

Technical data sheet

Polimix[®] 740N

Version: October 2015

Chemical composition

Polymeric plasticizer based on adipic acid and polyhydric alcohols

Specifications

Characteristics	Unit	Value	Test method	
Density at 25°C	g/ml	1.070 - 1.090	GM 012	ASTM D 4052-96
Refractive index n ²⁰ _D		1.465 - 1.475	GM 020	ASTM D 1045-95
Colour	Pt – Co	200 max.	PL02F	ASTM D 1045-95 ASTM D 1209-00
Acidity	mgKOH/g	2.0 max.	PL02C	ASTM D 1045-95
Viscosity at 25°C	mPa·s	6800 - 8300	GM 022	ASTM D 445-96

Polimix[®] 740N is a pale yellow liquid, anhydrous with a low odour and free from matter in suspension. It is soluble with common organic solvents, practically insoluble in water and miscible and compatible with most of the monomeric plasticizers usually utilized to soften PVC (it is good laboratory practice to make a preliminary compatibility test in the specific PVC compound being considered).

The product **Polimix[®] 740N** due to its nature does not have a shelf life. However it can be stored in appropriate containers at a temperature of approximately 25 °C and the exclusion of humidity for at least 1 year, without losing its chemical properties.

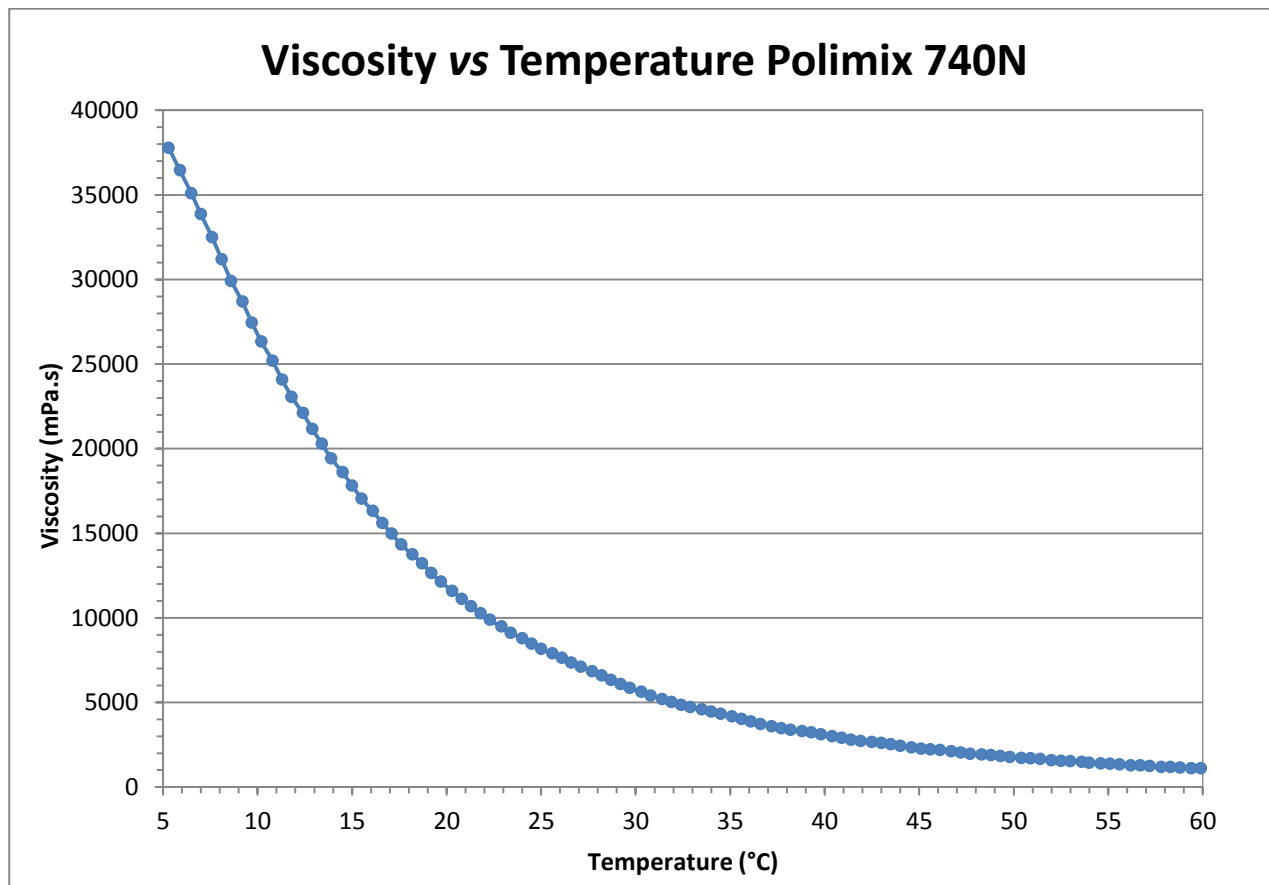
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Liquid properties



The above figures are typical values and should not be considered as specifications limits. For further information on the characteristics and properties of **Polimix® 740N** in the liquid state, see the relevant EC-standard Materials Safety Data Sheet.

Characteristics and applications

Polimix® 740N is a high viscosity polymeric plasticizer which facilitates the formulation of PVC compounds with excellent resistance to extraction by oils, fats and hydrocarbons, low volatility, a minimum tendency to migrate in contact with other thermoplastic materials and a good permanency even under high humidity conditions.

Polimix® 740N can be used alone or as blend with monomeric plasticizers in a wide range of applications such as:

- oil resistant cables;
- gaskets and profiles for various applications;
- labels and adhesive sheets for advertisement graphics, furnishings, tapes for electrical uses;
- oil and petrol hoses;
- conveyor belts;
- low migrating cables.

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General properties in PVC compounds

The properties of **Polimix® 740N** were evaluated in comparison with those of **DIPLAST® NS (DINP)** (Diisononyl phthalate) using the following formulations:

	PVC K70	Plasticizer	Ca/Zn	Stearic acid	Calcium stearate
Formulation 1 parts by weight	100	50	1.2	0.3	--
Formulation 2 parts by weight	100	47	8	15	0.5

The specimens were prepared by calendaring and moulding to obtain the thickness required for the different test methods.

Results with formulation 1

	Test method	Polimix® 740N	DIPLAST® NS
Shore "A" hardness (15")	ISO 868	85.5	82
Cold flex °C (Clash & Berg)	ISO/R 458	-5.5	-26
Solution Temperature °C (*)	DIN 53408	138	129
Extraction resistance	ISO 175		
% weight loss (48h at 70°C)			
• Water		-0.26	-0.1
• Aqueous soap 1%		-1.28	-0.7
• Olive oil		-2.23	-6.8
• Mineral oil		-0.92	-5.5
• n-Hexane (24hours at 23°C)		-0.36	-27.6
Volatility	ISO 176	-1.31	-6.1
% weight loss (7days at 100°C)			
Rheological properties			
• Dryblending time 83°C (°C) (Mixer P-600 : 100 RPM)	Brabender Plasticorder	3'12"	3'45"
• Gel time 88°C (°C) (Mixer W-50 : 40 rpm, 48 g)	Brabender Plasticorder	5'20"	9'20"
• Fusion temperature (°C) (Mixer W-50 : 5°C/min, 40rpm)	Brabender Plasticorder	121,3	117

(*) Solution temperature determined with dispersion of resin: two grams of PVC are placed in 48 grams of plasticizer and the solution is heated at 1°C/min.

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Results with formulation 2

	Test method	Polimix® 740N	DIPLAST® NS
Migration resistance (15days at 70°C)			
ABS corrosion degree	ISO 177	1	1
ABS % weight loss		-0.01	-0.01
SAN corrosion degree		1	1-2
SAN % weight loss		-0.01	-0.1
PS corrosion degree		1	3
PS %weight loss		-0.01	-3.81
Resistance to mineral oil (After 7days at 90°C in ASTM N°2 oil)	VDE 0472 cap. 803		
Tensile strength MPa original specimens		24	21.2
Variation %		-4.2	-7.10
Elongation at break % original specimens		307	281
Variation %		-4.60	-36.7
Modulus 100% original specimens		14.1	12.5
Variation %		-8.8	58.4
Weight loss mg/cm ²		-1.41	-8.92
Volume resistivity at 23°C (Ohm·cm)	ASTM D 257	8.1·10 ¹²	3.7·10 ¹²

The information contained here is correct and accurate and is based on our technical and scientific knowledge at the date of going to press.

Such information is, in all cases, relevant only with respect to the product as used in its pure state and only for the uses referred to in this publication.

Nothing stated here may be taken or construed as implying a breach of existing patents.

No warranty, either expressed or implicit, is given with regard to the results to be obtained from using this information.

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