Bayhydrol® A 145

Characterization	Water-reducible, hydroxyfunctional polyacrylic dispersion. In combination with aliphatic polyisocyanates to formulate aqueous two-component clear- and topcoats for vehicle repair applications, heavy transport finishing and industrial coating. In combination with amino resins or blocked polyisocyanates for waterborne, one-component, industrial baking coatings.
Form supplied	Approx. 45% in water / SN 100 / 2-butoxyethanol, dimethyl ethanol amine neutralized, 4% SN 100, 4% 2-butoxyethanol.

Specification

Property	Value	Unit of measurement	Method
Acid value	10 ± 3	mg KOH/g	DIN EN ISO 2114
Viscosity at 23 °C, D = 41,28 s^{-1}	950 ± 550	mPa·s	DIN EN ISO 3219/A.3
Non-volatile content (1g/1h/125 °C/ convection oven)	45 ± 2	%	DIN EN ISO 3251
pH value (supply form)	7.2 - 8.2		DIN ISO 976

Other data*

Property	Value	Unit of measurement	Method
Density at 20 °C	approx. 1.06	g/ml	DIN EN ISO 2811-2
OH content (calculated on solid resin)	approx. 3.3	%	
Flash point	approx. 53	°C	DIN EN ISO 1523

*These values provide general information and are not part of the product specification.

Bayhydrol® A 145

Solubility / thinnability

Bayhydrol® A 145 can be thinned with water. It has only partial compatibility with glycol ethers and glycol ether esters.

Compatibility

Suitable co-reactants for the formulation of waterborne two-component polyurethane systems are aliphatic polyisocyanates such as Desmodur® ultra N 3300, N 3600, Bayhydur® 302, ultra 304, ultra 305 and 401-70.

Properties / Applications

General

Bayhydrol® A 145 is a hydroxyfunctional polyacrylic dispersion which can be thinned with water to application viscosity.

Bayhydrol® A 145 has good pigment wetting properties and high shear stability. Bead mills have proved suitable as grinding equipment. Only pigments and extenders with a minimal water-soluble content should be used.
Given the many pigments and extenders available, compatibility testing should always be carried out.

Leveling and substrate wetting can be optimized by adding Byk® 380 or Byk® 348, for example.

Byk® 011 has proved to be a suitable antifoam.
Application and formulation equipment can be cleaned with water, alkaline cleaning agents or isopropanol.

Two-component industrial coatings

Bayhydrol® A 145 combined with aliphatic polyisocyanates yields high-gloss topcoats which can be dried at room temperature or force-dried, e.g. at 80 °C. The cured paint films are hard and flexible with good single-coat adhesion and good resistance to solvents and water.

When properly formulated, e.g. in combination with Bayhydur® 302 in an NCO/OH ratio of 1.5 : 1, the pot life is approximately 3 hours.
The formulated coating should have a pH between 7.8 and 8.3.

When mixing Bayhydur® or Desmodur® into the mill base, a thickener must be added to ensure a high shear effect.

The addition of approx. 0.3 % Acrysol® RM 8 (calculated on the solid binder) has proved suitable for formulations based on Bayhydrol® A 145.

Bayhydrol® A 145

One-component industrial baking coatings

Bayhydrol® A 145 can be used in combination with melamine resins for the formulation of baking coatings with < 5 % co-solvent at application viscosity.

The systems cure in as little as 30 min at 120 °C. The ratio of Bayhydrol® A 145 to amino resin (solids on solids) is generally 80 : 20. Given the many amino resins available, compatibility testing should always be carried out.

As a hydroxyfunctional binder, Bayhydrol® A 145 is also suitable as a co-reactant for waterborne aliphatic polyisocyanates. The OH : NCO ratio should be 1 : 1.

To ensure the storage stability of one-component coating systems based on Bayhydrol® A 145, the pH should be set to approx. 8.5 during formulation.

Storage

- Storage in original sealed Covestro container.

- Recommended storage temperature: > 0 - 30 °C.

- Protect from frost, heat and foreign material.

General information: Short-time cooling down to -18 °C does not typically damage the product, but the viscosity may increase significantly. Prolonged freezing can damage the product irreversibly.

The viscosity of the product is largely governed by the pH. As the pH may decrease during storage, a decrease in viscosity is also to be expected. The viscosity can be restored to its original value by the addition of small amounts of an aqueous 10 % solution of dimethylethanolamine. Prolonged storage at higher temperatures may result in a decrease of viscosity and/or an increase of average particle size, possibly resulting in sedimentation or coagulation. Contamination with certain bacteria, fungi or algae may render the product unusable.

Bayhydrol® A 145

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.
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**.

Edition: January, 2018

Editor: Coatings, Adhesives & Specialties
Covestro Deutschland AG
Kaiser-Wilhelm-Allee 60
51373 Leverkusen,Germany
www.covestro.com

Contact:
CAS Single Point of Contact APAC
e-mail: cas_spoc_apac@covestro.com