

PERMACOL[®] 5435 A/B
Low viscosity, clear casting resin

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General information

PERMACOL 5435 is the liquid A-component of a 2-component polyurethane potting system. After reaction with the liquid Bcomponent it forms a tough-flexible, transparant, weather-proof and UV stable product. Therefor, this finished product is ideal for outdoor encapsulation applications. Both A and B component are solvent-free.

Special features

PERMACOL 5435 is specially developed for outdoor, heavy duty applications. The finished encapsulant has a high resistance against mechanical impacts, it remains colourless and intact after prolonged exposure to UV radiation, it is waterproof, and it is highly inert to a variety of chemicals. Under proper processing conditions, the finished product is very homogenous and highly transparant, which makes it ideally suited for the transmission and refraction of light in electronic devices.

Technical characteristics

A and B component, before mixing:

	A-Component	B-Component
Density @ 20°C [g/cm³]	1.10	1.15
Viscosity @ 20°C [mPas], Brookfield HAT, spindle 3, 50 rpm	ca 700	ca. 280
Refractive index	1.48	1.50
Appearance	Colorless transparant	Colorless transparant

Freshly mixed A and B component:

Mixing ratio (parts by weight)	100 : 150
Mix viscosity @ 20°C [mPas], Brookfield HAT, spindle 3, 50 rpm	ca. 400
Appearance	Cloudy
Reactivity of 200 g mixture at ca. 20 °C starting temperature Geltime Hardening time	ca. 30 min. ca. 2 hours

Finished product after 3 days or more:

Shore hardness	ca. D 40
Thermal conductivity @ 20 °C	0.16 W/mK
Lin. Thermal expansion coefficient	170 ppm/K
Refractive index	1.48
Appearance	Colorless, transparant

Precautions

All parts of equipment and final product, that come into contact with the mixed product, should be **dry, clean and fatfree**. The **A** component, is harmless. Be aware of safety instructions for working with the **B** component (see MSDS)

Preparation

In order to avoid air bubbles in the final product, both A component and B component should be processed under vacuum and dry conditions. When using mixing/metering equipment, place the supply barrel under vacuum after (re) filling.

Mixing and casting

Always use the fixed mixing ratio indicated in the above table. The ratio is given as weight to weight. During mixing, the product will become cloudy. This is a normal effect, due to a slight incompatibility of components. In due time, this effect disappears, and the product becomes fully clear and transparent. However, make sure to avoid any bubbles in the product during mixing ! When mixing is done by hand, place the product under vacuum for a short period of time, after mixing. Make sure not to exceed the time to gel of ca. 1 hour. Once gelation takes place, the viscosity increases, and further processing (casting, potting etc) is severely hindered. Therefore, do not mix more material than can be processed. The time gel is indicated for processing at ca 20 °C. The evolving reaction heat speeds up the reaction further. The reaction rate is influenced by the parameters of the casting process. At higher content to surface ratios of the casted product, the reaction is accelerated more. Thus, bulky devices take less time to fully react, than thin layers do.

If processed within the time to gel, the product is free flowing and can be easily processed further, e.g. by pouring into a mould. After ca. 2 hours, the product can be gently moved and handled, provided special care is taken to avoid damage.

After ca. 3 days, the reaction is complete, rendering the product its final strength. Only the completely reacted product complies with the table of finished product properties above. Do not expose incompletely reacted product to exterior or damaging conditions.

Cleaning of parts: liquid residues can be removed using Ethanol.

Storage

Keep the containers closed and store preferably at room temperature. The shelf life is 6 months. Opened containers of B-component should be used as soon as possible. Under influence of moisture in the air, the product's reactivity will gradually decrease.

Packaging

5 kg jerrycan, 225 kg barrel

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