

Luphen[®] D 207 E

Polymer dispersion for the manufacture of laminating adhesives

Chemical Nature

Aqueous dispersion of a polyester- polyurethane elastomer

Properties

Typical Properties

Solids content	%	~ 45 ± 1
pH-value		~ 7.0
Viscosity at 23 °C (Shear rate 250 s ⁻¹)	mPa s	~ 50 – 180

Other properties of the dispersion

Density	g/cm ³	approx. 1.06
Average particle size	µm	approx. 0.2
Film-forming temperature	°C	< 1
Frost resistance		not resistant to frost
Dispersion type		anionic, emulsifier-free

Properties of the film

Density	g/cm ³	approx. 1.20
Glass transition temperature T _g (DSC)	°C	approx. – 48
Water absorption (After 24 hr immersion)	%	approx. 8
Mechanical strength*		
Tensile strength at break	N/mm ²	approx. 40
Elongation at break	%	approx. 1000
Surface of the film		tack-free
Flexibility		flexible

* These typical values should not be interpreted as specifications.

Compatible with

Polymer dispersions

Anionic dispersions and those containing a protective colloid (see section on "Processing" below)

Thickeners

Rheovis AS 1125 (old: Latekoll[®] D), water-soluble cellulose ethers (see section on "Processing" below)

Resins

Modified and unmodified natural resins, terpenepheno, cumarone indeneand hydrocarbon resins can be added in the form of an aqueous dispersion

Plasticizers

Palatino[®] IC, Plastilit[®] 3060

Applications

Features

Luphen D 207 E is used in the manufacture of adhesives for laminating and heat-sealing.

The film that Luphen D 207 E yields can be activated by heat and in common with the PUR elastomer films, it has a limited hot-tack life.

Processing

In order to prevent coagulation, it is important to make sure that none of the components has a pH of less than 7 when thickeners are added or when Luphen D 207 E is mixed with other products. Luphen D 207 E can only be mixed with anionic dispersions or with dispersions that contain a protective colloid.

Container, pipes and other equipment that come into contact with Luphen D 207 E must be made of corrosion-resistant materials such as 18/8 stainless steel or plastics to prevent coagulation.

Specially developed water emulsifiable, polyfunctional isocyanates such as Basonat® F 200 WD can be added to adhesives formulated with Luphen D 207 E to improve the heat resistance of the bond and its resistance to hydrolysis.

The potlife of the adhesive depends on the re activity of the isocyanate used, and this has to be determined in trials.

If Luphen D 207 E is employed in heat-sealing adhesives, an emulsifier such as Lumiten® I-SC should be added to the polymer dispersion at a rate of up to 1 % in order to promote the wetting of the substrate during coating.

We recommend adding a preservative to adhesives based on Luphen D 207 E to protect them from microbial attack. The suitability of such additives must be verified and monitored in trials.

Manufacturers must carefully carry out their own trials when developing adhesives based on Luphen D 207 E, as there is a host of factors in production and processing that we cannot cover exhaustively in our trials which can influence compatibility with other components of the adhesives, their wetting of and adhesion to different substrates etc.

Particular attention is drawn to the fact that polyurethanes can be affected by hydrolysis and by exposure to heat, and comprehensive tests therefore need to be performed on adhesive formulations.

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 Luphen D 207 E.

Storage

Please refer to the "Handling and Storage of Polymer Dispersions" brochure.

Important

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