

## K-KAT<sup>®</sup> XK-651 Urethane Catalyst



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K-KAT XK-651 is a versatile bismuth carboxylate catalyst designed for blocked isocyanate, two component urethanes, and one and two component silane terminated coatings. K-KAT XK-651 is designed to provide improved hydrolytic stability compared to other bismuth carboxylate catalysts.

**ADVANTAGES:** Excellent replacement for tin catalysts  
Can be used in ambient, force dry and bake systems  
Excellent gloss retention  
Excellent exterior durability  
Improved hydrolytic stability compared to other bismuth carboxylates

<b>TYPICAL PROPERTIES:</b>	Appearance	Clear, amber liquid
	% Metal	25
	Specific gravity, 25°C	1.2

**SOLUBILITY:** K-KAT XK-651 is soluble in aromatics, aliphatics and glycol ethers. It has limited solubility in esters and alcohols. K-KAT XK-651 is insoluble in water.

**APPLICATIONS:** K-KAT XK-651 is recommended for 2K and blocked isocyanate coatings. K-KAT XK-651 can replace many heavy metal and/or toxic catalysts used in the production of urethane elastomers, foams and coatings.

**TYPICAL USAGE LEVELS:** 0.1-0.5% as supplied on total resin solids for 2-component polyurethanes.  
1.0-2.5% as supplied on total resin solids for blocked isocyanates.

**INCORPORATION:** K-KAT XK-651 can be added directly to a single component blocked isocyanate system or the polyol component of a 2K system.

**SHELF LIFE:** 24 months from the date of manufacture, when stored at ambient conditions in the original container.

**HANDLING & STORAGE:** Safe handling of this product should include the use of a respirator, safety glasses and gloves. Avoid breathing vapors - use with adequate ventilation. K-KAT XK-651 is sensitive to moisture; therefore, exposure to atmosphere during storage should be avoided. Product should be stored in a cool, dry environment away from sunlight and excessive heat. Consult the Material Safety Data Sheet prior to use.

**REGULATORY:** Please refer to Section 15 of the Material Safety Data Sheet for information.

## K-KAT XK-651 Improved Hydrolytic Stability vs. Competitor Bismuth Carboxylate

The graph below demonstrates improved stability with K-KAT XK-651 compared to a competitive bismuth catalyst in a 2-component urethane system. The graph includes surface dry times of films prepared with catalyzed polyol components that were aged for 5 weeks. The catalyst dosages were based on equal bismuth content on total resin solids (0.2% Bi), and the systems were spiked with 0.1% water based on total resin solids. The results show only a slight increase in the surface dry times of the films prepared with the aged K-KAT XK-651 catalyzed polyol components while the surface dry times of the films catalyzed with the competitor bismuth carboxylate increased significantly.

Polyol Component	Weight %
K-FLEX® XM-359	38.90
PM Acetate	29.95
Flow and leveling agent	0.14
Water	0.07
Isocyanate Component	
Hexamethylene diisocyanate biuret	30.94
	100.00
Formulation Characteristics	
NCO:OH	1.04
% water spike on total resin solids	0.1
Total Resin Solids, %	69.8

