

Technical Data Sheet

Last Reviewed: April 2019

WATER-SOLUBLE BAGS

The film is based on polyvinyl alcohol, and it is formulated in such a manner to make it rapidly soluble in hot water. The basic polymer has a good resistance to slightly acid or alkaline products, which makes it suitable to contain clothing meant for household or industrial washing.

Physical and mechanical resistance properties (ISO 527-3, film thickness: 20 µm; 23±2 °C; 40±5 %RH)

Density	1.25 ± 0.1 g/cm ³
Tensile strength (longitudinal)	55 ± 20 (MPa)
Tensile strength (transversal)	35 ± 15 (MPa)
Elongation at break (longitudinal)	75 ± 20 (%)
Elongation at break (transversal)	110 ± 50 (%)
Module (longitudinal)	300 ± 70 (MPa)
Module (transversal)	280 ± 70 (MPa)

Equilibrium moisture content

At 35 % R.H.	~6.0%
At 50 % R.H.	~10.0%
At 75 % R.H.	~15.0%

Solubility (Thickness: 20 µm)

	Disintegration (sec.)	Dissolution (sec.)
40°C Distilled Water ^a	< 3	< 600

Standard dimensions and tolerances

Standard dimensions	Tolerances	
	min.	max.
15 × 30 cm; 20 µm	14,5 × 28,5 cm; 17 µm	15,5 × 31,5 cm; 23 µm
20 × 30 cm; 20 µm	19,4 × 28,5 cm; 17 µm	20,6 × 31,5 cm; 23 µm
30 × 40 cm; 20 µm	29,1 × 38,0 cm; 17 µm	30,9 × 42,0 cm; 23 µm
40 × 50 cm; 20 µm	38,8 × 47,5 cm; 17 µm	41,2 × 52,5 cm; 23 µm
50 × 60 cm; 20 µm	48,5 × 57,0 cm; 17 µm	51,5 × 63,0 cm; 23 µm
50 × 70 cm; 20 µm	48,5 × 66,5 cm; 17 µm	51,5 × 73,5 cm; 23 µm
60 × 80 cm; 20 µm	58,2 × 76,0 cm; 17 µm	61,8 × 84,0 cm; 23 µm
60 × 90 cm; 20 µm	58,2 × 85,5 cm; 17 µm	61,8 × 94,5 cm; 23 µm
66 × 84 cm; 20 µm	64,0 × 79,8 cm; 17 µm	68,0 × 88,2 cm; 23 µm
70 × 110 cm; 20 µm	67,9 × 104,5 cm; 17 µm	72,1 × 115,5 cm; 23 µm



where **sustainability** matters

Storage instructions

Polyvinyl products must be stored in dry, ventilated places where the temperature is kept between 10°C and 30°C and the relative humidity is kept between 30% and 50%. Temperature and humidity variations should be minimized in order to prevent shrinkage/deformation; the products must not get in contact with water or wet items as well as with any dissolving or reacting substance. The supplied product packaging should be kept intact until use and the products must be used within 6 months from the delivery date.

Permeability to vapours and gases

Polyvinyl film is permeable to water vapour and performs a good barrier effect to other components at vapour stage (hydrocarbon solvents) and to gases such as nitrogen and oxygen.

Film Weldability

Polyvinyl film has thermoplastic characteristics, and can be welded using a welding bar at a 180-200 °C.

Ink printing

Polyvinyl film, given its polar nature due to the presence of hydroxyl groups in its structural units, is suitable to printing with inks based on polar diluents.

The film does not need any surface treatment (plasma, corona, etc) to guarantee adherence and resistance of printing inks applied with the ordinary printing techniques, among which the flexographic one appears to be the most appropriate technique.

Analytical Specifications

The following table lists several analytical specifications relative to the hydrosoluble Polyvinyl film.

Specification		Test method	Value	Unit
Content of metals/semimetals: (distilled water solution at 1 g/L)	Hg	UNI EN 13657:2004 + UNI EN ISO 17294-2:2005	$< 10^{-4}$	mg/L
	Pb	UNI EN 13657:2004 + UNI EN ISO 17294-2:2005	$< 10^{-3}$	mg/L
	Cd	UNI EN 13657:2004 + UNI EN ISO 17294-2:2005	$< 10^{-3}$	mg/L
	As	UNI EN 13657:2004 + UNI EN ISO 17294-2:2005	$< 10^{-3}$	mg/L
	Ni	UNI EN 13657:2004 + UNI EN ISO 17294-2:2005	$< 10^{-2}$	mg/L
Organic contaminants: (distilled water solution at 1 g/L)	Methanol	EPA 3550C 2007 + EPA 8015D 2003	$< 10^{-3}$	mg/L
	Methylacetate	EPA 3550C 2007 + EPA 8015D 2003	$< 10^{-2}$	mg/L
	Diethylenglicol	EPA 3550C 2007 + EPA 8015D 2003	$< 10^{-3}$	mg/L
	Acetaldehyde	EPA 8315A 1996	$< 10^{-3}$	mg/L
	Formaldehyde	EPA 8315A 1996	$< 10^{-2}$	mg/L
	Benzene	EPA 5021A 2003 + EPA 8260C 2006	$< 10^{-4}$	mg/L
	Ethylbenzene	EPA 5021A 2003 + EPA 8260C 2006	$< 10^{-4}$	mg/L
	Toluene	EPA 5021A 2003 + EPA 8260C 2006	$< 10^{-4}$	mg/L
	Xylenes	EPA 5021A 2003 + EPA 8260C 2006	$< 10^{-4}$	mg/L

Important notes

The indications herein contained are given in good faith, and they reflect the current state of our knowledge. Therefore, they do not exempt our Customers from performing their own entry tests. We reserve ourselves the right to amend the characteristic data of the products as a result of any technical progress and/or production developments. Such indications are not to be considered as a guarantee for specific properties in the final conditions of use. In normal conditions, the material does not show any propensity to accumulating electrostatic charges. The manufacturer can be consulted regarding applicability of the product for particular uses.

Invoice & postal address

Svarvaregatan 11
S-341 34 LJUNGBY

Stockholm branch

Kraftvägen 50
S-196 37 KUNGSÄNGEN

Ljungby branch

Svarvaregatan 11
S-341 34 LJUNGBY

Phone +46 8 36 86 50

order@npaplast.se
www.npaplast.se

Org.no. 556976-8236

VAT no. SE556976823601
Bankgiro 557-8240