

Acronal[®] 4420

Binder used to bond nonwoven fabrics and to coat and impregnate non-woven and knitted fabrics

Chemical Nature

Acronal 4420 is an aqueous dispersion of a heat-crosslinking copolymer of acrylic esters. It does not contain any plasticizers

Properties

Typical Properties

Solids content	%	~ 50.0
pH		~ 5.0

Other properties of the dispersion

Apparent viscosity at 23 °C (Brookfield RVT, Spindle #1, at 50 rpm)	cps	50 – 200
Density	g/cm ³	approx. 1.07
Ionic charge	Anionic	
Miscibility with water		Miscible in all proportions
Low-temperature stability		Sensitive to frost

Properties of the film

Glass transition temperature (DSC)	°C	approx. –11
Appearance		Clear, transparent
Surface finish		Tack-free
Handle		Soft

Compatibility with

Polymer dispersions

Compatible with the other anionic and nonionic polymer dispersions in our range

Thickeners

Compatible with Rheovis AS 1125, Rheovis PU 1215, and Rheovis AS 1420, and watersoluble cellulose derivatives

Resins

Compatible with Urecoll[®] and Saduren[®] resins

We would recommend testing the stability of formulations that contain Acronal 4420 in advance before they are processed

Crosslinking

The films that Acronal 4420 forms by the evaporation of water are already partially crosslinked on drying. The degree of crosslinking can be increased by heating them to a temperature of 150 – 180 °C.

Catalysts such as maleic acid, phosphoric or ammonium hydrogen phosphate can be used to increase the rate of the crosslinking reaction.

Resistance to solvents

The films formed by Acronal 4420 are insoluble in water and most organic solvents once they have been crosslinked, but they do swell on solvation.

* These values should not be taken as specification

Applications

Areas of Application

Acronal 4420 is mainly used for water-repellent coatings on account of its low emulsifier content and the hydrophobicity of the film that it forms. It can also be used to bond nonwovens. It is a particularly appropriate choice for bonding wet-laid nonwovens that are made from inorganic fibers.

Processing

Acronal 4420 can be applied by all conventional wet impregnation, spraying and coating techniques.

Customers should carry out their own trials when developing products based on Acronal 4420. Its compatibility with other ingredients, its adhesion on different fibers and its stability in storage, etc., are affected by a variety of factors that are too numerous for us to take into account in our own trials.

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 4420.

Storage

Please refer to the "Handling and Storage of polymer dispersions" brochure. Technical information regarding the storage of BASF polymer dispersion products is available upon request.

Important

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