

Epotal® ECO 3702

Compostable Adhesive Raw Materials

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Chemical Nature

Aqueous dispersion of a polyester-polyurethane elastomer

Technical Data

Solids content	approx. 40%
pH value	approx. 8
Viscosity	approx. 40 mPa·s
Glass transition temperature	approx. -46 °C

For detailed information see Specification data sheet

Advantages

Epotal® ECO 3702 is a waterborne adhesive raw material which is compostable according to EN 13432. The adhesive is particularly suited for the production of multi-layer films based on a broad variety of compostable films and paper. The laminate has a high initial bond strength enabling direct further converting.

Applications

It is recommended applying Epotal® ECO 3702 by reverse gravure coating. For direct gravure coating, the usage of a smoothing bar helps achieving a good coating quality. The smoothing bar should be operated against the web direction.

It is strongly advised to add a water-emulsifiable, polyfunctional isocyanate crosslinker such as Basonat® LR 9056 to improve the overall performance of the adhesive. We recommend a concentration of 3% of Basonat® LR 9056 based on wet Epotal® ECO 3702. The pot-life of the formulated adhesive after addition of the Basonat® LR 9056 is approximately 4 hours at room temperature. In order to achieve a good coating quality it is recommended to minimize pot-life as much as possible.

When Epotal® ECO 3702 is applied by gravure coating a defoamer and a wetting agent is recommended.

A possible defoamer is Tego® Antifoam 4-94 with an amount of up to 0.1%. As wetting agent Lumiten® I-SC is recommended at an amount of up to 0.5%. The Lumiten® I-SC needs to be added while stirring 12 h before applying the adhesive.

If thickeners are added or if Epotal® ECO 3702 is mixed with other products, it is important to make sure that none of the components has a pH of lower than 7 in order to prevent coagulation. Epotal® ECO 3702 can only be mixed with anionic dispersions or with dispersions that contain a protective colloid.

Recommended Formulation

Following formulation is recommended and compliant to the composting norm EN13432.

100 parts Epotal® ECO 3702
3 parts Basonat® LR 9056
0.5 parts Lumiten® I-SC

Manufacturers must carefully carry out their own trials when developing adhesives based on Epotal® ECO 3702, 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.

Container, pipes and other equipment that come into contact with Epotal® ECO 3702 must be made of corrosion-resistant materials such as 18/8 stainless steel or plastics to prevent coagulation.

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

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