	2040	100
Flexural Stress, break / max	ISO 178	2 mm/min	MPa	90	5
Flexural Strain, break / max	ISO 178	2 mm/min	%	> 5	-
IMPACT (**) PROPERTIES		**after conditioning 24h @ RT, RH 45-55 %**			
Charpy 23°C, notched	ISO 179/1eA	+ 23 °C	kJ / m2	8,1	1,0
Charpy 23°C, unnotched	ISO 179/1eU	+ 23 °C	kJ / m2 (**)	> 200	
Charpy -30°C, notched	ISO 179/1eA	- 30 °C	kJ / m2	-	
Charpy -30°C, unnotched	ISO 179/1eU	- 30 °C	kJ / m2	-	
Izod Impact, notched (+23°C)	ISO 180/1A	+ 23 °C	kJ / m2	5,3	1,0
Izod Impact, unnotched (+23°C)	ISO 180/1U	+ 23 °C	kJ / m2 (**)	> 200	
Izod Impact, notched (-30 °C)	ISO 180/1A	- 30 °C	kJ / m2	-	
Izod Impact, unnotched (-30 °C)	ISO 180/1U	- 30 °C	kJ / m2	-	

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TYPICAL PROPERTIES (*)	METHOD	CONDITION	UNIT	Reference value	Range of variation (+/-)
THERMAL PROPERTIES					
Crystallization Temperature	DSC - ISO 11357-1	20 *C/min, 30-300 °C	°C	-	
Melting Temperature	DSC - ISO 11357-1	20 *C/min, 30-300 °C	°C	221	2,5
Heat deflection temperature (HDT-B)	ISO 75	0,45 MPa	°C	-	
Heat deflection temperature (HDT-A)	ISO 75	1,80 Mpa	°C	-	
Vicat softening temperature	ISO 306	50°C/h - 50 N	°C	-	
ELECTRIC PROPERTIES					
Specific trasversal resistivity	IEC 60093		Ohm*cm	-	
Specific surface resistivity	IEC 60093		Ohm	-	
Tracking resistance	IEC 60112	Solution A	V	-	
FIRE BEHAVIOUR					
Flammability	UL 94	0,8 mm	class	-	-
Glow-wire flammability index	IEC 60695-2-12	1 - 3 mm	°C	-	-
Glow-wire ignition temperature	IEC 60695-2-13	1 - 3 mm	°C	0	-
Burning speed (FMVSS)	FMVSS 302		mm/min	-	-
SUGGESTED PROCESSING CONDITIONS(***) - INJECTION MOULDING					
Drying Temperature/time		70-80°C/4-6h		dry air, dew point < -30°C	
Cylinder temperature: Rear		240-260°C			
Cylinder temperature: Middle		240-265°C			
Cylinder temperature: Front-Needle		245-270°C			
Mold/tool temperature		60-90°C			

Remarks

(*): dry as moulded, tested within 24h after exposure @ RT;
where available the conditioned value is shown after the slash
d.f. (*): ductile fracture is occurring, regard the yield point as maximum resistance condition prior to failure;

(**): where percentage is given as the fractional amount of unbroken samples (out of 6 in total)
(***) The following parameters have to be considered as a starting guideline and those shall be refined in the intended application, depending on available injection equipment.

($) It is recommended to dry the material prior to moulding; suggested maximum moisture content is 0,15%
Recommended storing conditions @ ambient temperature (-5:+40 °C), in original closed packaging, kept away from direct water dripping and avoiding prolonged sun exposure. Do not store for more than 6 months.

The technical parameters reported are typical of the product under aforementioned testing conditions but may vary according to particular processing conditions applied in the final product manufacturing.

UNI EN ISO 9001:2008
Certified Quality System

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