

Acronal[®] NX 2278

Acronal NX 2278 is an APEO-free, self-cross linking, aqueous adhesive dispersion used for the manufacture of general purpose removable pressure-sensitive adhesives for self-adhesive articles

Chemical Nature

Acrylic copolymer dispersion containing carboxyl groups

Properties

Typical Properties

Solids content	%	~ 58
pH		~ 7-8
Viscosity at 23 °C (Brookfield RV, Spindle #2, at 20 rpm)	cP	100 – 600

Other properties of the dispersion

Density	g/cm ³	ca. 1.06
Average particle size	µm	ca. 0.3
Film-forming temperature	°C	<1 min.
Freeze-thaw resistance		not resistant
Dispersion type		anionic

Properties of the film

Density	g/cm ³	ca. 1.1
Glass transition temperature T _g (DSC)	°C	ca. -35
Appearance		clear, transparent
Stability to light		very good
Surface of the film		tacky

Compatible with

<i>Polymer dispersions</i>	Anionic dispersions and those containing a protective colloid
<i>Thickeners</i>	Rheovis AS 1125 and urethane associatives
<i>Wetting agents</i>	Lumiten [®] I-SC at levels <0.5% if needed.

Application

Fields of application

Painters Tape

Acronal NX 2278 may be suitable for the production of removable paperbacked masking tapes, providing clean removal and minimal adhesion build on most surfaces for up to 14 days after application. We suggest the application of 40 g/m² (~1.5 mils) dry adhesive to saturated crepe paper. Note that the characteristics of the crepe may affect properties such as initial peel adhesion, adhesion build, rolling ball tack, loop tack and adhesion to backing.

Typical Performance

Coat weight ~40 g/m². Direct coated to saturated crepe paper

PSA Property		
180° Peel ¹ , oz./in. width	Substrate	Value
Immediate	Stainless Steel	20 - 24
14 days	Stainless Steel	<20% build ⁴
Loop Tack ² , oz./in. ²	Stainless Steel	22 - 26
Rolling ball, cm		8 - 10
Shear ³ , hours 1" x 1" x 1kg: 15 min. dwell	Stainless Steel	>350

¹BASF test procedure KAT-W1001

²BASF test procedure KAT-W1002

³BASF test procedure KAT-W1003

⁴adhesion build may vary depending on the surface to which tape is applied

Label and Graphic Films

Acronal NX 2278 may be suitable for the production of removable film face stock labels and removable PVC graphic products, providing clean removal and minimal adhesion build on most surfaces including stainless steel, aluminum, glass, polyolefins, and corrugated. We suggest the application of 18 - 21 g/m² (~0.7 - 0.8 mils) dry adhesive, transfer coated to the appropriate film face stock. Films tested have included PET, treated BOPP and untreated plasticized PVC. Corona treating of film face stocks is typically recommended. Note that the characteristics of these face stocks may affect properties such as initial peel adhesion, adhesion build, and loop tack. The high cohesion of Acronal NX 2278 results in exceptional shrinkage resistance with PVC face stocks.

PSA Property		2 mil Treated BOPP Face	3 mil White PVC Face
180° Peel ¹ , oz./in. width	Substrate	Value	Value
30 Minutes at CTH*	Stainless Steel (SS)	10.7	16.8
	Glass	9.6	12.6
	Aluminum	6.6	10.5
7 Days at CTH	SS	13.1	19.6
	Glass	9.1	14.0
	Aluminum	12.2	12.6
7 Days at 60 °C	SS	21.3	25.3
	Glass	12.8	17.7
	Aluminum	12.2	14.0
Loop Tack ² , oz./in. ²	SS	9.9	10.9
	Glass	6.6	7.3
	Aluminum	5.1	5.8
Shear ³ , hours 1" x 1" x 1kg: 30 min. dwell	SS	>200	>200

Typical Performance

Coat weight ~20 g/m². Transfer coated to appropriate face stock.

¹BASF test procedure KAT-W1001

²BASF test procedure KAT-W1002

³BASF test procedure KAT-W1003

*CTH = constant temperature and humidity, 72 °F / 50% relative humidity

The use of external crosslinkers such as aziridine or metallic ions can further reduce adhesion, resulting in ultra-removable performance.

Processing

If Acronal NX 2278 is to be mixed with another dispersion, the pH should be adjusted to the slightly alkaline range. Note that the viscosity increases when the pH is raised.

In the event of poor wetting, it is often helpful to add about 0.5% of a wetting agent (e.g., Lumiten® I-SC).

Commercially available defoaming agents (e.g., Drewplus® T-4201) are suitable for suppressing foam. Usually the addition of 0.05 – 0.2% of the defoaming agent in the formulation is sufficient.

We recommend adding a preservative to adhesives based on Acronal NX 2278 to protect them from microbial attack. The suitability of such additives must be verified and monitored in trials.

Adhesives based on Acronal NX 2278 can be applied using commonly available application devices such as Meyer-bar, reverse roll, reverse gravure, curtain-coater and slot die.

Safety

General

The usual safety precautions when handling chemicals must be observed. These include the measures described in Federal, State and Local health and safety regulations, thorough ventilation of the workplace, good skin care and wearing of protective goggles.

Safety Data Sheet

All safety information is provided in the Safety Data Sheet for Acronal NX 2278.

Storage

Please refer to the "Handling and Storage of polymer dispersions" brochure.

Important

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