



NOVACRYL™ PS-P 180

Permanent pressure sensitive adhesive for specialty film applications

NovaCryl PS-P 180 aqueous acrylic polymer adhesive is designed for excellent water and humidity resistance. It can be used for clear film label and graphic applications, low temperature (-20°C) labels and over laminates and protective films. NovaCryl PS-P 180 has very good finger tack and adhesion.

Enhancement of these properties may be achieved with a variety of tackifiers in the form of dispersions. NovaCryl PS-P 180 is compatible with hydrocarbon, rosin ester, hydrogenated rosin ester tackifiers and their blends.

TYPICAL PROPERTIES

PHYSICAL PROPERTIES

Type	Acrylic emulsion
Solids	47–49%
pH	7–8
Brookfield Viscosity	100–400 cps (LVT #3 spindle at 30 rpm, 25°C)
Surface Tension	43 dyn/cm
Glass Transition Temperature	-50°C
Average Particle Size	Average

CHEMICAL/MECHANICAL PROPERTIES

Mechanical Stability	Excellent
Multivalent Ion Stability	Anionic

NOVACRYL PS-P 180 ADVANTAGE

- Excellent humidity and water resistance
- Improved water whitening resistance in clear film label applications
- Excellent adhesion on polyolefin surfaces
- High finger tack
- UV stable, non-yellowing and good clarity
- Balance of peel, tack and shear resistance
- Free of Alkyl Phenol Ethoxylate (APE) type surfactants

ADHESION PERFORMANCE

Adhesion Test	Type	Failure Mode	Typical Adhesion Performance*		
			(oz/in)	(lbs/in)	(N/25 mm)
180° peel on Stainless Steel (SS)	30 min.	A/C	75.2	4.7	20.9
	24 hr.	C	81.6	5.1	22.7
180° peel on HDPE	30 min.	A	14.4	0.9	4.0
	24 hr.	A	24.0	1.5	6.7
Loop Tack on SS	1" x 1"	A	48.0	3.0	13.4
Loop Tack on HDPE	1" x 1"	A	20.8	1.3	5.8
Shear (30 min. dwell)	1/2" x 1/2" x 500 g	C	>6 hrs	>6 hrs	>6 hrs

Humidity Test (35°C/95% RH)	Type	Failure Mode	Typical Adhesion Performance*		
			(oz/in)	(lbs/in)	(N/25 mm)
180° peel on Stainless Steel (SS)	24 hr.	C	70.4	4.4	19.6
	7 days	C	78.4	4.9	21.8
180° peel on HDPE	24 hr.	A	22.4	1.4	6.2
	7 days	A	43.2	2.7	12.0

Failure Mode: A = Adhesive, C = Cohesive, T = Transfer

* All adhesion properties were evaluated on direct-coated 2 mil polyester facestock at 0.9 mil dry coat weight. PSTC 101 for peel adhesion, PSTC 16 for loop tack and PSTC 107 for shear testing.



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ADHESION PERFORMANCE cont.

Water Immersion Test	Type	Failure Mode	Typical Adhesion Performance*		
			(oz/in)	(lbs/in)	(N/25 mm)
180° peel on Stainless Steel (SS)	30 min.	A	44.8	2.8	12.5
	24 hr.	C	62.4	3.9	17.4
180° peel on HDPE	30 min.	A	12.8	0.8	3.6
	24 hr.	A	22.4	1.4	6.2

Failure Mode: A = Adhesive, C = Cohesive, T = Transfer

* All adhesion properties were evaluated on direct-coated 2 mil polyester facestock at 0.9 mil dry coat weight. PSTC 101 for peel adhesion, PSTC 16 for loop tack and PSTC 107 for shear testing.

TACKIFIER RESPONSE

NovaCryl PS-P 180 offers very good finger tack and adhesion. Enhancement of these properties may be achieved with a variety of tackifiers in the form of dispersions. **NovaCryl PS-P 180** is compatible with hydrocarbon, rosin ester, hydrogenated rosin ester tackifiers and their blends. The desired tackifier level varies depending on the tackifier and the application involved. It is therefore recommended to test the compatibility and desired results of a formulated system.

Tackifier response examples with two commercially available tackifiers:

Adhesion Test	Failure Mode	NovaCryl PS-P 180	NovaCryl PS-P 180 + **Tacolyn™ 1070			NovaCryl PS-P 180 + **Snowtack™ 880G		
			85/15	80/20	75/25	85/15	80/20	75/25
180° peel, 24 hr. (lbs/in)								
Stainless Steel	C	5.1	5.0	4.9	4.8	5.1	5.2	4.9
HDPE	A	1.7	2.1	2.6	3.0	2.1	1.8	2.2
Corrugated Cardboard	C/T	2.4	2.3	2.7	2.2	2.6	2.8	2.6
Loop Tack (1" x 1") (lbs/in)								
Stainless Steel	A	2.7	3.7	3.9	4.2	3.3	3.6	3.7
HDPE	A	1.6	2.0	1.7	1.7	2.2	2.6	2.2
Corrugated Cardboard	A	2.1	2.4	2.2	2.0	2.3	2.5	2.1
Shear SS (min.)								
1/2" x 1/2" x 500 g	C	>360	440	280	290	150	70	90

Failure Mode: A = Adhesive, C = Cohesive, T = Transfer

* All adhesion properties were evaluated on direct-coated 2 mil polyester facestock at 0.9 mil dry coat weight. PSTC 101 for peel adhesion, PSTC 16 for loop tack, and PSTC 107 for shear testing.

** TACOLYN is a trademark of Eastman Chemical Company. SNOWTACK is a trademark of Hexion Specialty Chemicals.

APPLICATIONS

NovaCryl PS-P 180 is designed for clear film label and graphic applications, low temperature (-20°C) labels and over laminates and protective films.



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FORMULATION AND COMPATIBILITY

NovaCryl PS-P 180 PSA can be used alone or formulated for a specific application or coating line configuration. It is compatible with many wetting agents, defoamers and rheology modifiers. To enhance adhesion performance, 5–35% (by wt.) tackifier dispersions can be added. **NovaCryl PS-P 180** is compatible with hydrocarbon, rosin ester, hydrogenated rosin ester tackifiers, and their blends. For low temperature tack and adhesion performance improvement, 1–15% (by wt.) phthalate or benzoate type plasticizer can be included in the formulation. Preliminary trials to determine the effective range of each component are recommended.

COATER READY PRODUCTS

NovaCryl PS-P 181 – Wetting aid added.

NovaCryl PS-P 182 – Wetting aid, defoamer added.

NovaCryl PS-P 183 – Wetting aid, defoamer added, adjust viscosity/solids.

STORAGE, HANDLING AND PACKAGING

This product is available in a tank truck, 2200 lb. tote, 480 lb. fiber drum or 460 lb. plastic drum.

Protect emulsion from freezing. Recommended storage temperature is 70°F (22°C). When stored as recommended, the shelf stability of the product is twelve months. Stir and mix well before using.

As with all chemicals, please read the material safety data sheet (MSDS) prior to use. An MSDS for each OMNOVA product is provided with the shipment and periodically thereafter. An MSDS may also be obtained at any time by contacting your Customer Service Representative or by calling (888)253-5454.

To learn more about this product, or any other of OMNOVA Solutions' specialty chemicals, please contact us at:

Phone: (803)385-5181 • Email: pccustserv@omnova.com



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OUR COMMITMENT TO SUSTAINABILITY

NOTE: Although the data supplied above is believed to be accurate, each user is advised to make an independent determination as to whether the described product(s) is/are appropriate for a particular use or application, whether such use will comply with all applicable laws or regulations, or whether such use will infringe the intellectual property rights of third parties.