

TECHNICAL DATA SHEET

Nylon 6 high cycle and natural color
UBE NYLON 1013NW8

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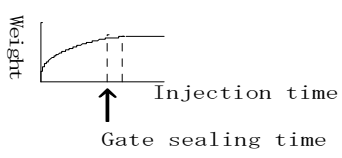
Technical data sheet of 1013NW8

Property	Testing Method	Unit	1013NW8	
	ISO			
Polymer	-	-	PA 6	
Color	-	-	Natural	
Physical Property				
Density	1183	g/cm ³	1.14	
Mechanical Property				
Tensile Strength at yield	527-1,2	MPa	85	
Nominal tensile strain at break		%	20	
Tensile Modulus		GPa	3.2	
Flexural Strength	178	MPa	110	
Flexural Modulus		GPa	2.7	
Charpy Impact Strength (A Notched)	179-1	KJ/m ²	5	
Temperature of Deflection Under Load	0.45 MPa	75-1,2	°C	175
	1.8 MPa			65
Molding Property				
Mold Shrinkage	MD	UBE Method	%	1.2
	TD			1.3
Electrical Property				
Electric Strength	IEC 60243-1	kV/mm	20	
Coef. of linear thermal expansion	11359-2	X 10 ⁻⁵ /°C	8	
Arc resistance	ASTM	S	119	
Comparative Tracking Index	UL 746A	-	0	
Relative Permittivity	IEC 60250	-	3.5	
Flammability class	UL94	mm	V2 /t = 0.66 mm	

Remark ; • 1 kgf/cm² = 0.0981 MPa

- The presented values in the tables are averaged data which derived from several individual measurements and are not guaranteed.
- 1013NW8 is Thailand origin

Guideline injection condition for 1013NW8

Item	Unit	Condition	Point of view		
Cylinder Temp.	N H	°C	250~255°C	Melting point of PA6 is 215~225°C, but cylinder temp should be elevated 245°C or higher because the whole crystalline parts melt perfectly. If the temp is set at around melting point, polymer can't be plasticized enough, and that may become causes of bad surface finish and poor material performance. .But setting too high, polymer may decompose.	
	H ₄	°C	250~255°C		
	H ₃	°C	250~255°C		
	H ₂	°C	250~255°C		
	H ₁	°C	220~230 °C		
	Injection pressure (Primary pressure)	%	99% (Max)		Injection pressure. depends on injection rate. Setting 99% (MAX), injection rate can be varied in wide range.
Pressure	1 st hold pressure	M P a	60	5 sec	Physical properties of product depend on 1st hold pressure. However excessive hold pressure yields a residual stress as the result of insufficient relaxation of internal strain. Hold pressure is de-escalated. Time of hold pressure is set just longer than gate sealing time. We can know the gate sealing time by measuring weight of product that have various hold pressure time.(see Figure) 
	2 nd hold pressure	M P a	40	4 sec	
	3 rd hold pressure	M P a	30	3 sec	
	Back pressure	M P a	5~10		
V→P change screw position	mm	10~15	VP change position is that at which priority of control changes from screw velocity to pressure. If the position is too forward(near to front-end of cylinder), I.P. may reach the maximum pressure of the machine and flash occurs. On the contrary, setting too backward is likely to yield bad surface finish.		
Injection rate	V ₁ ~V _n	%	Faster	In order to get good surface finish, injection speed is desirable to be set as faster as possible within no flush appears.	
	V _H (at Hold)	%	20	In holding process, the injection machine control pressure preferential. So screw speed doesn't reach set value in general.	
Mold temp.	°C	50~80°C	The ideal mold temp is 80°C for better physical properties and better appearance of molding product.		
Cooling time	s e c	10~15	t = 3mm	The molding product is desirable taking out after the molding product enough cool.	
		15~20	T = 6mm		
Screw revolution	r p m	100~120	This value is for an injection machine which has a screw of 36 diameter.		
Cushion stroke	mm	5~10	In order to apply an adequate pressure to cavity. Cushion stroke of 5~10mm and check-ring without abrasion are required. When the ring is abraded, back flow of material occurs and it is difficult to apply an adequate pressure. Check-ring is likely to be abraded, so periodic renewal is desirable.		
Measuring	%	50~70	Measuring stroke is desirable 50~70% of full stroke of the injection machine.		

Guideline for pre-drying Nylon

Nylons are basically water absorptive polymers. Moisture content affects to molding process and material property. The moisture content should be less than 0.15 % to avoid problem which would come from moisture effect (If possible the desirable moisture content less than 0.1 %.).

- The most desirable drying process is the vacuum or dehumidified dryer
- Drying condition for Natural color (Dehumidifier type)
 - 1) Drying temperature : 80~95°C
 - 2) Drying time : 2- 4 hrs
- Drying condition for Back color (Dehumidifier type)
 - 1) Drying temperature : 90~95°C
 - 2) Drying time : 2- 4 hrs

Remark:

*The contents of these written materials were prepared based on materials, information, and data available at the present time ; they may be revised according to new information.

*The numerical data described in these materials are average values obtained by measurement under prescribed conditions ; they are not guaranteed values.

*UBE dose not guarantee the quality or safety to your company's finished product even if UBE's materials and the data described in these written materials or data prepared by other companies are used to manufacture the finished product. Determination of the suitability of the finished product shall be responsibility of your company.

*Specific applications may be subjected to standards and regulations , commercial proprietary rights,etc.,so these should be fully researched and studied by your company.

*please read the "Material Safety Data Sheet MSDS" before using a UBE product.