Product Data Sheet

K-KAT® 6212
Urethane Catalyst

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K-KAT 6212 is an effective catalyst for the reaction of isocyanate with hydroxyl groups. It is a zirconium chelate complex dissolved in a reactive diluent.

ADVANTAGES:

Excellent cure response
Excellent exterior durability
Does not contribute to the hydrolysis of polyester resins
Short tack free time
High selectivity for -NCO/OH reaction over -NCO/water reaction
Pot life adjustable with stabilizer

TYPICAL PROPERTIES:

Appearance	Clear, straw liquid
Specific gravity, 25°C	0.98
% Active (metal chelate)	2

SOLUBILITY:

Alcohols, esters, ketones	Soluble
Aromatic hydrocarbon	Soluble
Glycol ethers and glycol ether acetates	Soluble
Aliphatic hydrocarbons	Soluble
Water	Limited, will hydrolyze

APPLICATIONS:

Polyurethane coatings, adhesives, RIM, casting resins and polyurethane resin synthesis, water-borne two component coatings.

TYPICAL USAGE LEVELS:

0.3-2.0% on total resin solids. Refer to chart on the back of this page for more information on suggested use levels.

INCORPORATION:

Addition of the catalyst to the polyisocyanate is suggested as the best method to assure catalytic activity. See page 2 for complete details.

SHELF LIFE:

12 months from the date of manufacture, when stored at ambient conditions in the original container.

HANDLING & STORAGE:

K-KAT 6212 is sensitive to moisture. Exposure to atmospheric moisture during storage should be avoided. Consult the MSDS for safe handling. This product is designed to be premixed with the polyisocyanate component or to be added just before application of two component systems. Avoid contact with metals.

REGULATORY:

Please refer to Section 15 of the Material Safety Data Sheet for information

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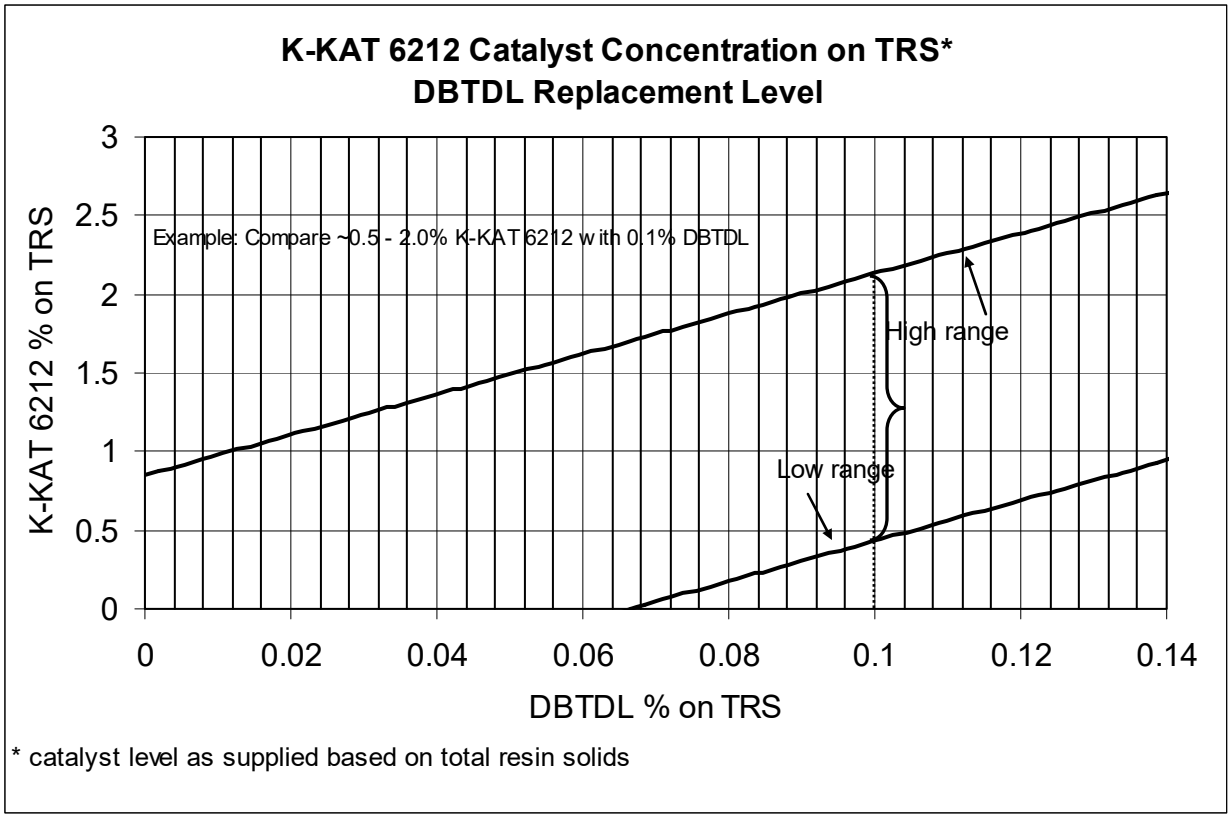

* catalyst level as supplied based on total resin solids

Formulation and Handling Information:

K-KAT® 6212 catalyst is recommended for application in two component polyisocyanate/hydroxyl systems which require a fast cure rate and reduced reaction with water. K-KAT 6212 is therefore suitable for two component high solids coatings or RIM applications where a plural component mixing system is used or where a short potlife is acceptable. The potlife with this catalyst can be increased by adding a diketone like 2,4-pentanedione to the formulation. K-KAT 6212 can also be used in the synthesis of polyurethanes where the destruction of the catalyst after PU synthesis is desired. K-KAT 6212 is based on a zirconium chelate and is therefore environmentally acceptable. K-KAT 6212 catalyst has also shown excellent performance and minimum gassing in two component water-borne coatings. The catalyst should be added to the isocyanate crosslinker. A small level of 2,4-pentanedione added to the polyol component can extend potlife and improve gloss. A higher level of 6212 is required in water-borne coatings (1-3 % based on resin solids) compared to high solids coatings.

K-KAT 6212 operates by a different mechanism compared to common organotin catalysts by activating the hydroxyl groups and not the isocyanate groups. Since K-KAT 6212 does not catalyze the hydrolysis of polyester resins there is little or no effect on exterior durability with these systems.

Like most metal chelates K-KAT 6212 catalyst is sensitive to moisture and should be added to that part of the system which is water free or one that contains a water scavenger. Water in excess of 0.1% in the system will deactivate the catalyst within several hours. Addition of the catalyst to the polyisocyanate is suggested as the best method to assure catalytic activity. Addition of 4 % of K-KAT 6212 to an HDI trimer has exhibited more than two weeks stability at 50°C.

The activity of K-KAT 6212 can also be affected by the presence of acids. In the presence of free carboxylic acids the rate of the reaction of the catalyst is substantially reduced. Polyols with an acid number of less than 10 are recommended. Neutralization of the acid with an amine will eliminate this effect of reduced reaction rate. Amines do not function as co-catalysts with 6212. Addition of a cycloaliphatic epoxy can also eliminate this reduction in reaction rate. K-KAT 6212 may also be deactivated by the presence of phosphoric acid. Some polyether polyols may contain residual phosphoric acid which is added to neutralize the potassium hydroxide used during the manufacturing operation.

K-KAT 6212 is not recommended for blocked isocyanates and heat cured applications when the cure temperature exceeds 80°C (176°F).