Intercol bv

Industrial Adhesives

Provisional Technical datasheet PUR 490

General information

PUR 490 is the liquid A-component of a 2-component polyurethane potting system. After reaction with the liquid B-component, **PUR G**, it forms a hard, transparant, weatherproof and UV stable product. Therefor, this finished product is ideal for outdoor encapsulation applications. Both A and B component are solvent-free.

Special features

PUR 490 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 homogenuous 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:

	PUR 490	**PUR G**
Density @ 20°C [g/cm^3]	1.10	1.15
Viscosity @ 20°C [mPa·s], Brookfield HAT, spindle 5, 50 rpm	ca 2600	ca. 800
Refractive index	1.48	1.50
Appearance	Colorless transparant	Colorless transparant

Freshly mixed A and B component:

	PUR 490 / PUR G
Mixing ratio (parts by weight)	**100 : 200**
Mix viscosity @ 20°[mPa·s], Brookfield HAT, spindle 5, 50 rpm	Ca. 2000
Appearance	Cloudy
Reactivity of 200 g mixture at ca. 20 °C starting temperature Geltime Hardening time	 ca. 1 hour ca. 1.5 hours

Finished product after 3 days or more:

	PUR 490 / PUR G
Shore hardness	ca. D 85
Thermal conductivity @ 20 °C	0.16 W/mK
Lin. Thermal expansion coefficient	Data pending
Refractive index	1.48
Appearance	Colorless, transparant

Intercol B.V.
Marconistraat 7 P.O Box 259 tel: +31-(0)318-636363 E-mail : intercol@intercol.nl
NL- 6716 AK Ede NL- 6710 BG Ede fax: +31-(0)318-639474 Internet : www.intercol.nl

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Directions for processing (mixing/ metering equipment recommended)

Precautions
All parts of equipment and final product, that come into contact with the mixed product, should be **dry**, **clean** and f**at-free**. The **A** component, **PUR 490**, is harmless. Be aware of safety instructions for working with the **B** component, **PUR G** (see MSDS PUR G)

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 weigth to weigth. **Mix in an inert plastic container like PP, PE, PS, etc.. Avoid silicon containing materials.** 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 transparant. 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 gelation time of ca. 1 hour. Once gelation takes place, the viscosity increases, and further processing (casting, potting etc) is severely hindered. Therefor, do not mix more material than can be processed. The gelation time 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 accellerated more. Thus, bulky devices take less time to fully react, than thin layers do.
If processed within the gelation time, 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 uncompletely reacted product to exterior or damaging conditions.

Cleaning of parts: liquid residues can be removed using PD 100, Intercol's special detergent product.

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

Packaging

A component PUR 490:	10 and 30 ltr drum.
B component PUR G:	5 ltr jerrycan

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