

Product Information

Polytone K – Series

Version: 09/2019

The grades of the Polytone K series are neutral, non saponifying ketone formaldehyde resins, which are prepared by alkaline condensation of cyclohexanone with formaldehyde. With the addition of these light hard resins in coating systems a number of properties of coating systems, e.g. gloss, levelling, hardness, adhesion and covering capacity will be improved.



On account of its wide compatibility with almost all usual binders and their universal solubility in almost all paint solvents commonly used in the paint industry, Polytone K-Types are suitable as a combination binder in various lacquers, printing inks as well as adhesives.

Advantages of the Polytone K Series:

- high brightness
- excellent light fastness
- very low tendency to solvent retention
- excellent compatibility
- high solubility

Depending on the application, Polytone K-Types contributes to a significant improvement of:

- drying
- gloss
- hardness
- adhesion
- UV-resistance
- body

Application and Properties

Polytone K-Types are being used as an alternative binder in nitrocellulose combination lacquers (clear and pigmented) for wood and metal and in general industrial coatings. They contribute to a significant improvement of gloss and hardness as well as the adhesion improvement on different substrates (for example various plastics and metals). Polytone K-Types increase the solid content, which results in a **reduction in the VOC**.

In wood primers a rapid solvent release and a related higher drying speed or rather a faster sanding behavior is achieved through the use of Polytone K-Types. In pigmented systems Polytone K-Types improves the pigment loading capacity, so that even at high pigmentation, an excellent gloss can still be obtained.

Use of the resins in ballpoint pen inks and pastes ensure a fast drying of the ink on the paper after writing, without drying out of the ink in the writing instrument.

With the addition of Polytone K-Types in paper lacquers a higher gloss and outstanding flexibility and abrasion resistance is achieved. The advantages of the resins in paper lacquers are their lightfastness and their brightness.

Application examples:

Construction industry	→ floorings
Printing Inks	→ gravure printing → flexographic printing
Paints and Coatings	→ paper coatings → coating and varnishes for wood → metal paints → nail polish → hot sealings → coatings for plastics
Adhesives	→ adhesives (e.g. PU-Systems, radiation cured adhesives)
Inks	→ ball point pen inks

Technical Data:

	Polytone K-93	Polytone K-94	Polytone K-95	Polytone K-96	Polytone K-97
Chem. denomination	Cyclohexanone-Formaldehyde-Condensation Resins				
Delivery form	pearls				
Melting Point [°C]	98 - 103	90 - 95	100 - 105	105 - 110	110 - 120
Flow time [s]*	15 - 17	17 - 19	19 - 21	20 - 23	22 - 25
Acid Number [mg KOH / g resin]	≤ 1,0	≤ 1,0	≤ 1,0	≤ 0,5	≤ 0,5
OH-Number [mg KOH / g resin]	265 - 285	200 - 220	230 - 250	230 - 250	230 - 250
Iodine number 50% Alcohol	≤ 1,0	≤ 1,0	≤ 1,0	≤ 1,0	≤ 1,0
Characteristics	<ul style="list-style-type: none"> ✓Low Melting/Softening ✓Improve Inter Coat Adhesion ✓Improves Wetting 	<ul style="list-style-type: none"> ✓Good Adhesion ✓Improved Gloss 	<ul style="list-style-type: none"> ✓Good Adhesion ✓Improved Gloss 	<ul style="list-style-type: none"> ✓Hardness ✓Excellent Thixotropic Properties ✓Suitable for Ball Point Pen Ink ✓Quick Drying 	<ul style="list-style-type: none"> ✓Hardness ✓Excellent Thixotropic Properties ✓Suitable for Ball Point Pen Ink ✓Quick Drying

*B4 Ford-Cup – 50% sol. alcohol

Solubility:

Polytone K-Types are soluble in almost all solvents commonly used in the paint industry.

Easy soluble in:

→ alcohols	→ ester	→ some aromatic hydro carbon
→ ketones	→ ether acetate	→ chlorine – hydro carbons

Insoluble in:

→ water	→ methanol	→ aliphatic hydro carbons
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Compatibility with binders:

Polytone K-Series are compatible with many coatings raw material including:

→ nitrocellulose	→ chlorinated rubber	→ melamine resins
→ benzyl cellulose	→ styrenated alkyd resins	→ maleic resins
→ ethyl cellulose	→ urethane acrylates	→ saturated polyester resin
→ cellulose acetate	→ aldehyde resins	→ polyamide resins
→ polyvinyl chloride	→ ketone resins	→ modified phenolic resins
→ vinyl chlorid-copolymer		

Limited compatibility with:

→ acryl resins	→ calcium resinsates
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Recommended storage conditions

Store under cool dry conditions; storage temperature above 30°C should be avoided. When stored under proper conditions the product has a shelf life of 12 month from the date of manufacture.

Packaging

Available in 25-kg-bags.