

## 2-Component PU Adhesive

**493.25**

**Application:** Lamination adhesive for the manufacture of three-dimensional coated parts for vehicle interiors with thermoplastic foils (e.g. plasticized PVC foam foils) in vacuum deepdrawing methods.

**Customer trials are required.**

The properties of the bonded parts and, where necessary, the primer coating on the reverse side of the materials have to undergo application-related testing prior to use.

**Typical Key Data/ Directions for Use:** Long open time at room temperature, good resistance to high and low temperatures, above-average aging resistance, good pressure sensitivity of the adhesive films to each other, high initial and final bond strength.

After application, allow to flash off until almost no more tackiness can be noticed. Then join and press well.

Based on experience, the most optimum processing temperature of the adhesive and of the materials to be bonded is 18 – 25 °C. Cold materials must be stored in a conditioned room for approx. 24 hours before processing.

**Low temperature behavior:**

The adhesive may become gelatinous in cold rooms and also during transport in unfavorable conditions (temperatures below +5 °C).

Before processing, the adhesive should be allowed to warm up sufficiently in a heated room (18 – 22 °C) for an adequate amount of time (between 24 and 72 hours depending on the initial temperature), and must be stirred well before use.

Partly emptied containers must be closed tightly. Exposure to moisture must be avoided.

**Addition of crosslinking agent:**

For the bond to meet the prescribed quality standards in the automotive industry, it is imperative to process the 2-component PU adhesive Jowat® 493.25 with the addition of a crosslinking agent from the Jowat® 498.xx series (for detailed information please refer to the test report of the first sample).

Add the crosslinking agent in a fine jet. Adapt the stirring speed to prevent foaming.

**Partly emptied containers of crosslinking agent may not be used again. All residual amounts must undergo disposal.**

**Adhesive application:**

To both surfaces.

**Application method:**

By spraying, gun type depending on application.

Material pressure[bar]: approx. 2 – 4

Spray pressure [bar]: approx. 4 – 6

Application by coating methods is also possible.

continued on page 2

**03/24** All data indicated are characteristics represented as average values. Our technical data sheets are periodically revised to represent the latest state of technology. This edition is replacing and superseding all previous ones, and is valid on the date of compilation.  
**Please refer to the last page of this technical data sheet for additional information.**

**Application amount:**

Approx. 150 – 200 g/m<sup>2</sup> (wet). The exact quantity of average consumption can only be determined by extensive field trials. The data indicated above are based on in-house lab testing and are therefore not binding.

**Pot life:**

The pot life depends on the type of crosslinking agent and quantity, up to 8 hours.

**Flash-off time:**

At least 30 minutes at room temperature or a few minutes at 40 – 60 °C in a drying channel. Special care should be taken that the object temperature of the substrate will not surpass 40 °C.

Special care should be taken to dry the adhesive completely in order to avoid retention of solvents and consequent bonding problems in highly absorbent areas or in case of substrates with varying degrees of consolidation.

The flash-off time can be reduced by the input of heat, for instance by means of a drying tunnel with circulating air.

**Open tack time (open time):**

The open tack time of the adhesive film depends on type and quantity of crosslinking agent added. In general, it will be up to 3 hours.

**Reactivation temperature:**

The reactivation temperature inside the bondline has to be higher than 50 °C. However, suitable preliminary testing must be carried out by the customer to define the precise temperature required in the individual application.

**Appearance:**

blue lazings (colored for an easier detection during application)

**Solvent:**

ketones, esters

Key data measured according Jowat test methods.

**Requirements for a High-Quality Bonding Process:**

The properties (e.g. surface tension, plasticizer content...) and the conditioning of the substrates, as well as the processing conditions (e.g. ambient temperature, humidity...) will influence the processes of joining and the bonding. Customer tests under consideration of everyday production conditions are therefore absolutely necessary to define stable process parameters and to ensure that the product is fit for purpose. For best bonding results, the materials to be bonded should be free of dust, oil, and grease, and be dry. Avoid draft.

Our Application Technology Department and our Application Specialists will provide technical data to assist you in your choice of an appropriate product for your requirements. Please observe the information in the section "Remarks."

As a suggestion on how to establish high-quality bonding processes, please refer to DIN 2304.

**Specification:**

|                                                               |             |
|---------------------------------------------------------------|-------------|
| Viscosity at 20 °C [mPas]:<br>(Höppler, ball 4)               | 210 ± 40    |
| Density at 20 °C [g/cm <sup>3</sup> ]:<br>(Jowat test method) | 0.84 ± 0.01 |
| Solids content, 2 h at 90 °C [%]:<br>(Jowat test method)      | 16.0 ± 1.0  |

The values are always determined on the date of production.

**Crosslinking Agent:** If not agreed on otherwise, a mixing ratio of 100 : 5 parts by weight (adhesive : crosslinker) independent of the crosslinking agent is to be observed.

**Cleaning:** Jowat® Cleaner 401.50.

**Storage:** The product should remain stored in properly closed original containers, dry and cool (15 – 25 °C).

Storage temperature: not at temperatures below 0 °C;  
minimum storage temperature is +5 °C

For best-before date, please see container label.

After the elapse of the best-before date, it is essential that you again verify that the product is fit for your intended application.

**Packaging:** Information about packaging types and units is available upon request.

**Remarks:** **For further information concerning safety, handling, transport and disposal, please refer to the safety data sheet.**

The information on this data sheet is based on test results from our laboratories as well as on reported experience gained in the field by our customers. It can, however, not cover all parameters for each specific application and is therefore not binding upon Jowat, nor should it be relied upon in lieu of your own required testing. The information given in this leaflet does not represent a performance guarantee. Unless otherwise agreed with our customers, the values stated in the section "Specification" shall be regarded as the finally agreed upon product properties. No liability may be derived from the information contained herein nor from the information provided by our free technical advisory service.

## **Jowat Information**

Gluing as one of the most efficient methods of bonding is constantly gaining importance and expanding into new areas of application. At the same time, the number of substrates to be bonded is also growing at an unprecedented rate. New methods and equipment to process adhesives are developed.

The in-house R & D departments of Jowat are responding with intensive efforts to keep pace with these constant changes. A highly qualified team of chemists and engineers is using the latest techniques and brightest ideas to provide the utmost in advice our customers and to make sure that they get the adhesive which meets their needs.

Our information is based on test results from our laboratories as well as on experience gained in the field by our customers. This advice, however, cannot cover all eventualities for each specific application and as such is not binding for us. Please, contact our technical service department in each case to find out what the actual technical state of development for the respective product is, and request the latest data sheet. Any use of our product without this precautionary measure would be your sole responsibility.

The processing company itself must therefore test the adhesives manufactured by us for suitability in each individual case. This applies to the first use of a sample as well as to modifications during an ongoing production.

We are therefore requesting all our new customers to test our adhesives for suitability on original parts at conditions equal to normal processing conditions. The bond has then to be subjected to the actual stress which it would undergo when in use and has to be assessed. This test is absolutely necessary.

Customers who undertake modifications during a running production are requested to pass this information on to us. Please notify us when machines are set to new parameters as well as when the substrates to be bonded are changed. Only then will Jowat be able to provide our most up-to-date information to the processor using our adhesives.

The information given in this leaflet is based on practical experience and on results of tests in our laboratory, and does in no way constitute any guarantee of properties. No liability may be derived from these indications nor from the recommendations made by our technical advisory service.