

## **O75075 - O76806 Synthetic Resin Dispersions**

Kremer Pigmente offers pure acrylic dispersions and polyurethane dispersions for various applications. To help you select a dispersion suitable for your purposes, we have briefly described the properties of the individual dispersions below and summarized the technical data in a table.

### **Acrylic Dispersions**

#### **O75075 Dispersion K 52**

Dispersion K 52 is a slightly milky, almost transparent acrylic dispersion with a very small particle diameter. It is excellently suited as a binder for XSL wood stains, for watercolor-like glazing techniques and for particularly matt color layers. Due to the weak film formation, paint layers bonded with Dispersion K 52 are not as abrasion-resistant as those bonded with other acrylic dispersions. The thin-bodied dispersion has good penetration properties and is therefore also suitable for consolidating powdery paint layers, as a deep primer or for impregnating absorbent substrates.

#### **O7525 Primal® WS 24**

Primal WS 24 is a plasticizer-free, low viscosity, slightly milky dispersion recommended as a deep penetrating acrylic solidifier for mortars or as a primer for acrylic painting on walls and wood. Dried films of Primal WS 24 can be removed with alkalis.

#### **O75305 Dispersion K 19 Gloss**

Dispersion K 19 is the replacement for Dispersion K 6, which is no longer available. Dispersion K 19 Gloss forms a transparent, very hard, glossy film. The dried film does not stick. However, this dispersion is not very elastic and when applied in film thicknesses over 1 mm, the film is prone to breakage in case of strong bending. The dispersion K 19 Gloss can be easily diluted with up to 4 parts water. It has been developed for waterborne clear coats and glazes on exterior wood windows. For exterior use, additional UV protection is required. For artistic purposes, the clear transparency, as well as the uniform gloss when applied undiluted, is particularly impressive. The addition of defoamer may lead to staining!

#### **O75355 Dispersion K 19 Matt**

Dispersion K 19 Matt has comparable properties to Dispersion K 19 described above. A matting agent has been added to this dispersion, which settles on prolonged storage. The dispersion should therefore be shaken well before use!

#### **O75367 Dispersion K 9**

Dispersion K 9 is the replacement product for Primal AC 33, which is no longer available and has similar properties. The pure acrylic dispersion is free from plasticizers, ammonia and formaldehyde and therefore comparatively low-odor. The unpigmented dispersion remains tacky for some time after application. It has a high pigment binding capacity, is

more elastic than the other acrylic dispersions and is versatile. Due to its high elasticity, it is suitable for painting on flexible image carriers such as canvas or textiles. With highly diluted K 9, relatively matte or glazed color applications are possible, but the dispersion can also be thickened well and applied more pasty. It is also suitable for wall paints in combination with cellulose glue or with water glass or Syton X 30.

### **O7560 Dispersion K 500**

Dispersion K 500 is a well pigmentable, plasticizer-free pure acrylic dispersion. The dispersion dries to an elastic, transparent film which may be slightly tacky at room temperature. It is suitable for the formulation of wash-resistant coatings for textiles and for the production of artists' acrylic paints. Furthermore, the dispersion can be used for the formulation of scrub-resistant coatings, as an aqueous primer for absorbent substrates, for resin-bonded plasters and as an additive to hydraulic-setting compounds.

### **O7590 Acrylic Dispersion 500 D**

Acryldispersion 500 D is an acidic pure acrylic dispersion which dries clear, tear-resistant and flexible. It is mainly used for the formulation of adhesives and pressure sensitive adhesives. For use as a pigment binder, the pH value should be adjusted to 8-9, e.g. with ammonia.

### **O7600 Dispersion K 498**

Dispersion K 498 is a particularly inexpensive pigment binder which dries clear, with medium gloss and medium hardness. The dispersion is plasticizer-free and has a wide range of uses: it is suitable as a binder for the production of acrylic paints, primers, weather-resistant facade paints, for synthetic resin plasters and fillers. Dispersion K 498 is suitable as an additive to silicate dispersions such as O77750 Potassium Water Glass and O31430 Syton X 30.

### **O76101 Dispersion K 360**

Dispersion K 360 is a pure acrylic dispersion especially for elastic, permanently post-adhesive coatings, for example for the production of self-adhesive coatings. It is the successor product to Plextol® D 360, which is no longer available, but with a different chemical composition and lower pH value.

## **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