

## Technical data sheet

# Uraplast<sup>®</sup> RA 19

Version: May 2015

### Chemical composition

Polyester plasticizer based on adipic acid and polyhydric alcohols

### Specifications

Characteristics	Unit	Value	Test method
Density at 23°C	g/ml	1.075 – 1.095	GM 012 ASTM D 4052-96
Refractive index $n_D^{20}$		1.466 – 1.470	GM 020 ASTM D 1045-95
Colour	Pt - Co	150 max.	PL02F ASTM D 1045-95 ASTM D 1209-00
Acidity	mgKOH/g	1.0 max	PL02C ASTM D 1045-95
Viscosity at 23°C	mPa·s	3500 - 4500	GM 022 ASTM D 445-96

**Uraplast<sup>®</sup> RA 19** 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 **Uraplast<sup>®</sup> RA 19** 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)	Viscosity (mPa·s)
10	6550
20	4620
25	3100
40	1160
60	420

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

For further information on the characteristics and properties of **Uraplast<sup>®</sup> RA 19** in the liquid state, see the relevant EC-standard Materials Safety Data Sheet.

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## General properties in PVC compounds

The properties of **Uraplast® RA 19** were evaluated in comparison with those of **DIPLAST® N (DINP)** using the following formulation:

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

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

## Results

	Test method	Uraplast® RA 19	DIPLAST® NS
<b>Shore "A" hardness</b>	ISO 868	88	80
<b>Cold flex °C (Clash &amp; Berg)</b>	ISO/R 458	-9	-26
<b>Extraction resistance</b> -% weight loss- (48 hours at 70°C)	ISO 175		
• Water		-0.4	-0.1
• Aqueous soap 1%		-2.2	-0.7
• Olive oil		-3.2	-6.8
• Mineral oil		-1.9	-5.5
• n-Hexane (24hours at 23°C)		-0.7	-27.6
<b>Volatility</b> (7days at 100°C)	ISO 176	-1.6	-6.1
<b>Rheological properties</b>			
• Dryblending time 83°C (Mixer P-600 : 100 RPM )	Brabender Plasticorder	3'54"	3' 45"
• Gel time 88°C (at max torque) (Mixer W-50 : 40 RPM )	Brabender Plasticorder	11'34"	9'20"
• Fusion Temperature °C (Mixer W-50, 5°C/min, 40Rpm)	Brabender Plasticorder	129,5	117

*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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