

Advanced Materials

Araldite® PZ 3961-1#

WATERBORNE COATINGS

DATA SHEET

Aqueous emulsion of solid “type 1” epoxy resin

Applications

Araldite PZ 3961-1 is used:

- mainly for primers and topcoats onto metals with fast cure at ambient and warm temperature
- for fast-curing concrete coatings (addition of at least 30 % liquid resin emulsion based on Araldite PY 33757 or PZ 33757/67 will improve coalescence of the films). This ensures proper wetting of concrete and therefore good adhesion of primers. Improved film coalescence also slightly reduces the minimal film forming temperature. This can be useful both for primers and topcoats;
- to optimize the stability of diluted liquid resin emulsions;
- for warm-curing industrial coatings (60 - 80 °C).

Hardeners used:

- Aradur 36 and Aradur 3987 (very versatile)
- Aradur 35-1 (very fast)
- Aradur 340 (very flexible).
- Aradur 3986 (excellent corrosion protection)

Properties

Offers fast cure, good adhesion, high hardness and good protection against corrosion. Pot lives are relatively short, *except* with Aradur 340 and Aradur 3986 that offer a *remarkable combination of long pot life and short dust-drying*.

Requires no hazard labelling.

Excessively low or high temperatures, high shear forces and some additives can break this emulsion. Storage at sensible temperatures (~ 20 °C), pigmentation of the hardener component and proper choice of additives will avoid problems.

Same gloss at all dilutions. Gloss decreases when pot life has expired. End of pot life is not visible, as viscosity does not change significantly in combination with most hardeners.

Flexibility is adequate for normal filling ratios.

Key data

Specified key data

Solids content (ISO 787-2)	51.0 - 55.0	[%]
Epoxy index on solids (ISO 3001)	1.96 - 2.22	[eq/kg]
Epoxy equivalent on solids (ISO 3001)	450 - 510	[g/Eq]
Particle size D (v,0.5) (ISO 13320)	0.1 - 1	[µm]
Viscosity at 23 °C (Rotary viscosity, ISO 3219)	500 - 1500	[mPa s]

Specified key data are individually checked throughout and guaranteed.

Typical key data

Aspect (visual)	white liquid	
Density at 25 °C (ISO 1675)	~ 1.10	[g/cm ³]
Flash point (Pensky Martens, ISO 2719)	≥ 100	[°C]

In addition to the brand name product denomination may show different appendices, which allows us to differentiate between our production sites: e.g. BD = Germany, US = United States, IN = India, CI = China, etc. These appendices are in use on packaging, transport and invoicing documents. Generally the same specifications apply for all versions. Please address any additional need for clarification to the appropriate Huntsman contact.

As-supplied form	liquid (53% in water/methoxypropanol/benzylalcohol)
Odour	slight
Shelf life (at storage temperature between 2 - 40 °C) (see expiry date on original container)	1 year at least
Hazardous decomposition products (when disposed of in fire)	carbon monoxide, carbon dioxide and other toxic gases and vapours
Disposal	regular procedures approved by local authorities

Typical key data are spot checked; the values are typical for the product and are indicated for information only. The values are not guaranteed.

Mix ratios	Components		Parts by weight	
		Araldite® PZ 3961-1	1000	1000
	Aradur® 36	170		
	Aradur® 340			217
	Pot life (gloss not decreased more than 10%)	[h]	3	4
	Dust dry time	[h]	4	2
	Persoz hardness (ISO 1522) after 1 day	[s]	135	170
	Distensibility (Erichsen) after 2 weeks	[mm]	9.5	10

Tests at 20 °C, 65% RH.

Stoichiometric mix ratios used. Less hardener, 80 to 85% of stoichiometric improves resistance to water and corrosion.

Storage	Araldite® PZ 3961-1 should be stored in a dry place, preferably in the sealed original container, at temperatures between 2 and 40°C (temperatures will never be allowed to drop below 0°C). The product must not be stored exposed to freezing or direct sunlight.
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Handling precautions	Mandatory and recommended industrial hygiene procedures should be followed whenever our products are being handled and processed. For additional information please consult the corresponding product safety data sheets and the brochure "Hygienic precautions for handling plastics products".
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The manufacture of materials is the subject of granted patents and patent applications; freedom to operate patented processes is not implied by this publication.

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