

STRUCTURAL FORMULA



CAS Number - 25054-06-2
Trade Names - KTR-80, KTR-100, KTR-118, KTR-123
Chemical Name - CYCLOHEXANONE-FORMALDEHYDE RESIN

1. GENERAL DESCRIPTION

Ketonic Resins (KTR) dissolve readily in alcohol (except methanol), Ketones (except acetone) ester and in low chlorinated hydrocarbons. It is neutral, light in colour and inert to saponification. Ketonic Resins have good pigment-wetting properties. This leads to brilliant gloss even at high pigmentation. In printing inks, KTR improves solid content, hardness, adhesion and drying time. KTR also increases yield of coating systems.

2. PACKING

KTR is delivered in 25 kg multi-ply paper bag. One pallet contains 900 kgs 36 bags. One 20 ft. container contains 18 metric tons.

3. TRANSPORTATION& STORAGE STABILITY

Transport and store the product protected against the influence of water and UV-radiation at temperature of maximum 30deg.C. When store under proper condition, storage stability is of one year.

4. SAFETY& HANDLING

Ketonic Resin is not classified as a dangerous material. Refer to our MSDS.

SUPARNA CHEMICALS LTD
54 A Mittal Tower, Nariman Point, Mumbai India.
Phone No: 022-22027446/7/8/9
Email Id: domesticsales@suparnachemicals.co.in
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5. APPLICATIONS

Nitro-cellulose paints, vinyl chloride copolymer systems, adhesives, printing inks, ball-point pen pastes, toner, pigment, pastes, adhesives, hot melt compounds, PU-systems, varnish paints for surface treatment of wood, metal and paper.

PRINTING INKS

Ketonic Resins (KTR) have good solubility in ethanol and fairly high softening point. These properties help KTR's use in flexographic and gravure printing inks. It imparts gloss, enhances adhesion, increases solids content and improves drying properties. It is used in various kinds of printing inks made from alkyd resins, maleic resins, nitro cellulose, alkyd resins and polyvinyl butyral.

BALL-POINT PEN INKS

KTR grades, particularly KTR 123 is used in ball-point ink pastes because of its unique property of quick setting after drying. It has high hydroxyl value which gives good thickening effect through hydrogen bonding and this property prevents inks from drying out, at the same time, helps quick setting after drying.

NITROCELLULOSE PAINTS

In nitrocellulose paint, KTR grades improve adhesion and polishing characteristic. All KTR grades are suitable for all types of nitrocellulose paints.

PAPER VARNISHES

KTRs are used in paper varnishes for their brightness, light fastness and neutral properties.

PUR-SYSTEMS

Free hydroxyl groups in KTR react easily with isocyanates. This property is utilized for its use in PUR systems.

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HOT MELT COMPOUNDS

KTRs are used to control melt viscosity and hardness of cooled mass of hot melt compound used to protect equipment parts.

ADHESIVES

KTRs are used in isocyanate based adhesive systems and also in water clear and radiation cured adhesives.

VINYL CHLORIDE - COPOLYMER SYSTEMS

In vinyl chloride copolymer systems KTR improves processability.

6. Specifications

Sr. No	CHARACTERISTICS	SPECIFIED VALUE	SPECIFIED VALUE	SPECIFIED VALUE	SPECIFIED VALUE
	Grades	KTR 80	KTR 100	KTR 118	KTR 123
1.	APPEARANCE	White Prills	White Prills	White Prills	White Prills
2.	SOFTENING POINT (0C) (DIN 53181) CAPILLARY METHOD	85 - 95	95 - 105	105 - 115	105 - 115
3.	VISCOSITY OF 50% SOLN. IN BUTYL ACETATE AT 250C (cps)	30 - 60	75 - 95	100 - 120	110 - 140
4.	MOISTURE (%W/W) (Max.) (DIN 517771)	3.0	3.0	3.0	3.0
5.	ACID VALUE (mgKOH/gm) (Max.) (DIN 53402)	0.3	0.2	0.2	0.2
6.	HYDROXYL VALUE i) OLD METHOD ii) (DIN 53240 Mod.)	165 – 190 180 - 210	170 – 200 210 - 240	180 – 210 220 - 250	200 – 230 250 - 280
7.	IODINE COLOUR NO. OF	2.0	2.0	2.0	2

7. Solubility

SOLUBILITY	Synthetic Resins		
Grades	KTR-100	KTR-118	KTR-118
Aliphatic hydrocarbons	-	-	-
Aromatics	+	+	+
Ethers	+	+	+
Alcohols	++	++	++
Esters	++	++	++
Glycol ethers	++	++	++
Ketones	++	++	++
Solubility was determined up to 50 % by wt.			
++ = soluble + = limited solubility - = insoluble			
SAFETY AND HANDLING			
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8. Compatibility

COMPATIBILITY	Synthetic Resins		
	KTR-100	KTR-118	KTR-123
Acrylic Resins	-	-	-
Calcium Resonates	+	+	+
Hydrocarbon Resins	+	+	+
Aldehyde Resins	++	++	++
Alkyd Resins	++	++	++
Carbamide Resins	++	++	++
Cyclized Rubber	++	++	++
Epoxy Resins	++	++	++
Glycerine Ester Resins	++	++	++
Ketone Reins	++	++	++
Maleic Resins	++	++	++
Melamine Resins	++	++	++
Nitrocellulose	++	++	++
Phenolic Resins	++	++	++
Phthalic Resins	++	++	++
Polyester Resins	++	++	++
Rasols, Non-Plasticized	++	++	++
Rosin-Modified Resins	++	++	++
Styrene-Allylalcohol Copolymers	++	++	++
VC Copolymers	++	++	++
Zinc Resonates	++	++	++

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9. Comparison with Competing Products

Comparison of KTR 100, KTR 118 & KTR 123 With Competing Products

Company	Suparna	RESINE ITALIANE	LEUNA	EVONIK	LAWTER					
Product	KTR-100	KTR-118	KTR-123	RESANON 121	L,RESIN	CA	SK	K-1717B	K-1717	K-1717HMP
Appearance	White Prills	White Prills	White Prills	-	Yellow Prills	Gritty White powder	Palletized	prills/Powder	Yellow prills/Powder	Pale Amber
Softening point (OC)	95-105	105-115	105-115	110-110	95-105	95-108	110-120	95	100	100
Moisture % (Max)	3.0	3.0	3.0	-	4.0	<= 4.0	-	-	-	-
Acid Value (mgKOH/gm) Max	0.2	0.2	0.2	< 1	0.3	<0.3	<1	-	-	-
OH Value	170-200	180-210	200-230	240-280	-	200	325	135	270	270
Iodine No. Max.	2.0	2.0	2.0	1.4-1.6	2.0	-	-	-	-	-
Vls(50%)in Butyl Acetate at 25°C (cps)	75-95	100-120	110-140		35-60	-	-	-	-	-

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COMPARISON OF COMPATIBILITY & SOLUBILITY WITH COMPETING PRODUCTS

Company	Suparna	RESINE ITALLANE	LEUNA	EVONIK	LAWTER					
PRODUCT GRADE	KTR-100	KTR-118	KTR-123	RESANON 121	L,RESIN	CA	SK	K-1717B	K-1717	K-1717HMP
Nitrocellulose	++	++	++	++	++	++	++	++	++	++
Chlorinated Rubber	++	++	++	+	++	++		++	++	++
Vinyl Chloride Polymer	++	++	++	+	++	++		++	++	++
Polyacrylates	+	+	+	+	+	+	+	+	+	+
Urea Resins	++	++	++	++	++	++	++	++	++	++
Melamine Resins	++	++	++	++	++	++	++	++	++	++
Alkyd Resins	+	+	+	+	+	+	+	+	+	+
Alcohols	++	++	++	++	++	++	++	++	++	++
Ester	++	++	++	++	++	++	++	++	++	++
Ketones	++	++	++	++	++	++	++	++	++	++
Aromatics	+	+	+	+	+	+	+	+	+	+

Solubility was Determined up to 50% by Wt.

++ = soluble, + = limited solubility, - = insoluble

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