


Akulon® F223-D

PA6

Envalior

Product Texts

Low/Medium Viscosity, General purpose, Injection Molding, Food Contact Quality

ISO 1043 PA6

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	44 / *	cm³/10min	ISO 1133
Temperature	260 / *	°C	-
Load	2.16 / *	kg	-
Molding shrinkage, parallel	1.1 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.1 / *	%	ISO 294-4, 2577
Mechanical properties			
ISO Data			
Tensile Modulus	3200 / 1000	MPa	ISO 527
Yield stress	87 / 45	MPa	ISO 527
Yield strain	4 / 25	%	ISO 527
Nominal strain at break	20 / >50	%	ISO 527
Charpy impact strength, +23°C	N / N	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	N / N	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	4.5 / 35	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	2.5 / 5	kJ/m²	ISO 179/1eA
Thermal properties			
ISO Data			
Melting temperature, 10°C/min	220 / *	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.80 MPa	60 / *	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	150 / *	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	195 / *	°C	ISO 306
Coeff. of linear therm. expansion, parallel	90 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	90 / *	E-6/K	ISO 11359-1/-2
Burning behav. at 1.5 mm nom. thickn.	V-2 / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	-
Yellow Card available	yes / *	-	-
Burning behav. at thickness h	V-2 / *	class	IEC 60695-11-10
Thickness tested	3.0 / *	mm	-
Yellow Card available	yes / *	-	-
Oxygen index	26 / *	%	ISO 4589-1/-2
Electrical properties			
ISO Data			
Relative permittivity, 100Hz	3.2 / 14	-	IEC 62631-2-1
Relative permittivity, 1MHz	3 / 4.5	-	IEC 62631-2-1
Dissipation factor, 100Hz	50 / 3000	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	150 / 1200	E-4	IEC 62631-2-1
Volume resistivity	1E13 / 1E10	Ohm*m	IEC 62631-3-1
Surface resistivity	* / 1E14	Ohm	IEC 62631-3-2
Electric strength	28 / 20	kV/mm	IEC 60243-1
Comparative tracking index	- / 600	-	IEC 60112
Other properties			
ISO Data			

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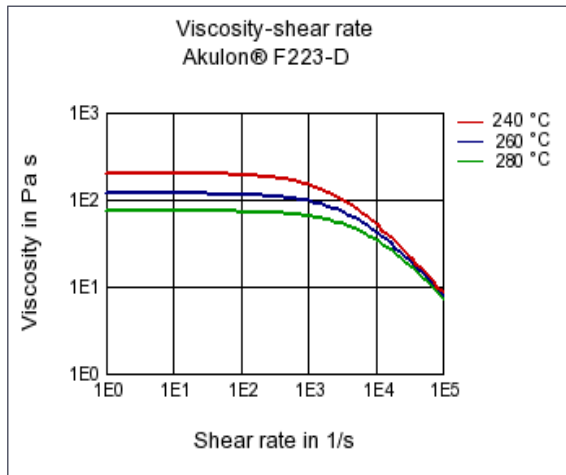
Water absorption	10 / *	%	Sim. to ISO 62
Humidity absorption	2.8 / *	%	Sim. to ISO 62
Density	1130 / -	kg/m³	ISO 1183

Material specific properties	dry / cond	Unit	Test Standard
ISO Data			
Viscosity number	132 / *	cm³/g	ISO 307, 1157, 1628

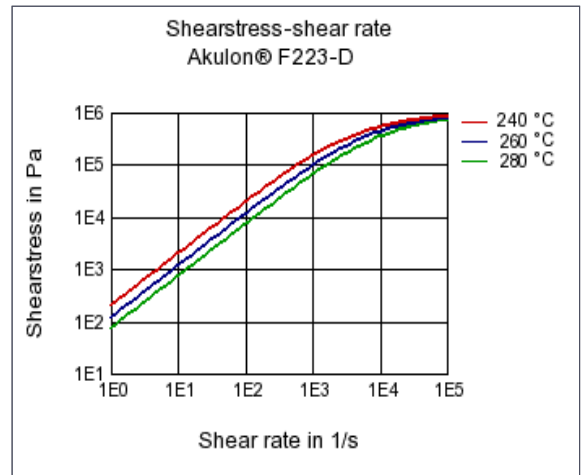
Rheological calculation properties	Value	Unit	Test Standard
ISO Data			
Density of melt	960	kg/m³	-
Thermal conductivity of melt	0.23	W/(m K)	-
Spec. heat capacity of melt	2680	J/(kg K)	-
Eff. thermal diffusivity	8.82E-8	m²/s	-

Diagrams

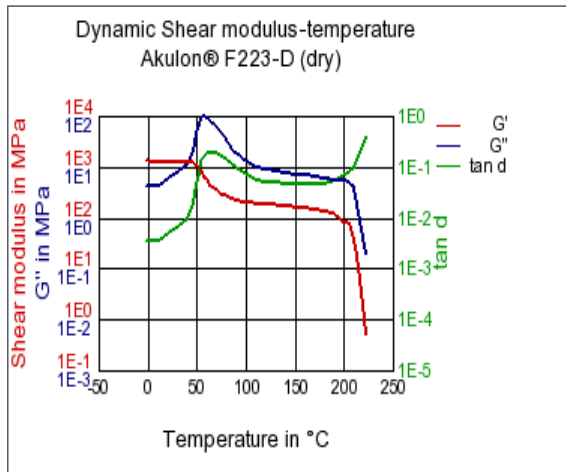
Viscosity-shear rate



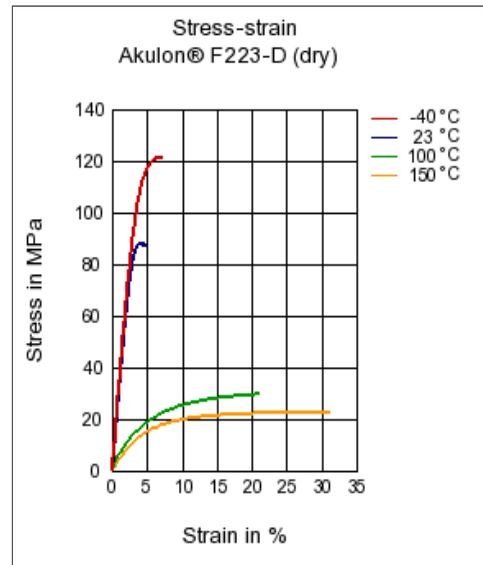
Shearstress-shear rate



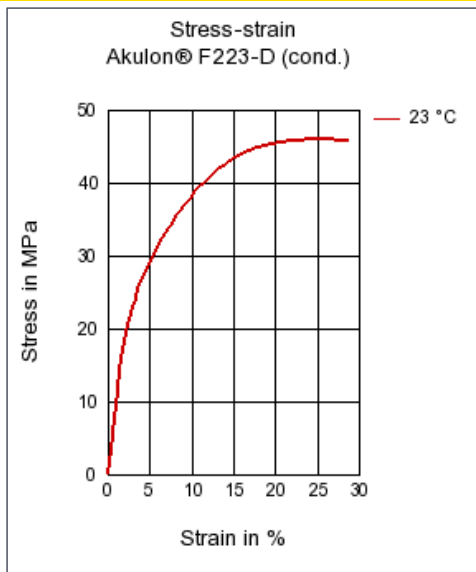
Dynamic Shear modulus-temperature



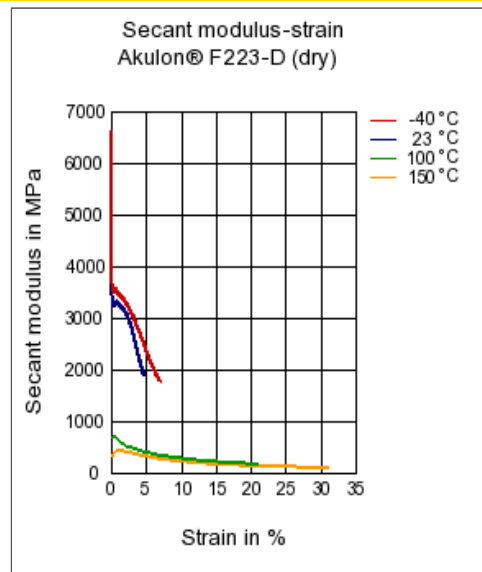
Stress-strain



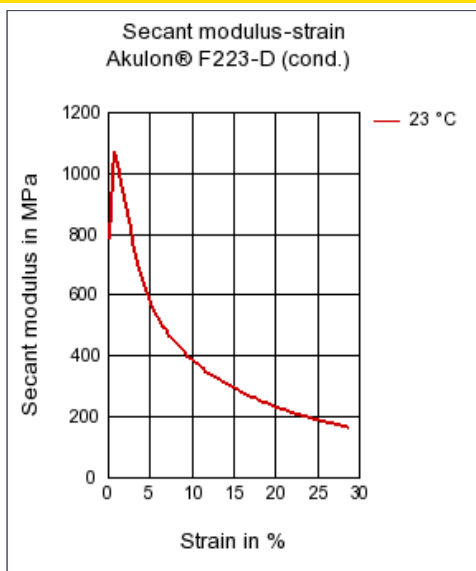
Stress-strain



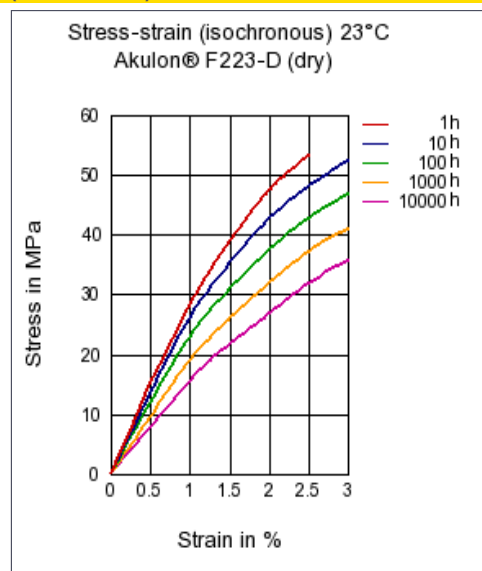
Secant modulus-strain



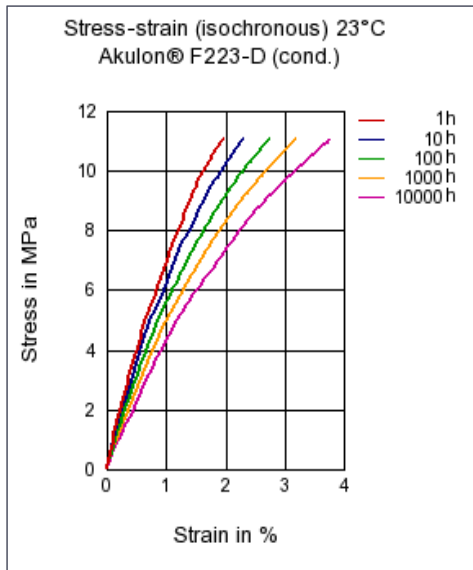
Secant modulus-strain



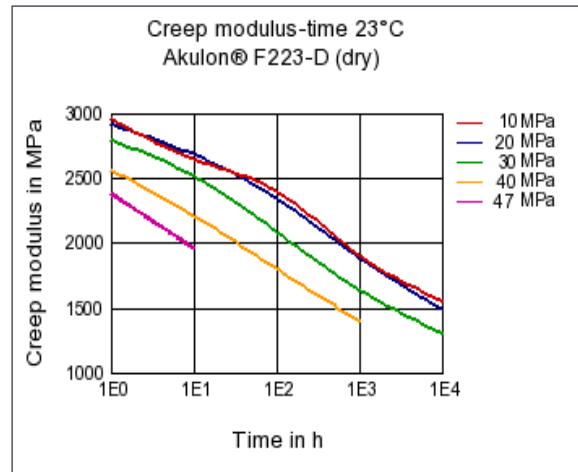
Stress-strain (isochronous) 23 °C



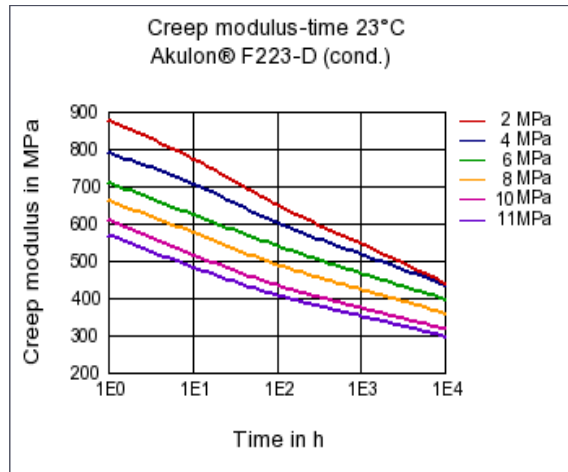
Stress-strain (isochronous) 23°C



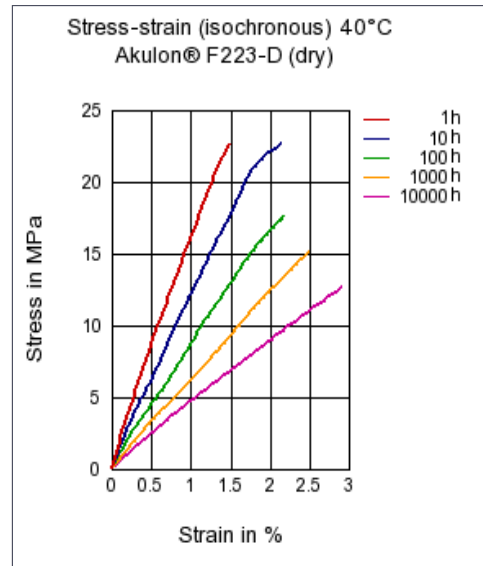
Creep modulus-time 23°C



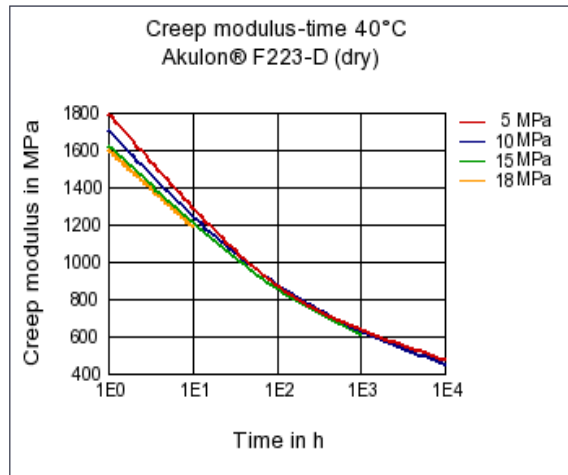
Creep modulus-time 23°C



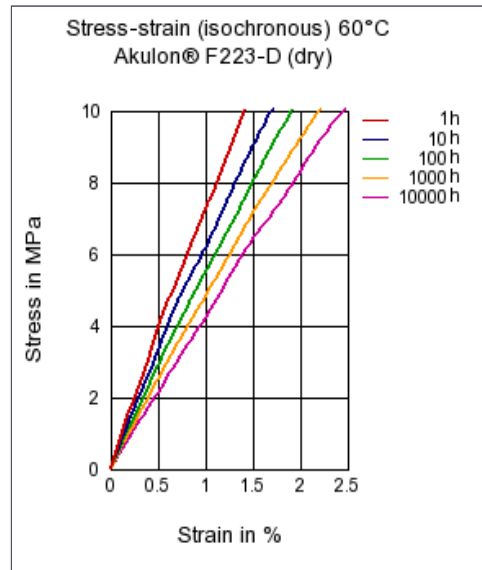
Stress-strain (isochronous) 40°C



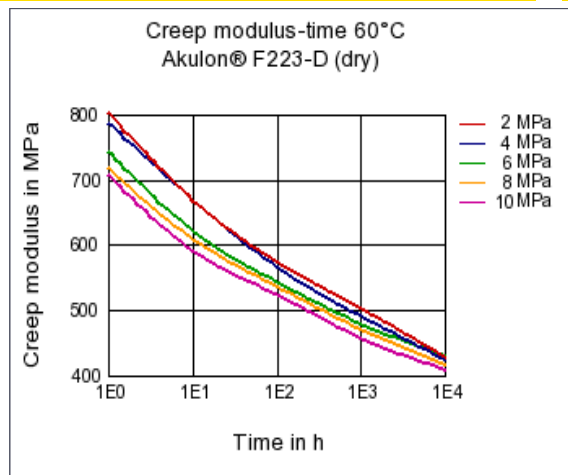
Creep modulus-time 40 °C



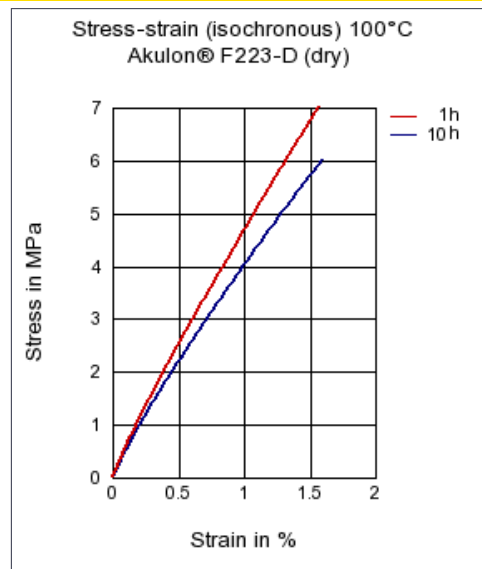
Stress-strain (isochronous) 60 °C



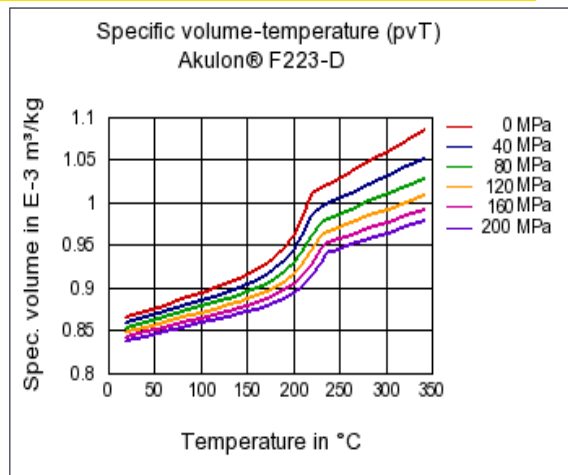
Creep modulus-time 60 °C



Stress-strain (isochronous) 100 °C



Specific volume-temperature (pvT)



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Characteristics	
Processing	Additives
Injection Molding	Release agent
Delivery form	Applications
Pellets	General Purpose
Other text information	
Injection Molding	
Injection Molding Recommendations Steel recommendations for molds screws and barrels Trouble shooting guideline for injection molding	
Chemical Media Resistance	
Alcohols	
☺	Methanol (23°C)
☺	Ethanol (23°C)
Hydrocarbons	
☺	Toluene (23°C)
Ketones	
☺	Acetone (23°C)
Ethers	
☺	Diethyl ether (23°C)
Other	
☺	Ethyl Acetate (23°C)
☺	Water (23°C)