



MODULAST™ Modifiers for Polyurethanes

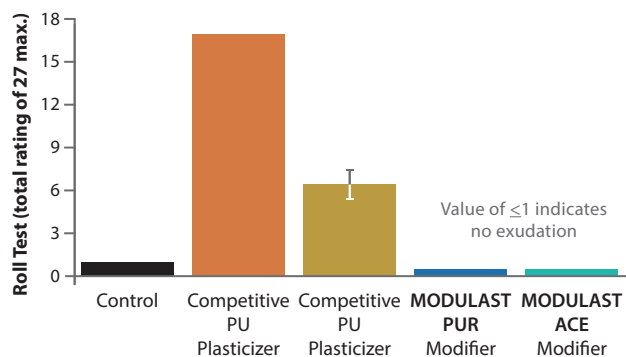
Emerald has developed novel dibenzoate solutions for superior quality and performance in applications such as CPU, TPU, dispersions, pastes, and urethane adhesives, sealants, and coatings. The line includes options with no GHS label requirements in the US and Europe.

Contact us today to learn about the advantages of MODULAST Modifiers, such as:

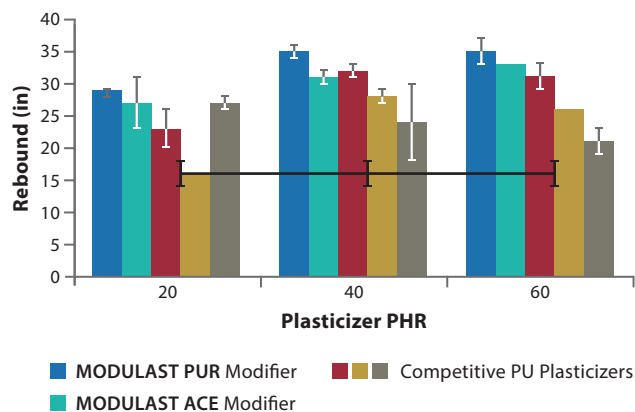
- **Tough but soft:** increased tensile strength and softer modulus versus standard dibenzoates, with equivalent abrasion resistance
- **Raising the bar on quality:** ultra-low and consistent residual hydroxyl content (OH), low odor, and outstanding color in the finished product
- **Excellent compatibility,** with greatly reduced exudation even at high loadings
- **Improved rebound and compression set**



No Exudation (Roll Test, 60°C)



Rebound



MODULAST™ PUR

Our highest purity, lowest OH offering for polyurethanes

Dibenzoate composition tailored for polyurethanes, featuring the lowest hydroxyl level on the market, exceptional color in the finished product, low odor, and very high permanence. Can be used to optimize economy (higher concentrations offset expensive polyols). Excellent HS&E profile, with no freezing and no GHS labeling requirements in the US or Europe.

MODULAST™ ACE

Excellent performance with consistently low OH content

Classic dibenzoate chemistry, now available in a tightly controlled low-OH composition for polyurethanes. Excellent choice for high performance applications, with low odor, extremely low exudation, and good rebound and compression set.

MODULAST™ CLS


Classic dibenzoate for trusted performance

Traditional dibenzoate chemistry with a long history of use in polyurethanes, where it significantly lowers durometer and modulus.



Emerald Kalama Chemical is the leading global producer of benzoic acid, benzaldehyde, and related chemistries, with operations in the U.S. and Europe certified to meet the highest standards, including ISO 9001:2015 and ISO 14001:2015.

Emerald's portfolio includes a wide range of solutions for industrial specialties, including K-FLEX® plasticizers and coalescents, Kalama® VITROFLEX® plasticizers for polysulfides, and Purox® and Kalama® benzoates and intermediates.

	MODULAST PUR 	MODULAST ACE	MODULAST CLS
OH Level	●●● Lowest available	●● Very low	● Low
Softening Efficiency	– Low	●● Medium	●●● High
PU Color	●●● Excellent	●● Very good	● Good
Odor	●●● Exceptionally low	●● Very low	● Low
Permanence	●●● Excellent	●●● Excellent	●● Very good
Freeze Point	●●● <-20°C	●●● <-20°C	●●● <-20°C

 = No GHS labeling requirements in the US and Europe

Customer Service – Americas

Emerald Kalama Chemical, LLC
Vancouver, Washington, USA

800.223.0035 | +1.360.673.2550
kflex@emeraldmaterials.com

Customer Service – EMEA

Emerald Kalama Chemical, BV
Rotterdam, The Netherlands

+31.88.888.0500
kflex.emea@emeraldmaterials.com

Customer Service – Asia Pacific

Emerald Performance Hong Kong
Wanchai, Hong Kong

+852.2598.7990
kflex.asia@emeraldmaterials.com

www.kflex.emeraldmaterials.com | kflex@emeraldmaterials.com

© Registered trademark of Emerald Performance Materials, LLC or its affiliates
© 2019 Emerald Kalama Chemical, LLC

November 19, 2019

