

### Adhesive PU 312D - PU contact adhesive for bonding various materials such as PVC, PU, TPE.

#### AREAS OF APPLICATION.

Adhesive PU 312 is specifically designed for bonding plastics – PVC, PU, TPE, and some rubbers. Can be especially used in inflatables manufacture and repair, bonding shoe soles to the top. This adhesive is obtained by mixing immediately before using the adhesive PU 312 with one of the following hardeners DESMODUR RC or DESMODUR RN. The basic mixing ratio is 3-5% by volume.

#### PROPERTIES.

- High strength and excellent thermal stability of the assemblies.
- Resistance to hydrolysis (water resistance), acids and mineral oil.
- Good connection flexibility, including at low temperatures.
- Easy to apply.
- Excellent adhesion to most substrates.
- Short open time and therefore high initial bond strength.

#### TECHNICAL DATA.

Based	<i>Polyurethane with polyisocyanate hardener in organic solvents.</i>
Colour	<i>Colorless, transparent</i>
Conventional solids content, %	<i>19 – 22</i>
Viscosity at 20°C, mPa.s	<i>2500 - 3000</i>
Density at 20 °C, g/sm <sup>3</sup>	<i>approx. 0.83</i>
Open time at 20 °C, min	<i>5</i>
Bond Strength, N/sm, 24 hour	<i>70 – 90</i>
The time to reach 70% of maximum strength, min	<i>8 – 10</i>
Temperature resistance of the assemblies, °C	<i>95</i>
Thermal activation temperature, °C	<i>55 - 65</i>

#### PACKAGING.

Metal can 540 ml	24units in cardboard box
Metal can 800 ml	12 units in cardboard box
Conical metal container 3 L	4 units in cardboard box
Conical metal container 20 L	
Cylindrical metal container 50 L	

The hardener is packaged in metal bottles of 800 g each.

#### STORAGE.

Storage time 12 months. Recommended storage temperature: + 5 - +25 °C. Storage in original containers.

#### WARNING

During transportation at negative temperatures, the viscosity increases, but if it enters into a warm room adhesive properties are recovered without intervention.

## Technical Datasheet

### Adhesive PU 312D

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#### SAFETY.

Highly flammable and irritant.

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 method, and further data. Read material safety data sheet before use.

#### INSTRUCTIONS FOR USE.

##### **General recommendations**

##### Substrates preparation:

The substrates to be assembled must be dry, dust free and not have any traces of grease or other contaminants that could adversely affect the adhesive performance. PVC and PU substrates may be cleaned with MEK or ethyl acetate. Products made of cast polyurethane clean with a wire brush or sandpaper. Cast products from rubber based on natural, nitrile, butadiene - styrene rubber, thermoplastic elastomers based on SBS (styrene-butadiene-styrene) or SIS (styrene-isoprene-styrene) block polymers must be processed with a wire brush or sandpaper and halogenate. More detailed recommendations are given below.

When using solvents, extinguish all sources of ignition and carefully follow the safety and handling instructions given by the manufacturer.

Temperature of adhesive and substrates have to be between 15 - 25 °C.

##### Glue preparation:

Use only dry containers. Pour in a glue sample into a small transparent container and inspect it in transmitted light. The lack of clouding indicates the absence of moisture in the adhesive. In this case, the mixing ratio is 3 - 5% by volume of DESMODUR in the adhesive. In case of clouding of the sample in the probe, the mixing ratio should be increased to 5 - 7%, since DESMODUR is primarily used to remove moisture from the glue and only after that to "cross-link" the glue. Measure a portion of glue that can be used within 6 - 8 hours and add DESMODUR to it in the required ratio. The resulting mixture must be used within 6 to 8 hours. A sign of the transition of the adhesive into an unusable state is a noticeable increase in its viscosity.

##### **Application :**

The adhesive is applied with a brush to the prepared surface.

Recommended glue temperature 18 - 22 °C, humidity 60 - 65%. It is recommended double gluing with an interval between the first and the second 10 minutes.

Let solvents evaporate (5 to 15 minutes, depending on temperature, hygrometry and substrates). Max Drying Time - 24 hours.

##### **Thermal activation:**

Directly before bonding adhesive film must be thermally activated - heated to a temperature of 60 - 65 °C. Thermal activation can be local - heating the adhesive film with an infrared lamp (thermal shock method), a heated air flow or the total - in an oven. The adequacy of thermal activation temperature can be checked by measuring the temperature of the adhesive film (for example a non-contact thermometer). Perhaps, a rough estimate of the adequacy thermal activation temperature - adhesive film to become tacky.

##### **Bonding:**

Press products to each other thermally activated adhesive films, and highly compressed (pressed) or rolled rollers. Leave under load is not needed.

Attention. The time between the by compressing and thermal activation must not exceed the open time - this glue - 5 minutes. After 5 - 7 minutes adhesive joint strength reaches 70% of its maximum. A further increase in strength occurs slowly during 30 - 40 hours.

Technical Datasheet

## **Adhesive PU 312D**

***Recommendations for bonding of PVC fabrics and films, PU films. (Production of inflatable boats, water attractions).***

***Attention.*** For the bonding of inflatable structures, which must be operated at higher temperatures (above + 40 °) and inflatable structures from materials of dark colors, use two-component adhesive PU 312D with a hardener.

### ***Surface Preparation:***

Clean surface shallow sandpaper and clean it with a cloth, moistened with solvent RK-A-1 or RC-B-1. It is possible to use acetone or ethyl acetate. Drying 10 minutes.

### ***Adhesive application:***

Apply a thin layer of glue with a brush to both surfaces and dry for 10 minutes. (This procedure is recommended to glue - 303 PU primer, which has a lower viscosity and better fill the pores of the material). Applying a second adhesive layer and dried for at least 10 - 15 minutes depending on the ambient temperature.

### ***Thermal activation:***

Thermal activation should be carried out immediately before the gluing, but no more than 2 - 3 hours after applying the adhesive. It should be closely monitored to adhesive films do not contain dust. Thermal activation is carried out heated air or infrared lamp (thermal shock). The temperature of the adhesive film after the heating should be in the range of 60 - 65 ° C. (Non-contact thermometer is monitored by the appearance or stickiness).

Assemble precisely both parts and press briefly but firmly and evenly on the whole surface. Once the two substrates are assembled, they can't be repositioned or separated. With rigid materials, assembling has to be followed by an even and maximum pressure applied across the entire surface without irreversible deformation of substrates.

In damp and cold weather, ensure that materials and adhesive are at a correct temperature in order to prevent formation of dew as the solvents evaporate, which could result in defective bonding.

### ***Cleaning :***

Tools can be cleaned with MEK or ethyl acetate.

### ***CONSUMPTION.***

125 to 150 g/m<sup>2</sup> to each surface depending on substrates. For very porous materials, a higher amount may be necessary.

### ***PRECAUTIONS FOR USE.***

Adhesive PU 312 cannot be used for bonding expanded polystyrene or untreated polyethylene, polypropylene.

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