

## K-FLEX<sup>®</sup> Plasticizers for Resilient Vinyl Flooring Applications

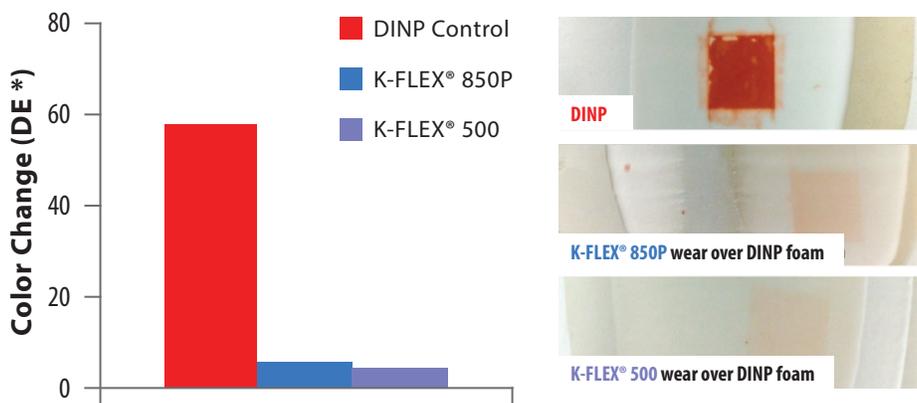
**K-FLEX<sup>®</sup> plasticizers** are known for their excellent performance and balance of properties. They are non-phthalate and have positive attributes from a product safety and health perspective compared to other choices.

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<sup>®</sup> 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.

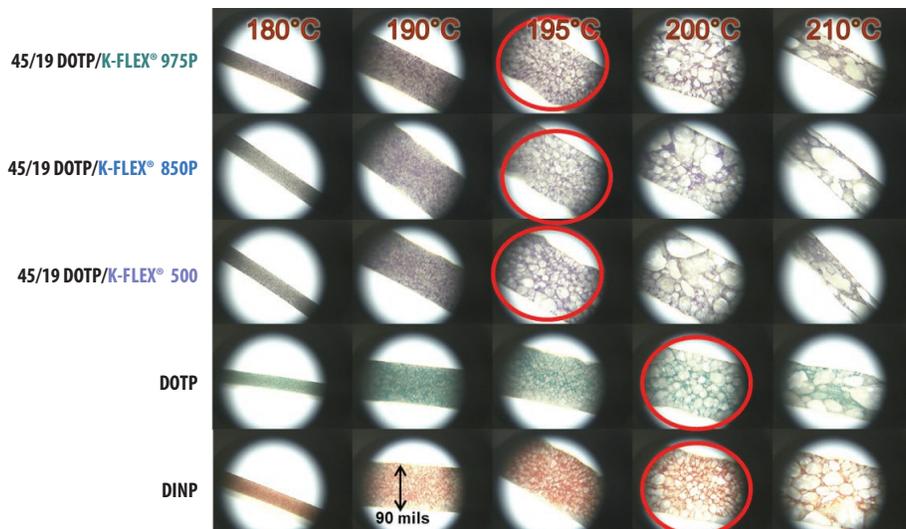
K-FLEX<sup>®</sup> plasticizers can be used alone or in blends with other plasticizers to achieve extremely useful performance and manufacturing benefits. Characteristics critical to the look and performance of resilient vinyl flooring can be improved through the use of K-FLEX plasticizers. When combined with some formulary adjustments additional benefits can be achieved.

- Reduce gelation and fusion times by up to 20°C.
- Reduce the temperature required to achieve the optimal blow ratio in the foam layer by 5-10 °C.
- Improve traffic stain resistance of the top wear layer by up to 92%.
- Increase production due to faster gel and fusion times, allowing greater speed in production and/or a reduction in energy costs.

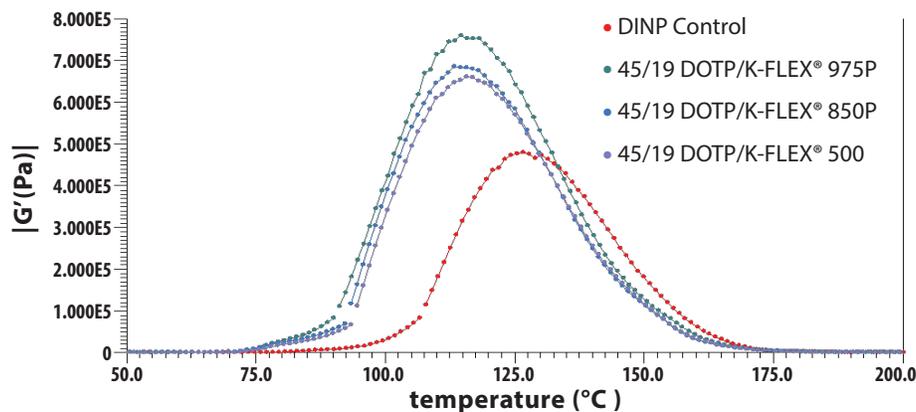


**Figure 1. Wear/clear layer stain resistance to oil brown traffic stainant.** The wear layers were applied over 100% DINP foam layers and demonstrate excellent stain resistance and protection of the construct.

Wear layers containing K-FLEX<sup>®</sup> high solvating plasticizers reduce staining up to 92%, even when used over a foam layer containing only general purpose plasticizers.



**Figure 2. Blow oven temperature can be reduced by a minimum of 2.5% while improving foam quality when expanding back foams formulated with blends of K-FLEX® and DOTP.**



**Figure 4. Gelation onset temperature occurs at 10-20 °C lower temperature than GP plasticizers when using blends of K-FLEX® with DOTP in this back foam formulation.**

EMERALD KALAMA CHEMICAL  
**K-FLEX®**  
 Plasticizers & Coalescents

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**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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