Bayhydrol® UV XP 2687

Characterization	Urethane Acrylate Emulsion. Bayhydrol® UV XP 2687 is used in the formulation of waterborne UV curable coatings for wood. It is an emulsion type with high gloss and strong body.
Form supplied	approx. 49 % solids emulsion in water

Characteristic data*

Property	Value	Unit of measurement	Method
Non-volatile content (1g / 1h / 125 °C, convection oven)	46.0 - 51.0	% by weight	DIN EN ISO 3251
Viscosity at 23 °C	50 - 500	mPa·s	DIN EN ISO 3219/A.3
ph-value	6.8 - 8.5		DIN 53 785

*These values are provisional. Binding supply specifications will not be available until the final product data sheet is published.

Other data**

Property	Value	Unit of measurement	Method
Appearance	Milky, slightly colloidal		

**These values provide general information.

Notice

No statistically verified datasets of the characteristic data and other data listed are currently available. Additional adjustments are possible as a result of further process optimization, such as a scale-up trials to larger production units.

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Solubility / thinnability	Bayhydrol® UV XP 2687 can be thinned with water.
Compatibility	The emulsion should be formulated and applied at pH higher than 6.7. It is recommended that the pH is adjusted with tertiary amines like triethylamine. Many positive combinations are possible with other dispersions, conventionally curing or UV curing, but these should be checked on a case-by-case basis. Combinations with water-compatible UV monomers ("reactive thinners") or oligomers are also possible.
Properties / Applications	Bayhydrol® UV XP 2687 is used for the formulation of waterborne UV coatings, especially for application on wood/wood materials. The addition of 1.0 to 2.5 ppw photoinitiator calculated on the solid binder, have proved suitable for initiating the curing reaction. We achieved good results with Irgacure® 500 (Ciba) and Esacure® KIP 100F (Lamberti). As the dispersion has a relatively high surface tension, the formulation should always contain a wetting agent, such as BYK® 348 (BYK), Surfinol MD 20 (Airproducts) or EFKA 3024 (BASF).Viscosity is set by the addition of polyurethane thickeners. Matting agents should be added in the form of pastes. After evaporation of the water in suitable drying systems (convection oven, IR, microwave, jet air, dehumidified air or combination systems) coatings formulated in this way can be cured at a belt speed of up to 10 m/min per 80 W/cm lamp. The paint films are not physically dry after evaporation of the water. They display very good penetration and wetting of wooden substrates. Bayhydrol® XP 2687 shows optimum grain accentuation and excellent chemical resistance. The product shows good re-emulsification properties. Depending on the formulation and the method of application, it is possible to produce finished surfaces that conform to the resistance requirements of DIN 68861, 1B. Primers for roller coaters can be formulated that greatly improve the results in coin tests of UV-cured finishes e.g. in hardwood flooring coatings. The product can also be combined with hardeners like Bayhydur® polyisocyanates to produce "dual cure" waterborne UV coatings.

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Storage	- Storage in original sealed Covestro container. - Recommended storage temperature: 5 - 30 °C. - Protect from frost, intense radiation (light, UV), heat and foreign material. General information: The product is sensitive to frost. Freezing will damage the product irreversibly. Prolonged storage at higher temperatures may result in an increase of average particle size, risk of sedimentation, risk of pH-drift and ultimately coagulation. Contamination with certain bacteria, fungi or algae may render the product unusable.
Storage time	Covestro represents that, for a period of six months following the day of shipment as stated in the respective transport documents, the product will meet the specifications or values set forth in section "specifications or characteristic data" above, what ever is applicable, provided that the product is stored in full compliance with the storage conditions set forth in and referenced under section "storage" above and is otherwise handled appropriately. The lapse of the six months period does not necessarily mean that the product no longer meets specifications or the set values. However, prior to using said product, Covestro recommends to test such a product if it still meets the specifications or the set values. Covestro does not make any representation regarding the product after the lapse of the six months period and Covestro shall not be responsible or liable in any way for the product failing to meet specifications or the set values after the lapse of the six months period.

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Labeling and statutory requirements	This product data sheet is only valid in conjunction with the latest edition of the corresponding Safety Data Sheet. Any updating of safety-relevant information – in accordance with statutory requirements – will only be reflected in the Safety Data Sheet, copies of which will be revised and distributed. Information relating to the current classification and labeling, applications and processing methods and further data relevant to safety can be found in the currently **valid Safety Data Sheet**.
Important	**This is a Trial Product of which we do not yet have extensive experience. No guarantee can therefore be given regarding the behaviour of the product during processing or use.**

Edition: January, 2018