

## Working guidelines for PUR furniture paints

### Description

Polyurethane paint, PUR paints or DD paints are names for coatings formed in a chemically analogous way, where an isocyanate component (hardener) reacts with polyol components (paint).

### Mixing ratio

The mixing ratios for paint, hardener and thinner provided for in the technical data sheets for the processing of 2K-PUR paints are generally stated in parts by weight (and not in parts by volume). The mixing ratio paint / hardener must be completely adhered to in order to achieve optimised hardening of the paint coat. Only then can the chemical and mechanical resistances stated in the technical data sheet be fulfilled. Adding no or insufficient hardener to the paint component may lead to significant film flaws (e.g. cracking) and clear quality loss.

The hardener must be stirred uniformly into the paint component. Good mixing is the prerequisite for a uniformly hardened and optically uniform coat surface.

### Pot life

For PUR paints, the paint and the hardener must be mixed before application. The mixture has a pot life of 5 hours up to one working day. After that time has elapsed, the paint may not be used anymore. In some cases, the hardened material may be mixed 1:1 after 24 hours with paint just mixed with hardener and then used (please refer to the technical data sheet!).

Exceeding pot life does not always lead to an obvious blurring or gelling of the paint. After the pot life is exceeded, a paint may also contain dissolved, cross-linked substances that only lead to blurring later, in the dried paint film. Therefore, please also refer to the pot life instructions included in the technical data sheets.

### Humidity

PUR hardeners react more quickly with water or alcohol than with PUR paints. Therefore, if due to unsuitable thinners, alcohol is added or humidity may have an effect, hardener is used by chemical reaction.

In order to avoid the impact of traces of moisture from thinning etc., it is advisable to let the mixed and thinned paint sit for 10 minutes before processing it. Traces of carbonic acid occurring through reactions can then escape.

### Thinners for PUR paints

Based on the reasons stated, only special thinners may be used, comprised of solvents free from water and alcohol. Moreover, the water separator on the compressor must be emptied continuously in order to avoid any moisture in the paint through spraying air. Naturally, all surfaces must be dry and not contain any inadmissible quantities of moisture from veneering or staining.

### Preparation of the surface

#### Wood sanding:

The last grinding must be effected in the direction of the grain!

Softwood -> grain 100 - 120

Hardwood -> grain 150 - 180

#### Deresination:

Wood with high resin content such as pine or Swiss stone pine should be deresinified and then grinded before painting. Resin leaks may delay or avoid drying. Please refer to the processing guidelines for deresination.

#### Bleaching:

On bleached wood, only 2K PUR paints with hardeners based on aliphatic polyisocyanate may be used. Using aromatic polyisocyanate may lead to considerable discolouring. After bleaching, effect a light interim grinding.

### **Wood staining:**

For 2K PUR paints, all staining systems designed for coating solvent-based paints may be used.

## **Minimum working temperature**

A minimum paint, object and room temperature of + 15°C is required.

## **Interim drying time**

PUR paints harden irreversibly, i.e. after a certain period of time, the paint coat becomes solvent-resistant. If you wait too long with the topcoat, no intercoat adhesion will occur. Therefore, always topcoat PUR paints within the time period stated in the technical data sheet.

## **Dark surface**

Particularly on dark surfaces, a formulation of a lower degree of gloss than G50 should not be used for the first coat.

Exceptions: brightening or "natural effect" finishes.

## **Cleaning the work equipment**

PUR paints harden even when thinned or mixed with solvents and become insoluble. Therefore, all work equipment such as brushes, sprayguns, paint lines, pouring machines etc. must be cleaned thoroughly immediately after use. Simply leaving it in thinner is not sufficient.

## **Explosion protection**

The solvents contained in 2K PUR paints may form a potentially explosive solvent vapour / air compound during spraying. Therefore, electric equipment in painting rooms and lighting must be installed with explosion protection.

## **Health protection**

When processing PUR paint, work hygiene measures must be taken. Please avoid inhaling paint aerosols. This can be ensured by the proper

use of a dust mask (Combination filter at least A2/P2 – EN 141/EN 143).

The hardener component of the 2K PUR paints contains polyisocyanate; they can aggravate the mucous membranes - in particular the respiratory organs - and lead to hypersensitivity. Sensitisation may occur from inhaling vapours or spraying mists.

When using 2K PUR paints, all protective measures according to the individual safety data sheet must be complied with.

During grinding works use at least dust filter P2 as personal protective equipment to protect of grinding and wood dust. We recommend using dust filter P3 for hardwood (e.g. beech, oak). The priority is to implement technical exhaust ventilations.

## **Residual emission**

PUR paints contain organic solvents that evaporate during drying. The major part of the solvents escapes within approx. 1 to 2 days, if the work pieces are stored openly at room temperature.

The residual solvents are usually given off into the ambient atmosphere during the first months of use and are responsible for the "new furniture smell".

Solvent concentrations in the room can certainly be initially detected but, due to their low concentration, represent no danger to the health of occupants.

How long it takes until the low concentrations of residual solvents evaporate depends on the local conditions and, particularly, on the airing habits of the user.

The quantity of residual solvents initially included in a paint film is highly dependent on the processing conditions. The residual solvent content is low if the application quantities given in the technical data sheets are observed and the coated surfaces are dried with intermediate drying times (e.g. drying overnight at room temperature 20°C with good ventilation).

The following factors delay the release of solvents:

- High layer thickness of the individual paint coats

- Short interim drying times
- Low room temperature during application and drying
- Low air circulation rates with low fresh air share during drying
- Quick reassembly after coating

**In order to keep residual solvent contents as low as possible and in order to avoid complaints based on odour from residual emissions, we recommend to openly store the painted parts before assembly and erection for 5 to 7 days in a well ventilated room at room temperature (approx. 20°C).**

### **Storage stability**

While PUR paints have a storage stability of 1 year or more, the storage stability of PUR hardeners is limited. The expiry date is printed on the label. Therefore, always shut the container tightly and use open containers as soon as possible.

### **Decopaint Directive**

Starting on 1 January 2007, the Solvents Ordinance (LMV 2005) shall take effect in Austria and the Ordinance for solvent-based paints and varnishes (ChemVOCFarbV) in Germany. These ordinances do not relate to the painting of furniture surfaces, but instead to the coating of fixed building components such as stair steps, wooden ceilings or flooring. In these areas of use, 2K PUR paints may only be processed in spray stands complying with the VOC Directive.

### **ADLER Nova-Solve**

This decopaint-conforming furniture paint system is to process as a conventional 2K PUR paint. But note some special features due to the proportional containing water.

- The working equipment and containers must be resistant to corrosion.
- Rinse and wash thoroughly the spraying equipment with ADLER Waschverdünnung (dilution) before and after the use of ADLER Nova-Solve in order to avoid symptoms of incompatibility when changing material.

### **Additional processing guidelines**

The following special processing guidelines for 2K PUR paints are also available:

- Guidelines for Glass painting
- Guidelines for Applying Clear High Gloss Finish
- Guidelines for Applying High Gloss Finish with Opaque Colour Coatings

**Please refer to our information in the technical data sheets and in the safety data sheets.**