TECHNICAL DATA SHEET

AKZ APU-110

PRODUCT & FORMULATION

Product description

Waterborne, aliphatic, anionic polyurethane dispersion containing polycarbonate. Non-hybrid polyurethane binder for the development of clear and pigmented coatings, particularly for plastics and wood. Can be evaluated in one-component formulations; this is a raw material, not a ready-to-use paint.

Declared and reference technical data

The supplier declares technical correspondence to the selected reference grade, with solids adjusted to 75% by weight. Other values below are adopted from the reference documentation on that basis; independent APU-110 verification has not been supplied.

Property	Value	Condition / basis
Non-volatile content	75% by weight	Supplier-declared
Viscosity	< 300 mPa.s	At 23 C; reference specification
pH	7 - 9	Reference specification
Minimum film forming temperature	Approx. 45 C	Reference typical value
Mean particle size	Max. 100 nm	Reference typical value

Film formation and coalescing aids

The reference binder requires coalescing agents for film formation. Its minimum film forming temperature is not a recommended application temperature. At 75% solids, establish the required coalescent level in APU-110 by laboratory testing.

Coalescent	Reference blend (parts)
Butyl glycol	0.6
Butyl diglycol	0.6
Tripropylene glycol n-butyl ether (TPnB)	3.8

The 0.6 : 0.6 : 3.8 ratio describes the reference coalescent blend only. It does not specify the total addition to APU-110 and is not a validated production recipe.

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APPLICATIONS & HANDLING

Properties and application areas

The reference binder is designed particularly for plastic coatings, including PVC floor coatings. Wood and furniture coatings and filler or topcoat formulations may also be evaluated. Development can target leveling, toughness, flexibility, and chemical and weathering stability; confirm the performance of the complete APU-110 formulation.

Compatibility and crosslinking

Combinations with polyester, polyurethane and acrylic dispersions must be tested individually. Combinations with waterborne UV systems are also possible in the reference documentation. Optional post-crosslinking with a suitable water-dispersible polyisocyanate can be evaluated for improved resistance.

A 10 : 1 mill-base-to-hardener ratio is mentioned for the reference system. Do not adopt this as an APU-110 mixing instruction: determine the crosslinker type, reactive-equivalent balance, pot life and final performance for the actual formulation.

Required formulation checks

Evaluation	Purpose
Film formation and drying	Confirm continuity at the intended temperature
Adhesion	Test on the prepared, actual substrate
Hardness and flexibility	Balance film strength with deformation
Water / chemical resistance	Evaluate the intended exposure conditions
Compatibility and stability	Check additives, pigments and storage stability

Storage and storage period

Reference storage guidance: above 0 C and up to 40 C in original sealed containers. Protect from freezing, excessive heat and contamination. Prolonged freezing may irreversibly damage the dispersion. Extended heat exposure can change viscosity or particle size and lead to sedimentation or coagulation.

The reference assurance period is six months from shipment under the stated storage and handling conditions. This is not an independently established APU-110 shelf life; confirm the actual batch label and supply documentation.

Safety and documentation

Read the current APU-110 Safety Data Sheet (SDS) and label before handling. This sheet is not a batch Certificate of Analysis (CoA). No independent mechanical test results, certification or numerical resistance claims are made for APU-110.