

Technical data sheet

Polimix[®] 200/ST

Version: April 2016

Chemical composition Polymeric plasticizer based on adipic and polyhydric alcohols

Specifications

Characteristics	Unit	Value	Test method	
Density at 25°C	g/ml	1.070 - 1.100	GM 012	ASTM D 4052-96
Refractive index n ²⁰ _D		1.462 - 1.466	GM 020	ASTM D 1045-95
Colour	Pt – Co	100 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	1700 - 2500	GM 022	ASTM D 445-96

Polimix[®] 200/ST 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 soften PVC (it is good laboratory practice to make a preliminary compatibility test in the specific PVC compound being considered).

Polimix[®] 200/ST contains antioxidant. (0.3%) (CAS N°: 2082-79-3)

The product **Polimix[®] 200/ST** 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.

Liquid properties

Temperature (°C)	Density (g/ml)	Viscosity (mPa·s)
15	1.1013	4555
25	1.0898	2050
40	1.0744	695
60	1.0531	245

The above figures are typical values and should not be considered as specifications limits.

For further information on the characteristics and properties of **Polimix[®] 200/ST** in the liquid state, see the relevant EC-standard Materials Safety Data Sheet.

Characteristics and benefits

Polimix[®] 200/ST, being a low viscosity polymeric plasticizer, offers to users and compounders interesting processing characteristics.

Permanence, low volatility, extraction resistance by oils, fats and hydrocarbons, low tendency to migrate are the main properties of the PVC articles produced with **Polimix[®] 200/ST**.

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Polimix® 200/ST can be used alone or as a blend with monomeric plasticizers in a wide range of applications such as:

- electrical cables resistant to mineral oils;
- adhesive labels;
- electrical adhesive tapes;
- safety footwear resistant to fats and hydrocarbons;
- hydrocarbons resistant tubes;
- gloves and other protective garments;
- conveyor belts;
- imitation leather for clothing.

General properties in PVC compound

The properties of **Polimix® 200/ST** were evaluated in comparison with those of **DIPLAST® NS** (DINP; diisononylphthalate) using the following formulations.

Formulation 1	PVC K70	Plasticizer	Ca/Zn	Stearic acid
(parts by weight) phr	100	50	1.2	0.3

Formulation 2	PVC K70	Plasticizer	Ca/Zn	CaCO ₃	Ca Stearate
(parts by weight) phr	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 formulation 2

	Test method	Polimix® 200/ST	DIPLAST® NS
Migration resistance (15days at 70°C)	ISO 177		
ABS corrosion degree		1	1
ABS % weight loss		-0.01	-0.01
SAN corrosion degree		2	1/2
SAN % weight loss		-0.07	-0.10
PS corrosion degree		0/1	3
PS %weight loss		-0.00	-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		23.8	21.2
Variation %		-9.7	-7.10
Elongation at break % original specimens		294	281
Variation %		-14	-36.7
Modulus 100% original specimens		15.5	12.5
Variation %		18	58.4
Weight loss mg/cm ²		-3.93	-8.92

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Results formulation 1

	Test method	Polimix® 200/ST	DIPLAST® NS
Shore “A” hardness	ISO 868	87.5	82
Cold flex °C (Clash & Berg)	ISO/R 458	-9	-26
Solution Temperature °C (*)	DIN 53408	153.5	129
Extraction resistance -% weight loss-(48h at 70°C)	ISO 175		
• Water		-0.6	-0.1
• Aqueous soap 1%		-2.4	-0.7
• Olive oil		-3.2	-6.8
• Mineral oil		-2.1	-5.5
• n-Hexane (24hours at 23°C)		-0.6	-27.6
Volatility (7days at 100°C)	ISO 176	-2.1	-6.1
Rheological properties			
• Dryblending time 83°C (°C) (Mixer P-600 : 100 RPM)	Brabender Plasticorder	3'40"	3'45"
• Gel time 88°C (°C) (Mixer W-50; 40 rpm 48g)	Brabender Plasticorder	9' 20"	9'20"
• Fusion Temperature (°C) (Mixer W50, 5°C/min, 40rpm)	Brabender Plasticorder	122.8	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.

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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