





## **Polyurethane Dispersions**

### **O76805 Polyurethane Dispersion PU 52**

As a replacement for the unfortunately no longer available Polyurethane Dispersion No. 76800, we have been offering this product since 2008. The plasticizer-free polyester-polyurethane dispersion has good UV stability and is also suitable for exterior applications. It has good pigmentability, dries transparent, glossy and very elastic and is particularly suitable for coatings on flexible substrates such as paper or textiles. We do not recommend the addition of thickeners O7690 or O7691.

O76806 Polyurethane Dispersion No. 61 PC

Polycarbonate Polyurethane Dispersion No. 61 PC is harder and more transparent than Dispersion PU 52, but the dried film remains highly elastic. Like Dispersion PU 52, 61 PC is also plasticizer-free and suitable for exterior applications. The polyurethane dispersion cannot be thickened with Thickeners O7690 or O7691.

## **Additives - Thickeners**

### **O7690 Thickener ASE 60**

ASE 60 thickens alkaline acrylic dispersions and can be used to make the colors pasty. The thickener should be used very sparingly and no more than 10% should be added to the dispersion. The viscosity of the dispersion increases afterwards. Dispersion K 19 can be thickened excellently with ASE 60.

O7691 Thickener K 15

Thickener K 15 is a thickening agent for acrylic dispersions, synthetic resin plasters and fillers or adhesives. The thickener is free from film forming aids, solvents and plasticizers. It thickens gel-like and makes the paint short. Thickener K 15 is well suited for Dispersion K 489 and 500, Dispersion K 9 and Primal AC 35. The thickener is stirred into the paint or dispersion drop by drop until the desired consistency is reached. Stirring should not be too fast to avoid foaming. Caution: The viscosity of the dispersion increases afterwards, the final state is reached only after 12 hours!

## **Cellulose glues**

Instead of thickeners, cellulose glues can be used to give the acrylic binder a creamy consistency. Suitable are O6360 Cellulose Glue K 300, O6361 Cellulose Glue K 1000 or O63706 Klucel G. Cellulose glues retain moisture longer and therefore also delay drying. Depending on the mixing ratio, the paint also becomes more or less swellable or water-soluble, therefore cellulose glue must never be added to exterior paints!

## **Arbocel**

If the paint cracks as it dries, an addition of O59750 Arbocel BC 1000 can help. The cellulose fibers act like small reinforcements and prevent or reduce cracking. Like cellulose glues, Arbocel reduces weathering resistance, so it is only suitable for interior applications!

### **Drying retarder**

In general, acrylic paints are popular because of their rapid drying. However, there are applications where it is useful to delay drying, e.g. to be able to work wet-on-wet. For this purpose, we offer two auxiliaries: O843580 Golden Retarder: The retarder is an additive that increases the open time of acrylic paints. The retarder evaporates slower than water, allows wet-on-wet painting and also reduces the formation of skin on the palette while working.

## **O81028 LASCAUX® Retarder**

Lascaux® Retarder slows the drying of acrylic paints on non-absorbent substrates. Dried paints to which retarder has been added can still be dissolved by water or a fresh application of paint for a longer period of time. The retarder can be added to the original colors undiluted or diluted with water in any ratio (up to 1:10) in a quantity ratio of 10-30%.

When using drying retarders, please note that the time required for complete drying may be considerably longer. As when dealing with thickeners or defoamers, the following applies here: dose very sparingly! The paint remains more sensitive to moisture, so we do not recommend the use of retarders for exterior paints.

## **O7860 Defoamer**

To prevent foaming in dispersions, 0.1-0.5% can be added. The defoamer is best added at the beginning of paint production when the pigments are being mixed or diluted with a little water. However, this additive should be used extremely sparingly, because too much defoamer can lead to staining. Therefore, Dr. Kremer's good advice: Please use at most half the amount of defoamer that you consider necessary!

### **Preservative**

For the preservation of acrylic dispersions, thickener solutions and mixed acrylic paints against bacteria and mold, we recommend 78740 Preventol® ON extra. Preventol is a white, platelet-shaped granulate which is dissolved in water and added to the dispersion in a concentration of about 0.1-0.3 %.

## **Wetting Agent**

As a general rule, it is advisable to first sump, tarnish or rub pigments into water and only then add the acrylic dispersion to prevent lumps from forming in the ink.

There are pigments that are difficult to incorporate into aqueous binders. This applies above all to the synthetic-organic pigments, but also to the dayglow paints and some others. If these pigments are attempted to be mixed or rubbed into water, they float to the top like grease. Adding alcohol (ethyl alcohol, isopropanol) reduces the surface tension of the water and makes it easier to work the pigment. In some cases, it is better to use a wetting agent, as the alcohol can change the dispersion.

O78032 Orotan 731 K is a dispersing agent for all pigments in acrylics. The pigment is mixed with ¼ - 1 % Orotan (in difficult cases up to 5 %). One should proceed slowly, since the Orotan can increase the formation of foam when stirring rapidly. Under no circumstances should more than 5 % Orotan be added, as this can thicken the color!

## **Shelf life of Dispersions**

Most acrylic dispersions are pre-preserved and can be stored for 12 months. In the case of Primal AC 35 and Glaze Stain K 52, the shelf life may be somewhat shorter. In the case of longer storage, we recommend checking whether the dispersion is still in good condition. If a dispersion has become lumpy, moldy, smells spoiled or no longer dries properly, it should no longer be used.

On the suitability of pigments in acrylic dispersions

Most pigments are not problematic when used in acrylic dispersions. There are only a few exceptions:

We generally do not recommend toxic pigments for acrylic dispersions. Copper pigments such as Bremer Blau, Ploss Blau and Blue Bice are not stable in this binder and may discolor. Green earths are generally not suitable for acrylic dispersions. True green earths contain reactive, swellable layer silicates that cause the acrylic dispersion to become smeary or flocculate, clump or crack during drying.

Please refer to our pigment suitability list!

## Overview of Dispersions

Dispersion	MFT* (°C)	FK** (%)	Tg*** (°C)	pH	Viscosity (mPa·s)
O75075 Dispersion K 52	< 5	28-30	16	6.5-7.5	<= 200
O7525 Primal® WS 24	0	34 ±1	-46	7-8	<= 600
O75305/O75355 Dispersion K19	~ 0	42		7-8	50-300
O75367 Dispersion K 9	1	50-51		8-9	<= 500
O7560 Dispersion K 500	~ 7	50 ±1	9	9.5 ±0.5	1100-4500
O7590 Acryldispersion 500 D	> 1	50 ±1	appr. -13	3.5-4.7	15-30
O7600 Dispersion K 498	~ 5	50 ±1	13	9 ±0.5	3000-10000
O76101 Dispersion K 360	< 0	59-61	-31	2-3.5	< 1000
O76805 Polyurethan-Dispersion PU 52	~ 2	38-40	-36	7.5-8.5	50-500
O76806 Polyurethan-Dispersion 61 PC	~ 1	37-39	-30	7.5-9	50-500

\* **MFT:** Minimum film forming temperature

\*\* **FK:** Solid content

\*\*\* **TG:** Glass transition temperature