

K-FLEX[®] Plasticizers for Vinyl Leathercloth Applications

K-FLEX[®] plasticizers are known for their excellent performance and balance of properties. They are non-phthalate and have positive attributes from a product safety and health perspective compared to other choices.

For many years, our customers have turned to dibenzoate plasticizers because they offer the best overall performance and value, delivering excellent performance features to a growing range of applications, such as adhesives, sealants, paints, coatings, and PVC plastisols. K-FLEX[®] products are also known for their compatibility with a wide range of polymers, particularly polar materials. This makes them highly effective in many of the most widely used non-olefin based polymers.

Emerald Kalama Chemical also produces sodium and potassium benzoate, benzoic acid and intermediates, and specialty flavor and fragrance ingredients, which the company sells globally through its distribution partners.

K-FLEX[®] plasticizers can be used alone or as a blend with other plasticizers to achieve extremely valuable performance and manufacturing benefits. Characteristics critical to the look and performance of vinyl leathercloth can be improved through the use of K-FLEX plasticizers. Additional benefits can be achieved with some minor formulary adjustments.

- Reduce gel and fusion temperatures by up to 34°C.
- Reduce the temperature required to achieve the optimal blow ratio in the foam layer by up to 10°C.
- Improve traffic stain resistance of the top skin layer by as much as 30% with only a partial use of K-FLEX plasticizers.
- Achieve a low density, more uniformly blown, fine foam and a higher quality finished product.
- Increase production due to faster gel / fusion times, allowing greater production speed.

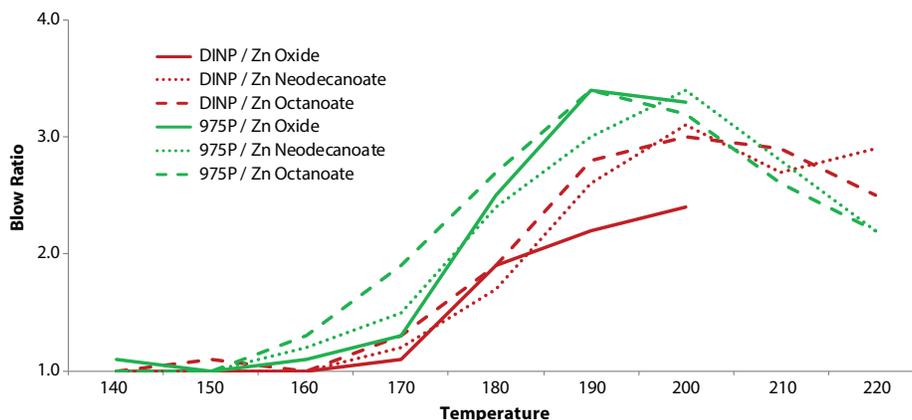


Figure 1. Effect of various kickers in chemically blown foam utilizing either DINP or K-FLEX[®] 975P plasticizers. Substitution of DINP with K-FLEX 975P can result in a 42% reduction in foam density while reducing processing [or foam blow] temperatures by 5%.

K-FLEX® plasticizers impart lower gelation/fusion temperatures, thus increasing production speeds, and they create an overall optimized cell structure while improving stain resistance and maintaining good rheology and economy.

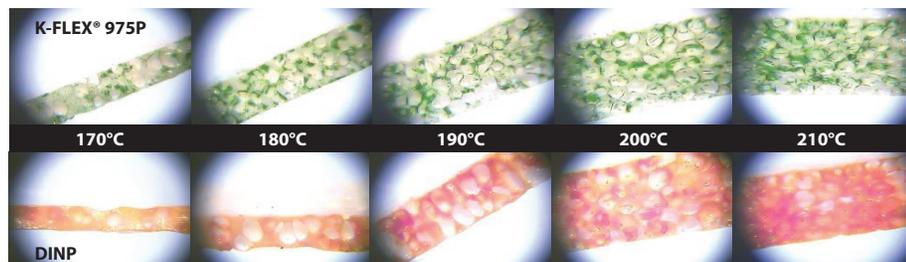


Figure 2. Cross section of foam blow utilizing K-FLEX® (top) and DINP (bottom) plasticizers. K-FLEX plasticizers allow the vinyl leathercloth to achieve a low density, fine, uniform cell structure at lower temperatures.



Figure 3. Stain resistance (oil brown) is improved in blends of K-FLEX® 975P with DOTP. When utilizing only 30% K-FLEX plasticizers, a 30% improvement in stain resistance can be achieved.

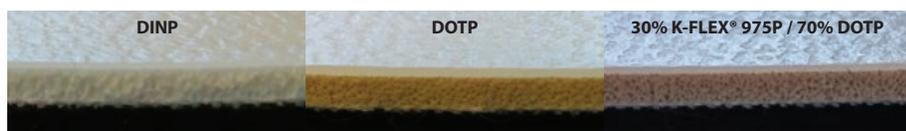


Figure 4. Cross section of vinyl leathercloth. Through the use of K-FLEX® plasticizers, utilize less material and reduce the weight of the finished materials to achieve the same foam thickness. K-FLEX plasticizers can also enhance the performance of less compatible plasticizers.

Emerald Kalama Chemical is a business group of Emerald Performance Materials, a manufacturer of additives and polymers that make your products last longer, look, taste, smell, or perform better. We are a world-scale producer of toluene oxidation products, shipping 425 million pounds annually to nearly 70 countries across the globe. Products include benzoic acid and various benzoate and dibenzoate ester, alcohol and aldehyde derivatives for food preservatives, flavor and fragrance ingredients, coalescents and industrial applications. Manufacturing in Kalama, WA (USA), Rotterdam, Netherlands, and Widnes, United Kingdom. Serving our customers globally.

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