

Technical data sheet

Polimix® 850F

Version: November 2013

Chemical composition

Polyester plasticizer based on adipic acid and polyhydric alcohols

Specifications

Characteristics	Unit	Value	Test method	
Density at 25°C	g/ml	1.110 - 1.130	GM012	ASTM D 4052-96
Refractive index n_D^{20}		1.465 - 1.470	GM020	ASTM D 1045-95
Colour	Pt - Co	150 max.	PL02F	ASTM D 1045-95 ASTM D 1209-00
Acidity	mgKOH/g	2.5 max.	PL02C	ASTM D 1045-95
Viscosity at 25°C	mPa.s	7500 - 9500	GM022	ASTM D 445-96

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

Polimix® 850F is a pale yellow limpid 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® 850F** 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.

For further information on the characteristics and properties of **Polimix® 850F** the liquid state, see the relevant EC-standard Materials Safety Data Sheet.

With reference to the Commission Regulation (EU) N° 10/2011 of 14 January 2011 on plastic materials and articles intended to come into contact with food, **Polimix® 850F** is a polymeric substance, whose chemical composition satisfies the definition written in Annex I, table 1, column (4) of the Regulation (EU) N° 10/2011, REF N° 76866, FCM substance N° 73.

The above mentioned polymeric substance can be used as additive or aid to polymerisation with the following Group Restrictions (Annex I, Table 2):

31 (FCM: 73; 797). SML (T) 30 mg/Kg expressed as the sum of the substances

32 (FCM: 8; 72; 73; 138; 140; 157; 159; 207; 242; 283; 532; 670; 728; 729; 775; 783; 797; 798; 810; 815). SML(T) 60 mg/Kg expressed as the sum of the substances.

Fat (Consumption) Reduction Factor (FRF) is applicable.

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Liquid properties

Temperature (°C)	Viscosity (mPa·s)
10	37100
25	8740
30	5700
40	2750
60	890

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

Characteristics and applications

Polimix® 850F, being a medium 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® 850F**.

Polimix® 850F 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;
- hydrocarbon resistant tubes;
- gloves and other protective garments;
- conveyor belts;
- leathercloth.

General properties in PVC compounds

The properties of **Polimix® 850F** were evaluated in comparison with those of **DINP (diisononylphthalate)** using the following formulation:

Formulation	(parts by weight)
PVC K70	100
Plasticizer	50
Ba/Zn	2
Stearic acid	0.3

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

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Results

	Test method	Polimix® 850F	DINP
Shore "A" hardness	ISO 868	90.5	82
Cold flex °C (Clash & Berg)	ISO/R 458	-2	-26
Solution Temperature °C (*)	DIN 53408	158	125
Extraction resistance -% weight loss- (48 hours at 70°C)	ISO 175		
• Water		-0.34	-0.17
• Aqueous soap 1%		-1.29	+0.74
• Olive oil		-1.67	-7.0
• Mineral oil		-0.79	-5.5
• n-Hexane (24hours at 23°C)		-0.47	-28
• Volatility (7days at 100°C)	ISO 176	-1.32	-9.1
Rheological properties (**)			
• Dryblending time (Mixer P-600 : 100 RPM)	Brabender Plasticorder	3' 18"	3'52"
• Gel time (at max torque) (Mixer W-50 : 50 RPM)	Brabender Plasticorder	11'50"	9'06"

(*) 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. (**)Temp. Stock Dryblending time : 90°C Gel Time: 110°C

Weight in loss 10 days at 40°C in contact with food simulants (specimen thickness =0,35mm)

The properties of Polimix® 850F were evaluated using the following formulation:

Formulation	(parts by weight)
PVC K70	100
Plasticizer	50
Ca/Zn	1,2
Stearic acid	0,3

Results

	Weight in loss %
• Water 100%	-0.48
• Acetic acid 3% (water solution)	-0.50
• Ethanol 10% (water solution)	-0.50
• Olive oil	-2.18
• Ethanol 50% (water solution)	-4.9

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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