

## TRILWAX™ Ultra E

### FDA Closure Lubricant *Improved Torque and Organoleptic Properties*

**TRILWAX Ultra E** is a custom developed lubricant that is an improvement on erucamide and behenamide used in PP and HDPE caps and closures. **TRILWAX Ultra E** is completely saturated leaving no reactive sites to produce flavors and is stable to oxidation. All flavor producing lipids have been refined out. In addition, **TRILWAX Ultra E** has improved cap torque properties than erucamide or behenamide.

**Target Polymers: PP and HDPE caps and closures.**

#### Properties

Appearance	Free Flowing Beads
Melting Point	82-87C
Shelf Life	1 Year Min

TRILWAX Ultra E is biodegradable and FDA CFR 21 approved for use in  
TRILWAX Ultra E should be stored in a dry cool area in closed containers.  
TRILWAX Ultra E TRILWAX B is packaged in 55 lb bags.  
TRILWAX Ultra E is TSCA, EINECS, DSL, registered.

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## FDA Closure Lubricant Improved Torque and Organoliptic Properties

**TRILWAX Ultra E** is recommended when improved torque profile is desired or when flavor and odor stability are crucial. **TRILWAX Ultra E** is not recommended for film applications due to it's unique torque control properties.

Generally, **erucamide** is an adequate lubricant for caps/closures and it is FDA approved for this application. However, it is widely recognized that erucamide does not produce an optimum slip and torque profile for this application. The data below shows that erucamide can have a negative effect on kinetic CoF. While low addition levels of Trilwax Ultra E produce superior results.

Test Samples	Kinetic CoF	Improvement	Static CoF	Improvement
PP + 3000ppm Eruc.	0.129	-1.6%	0.143	7.7%
PP + 3000ppm Ultra E	0.119	6.3%	0.135	12.9%
PP + 1000ppm Eruc.	0.129	-1.6%	0.15	3.2%
PP + 1000ppm Ultra E	0.113	11.0%	0.129	16.8%
PP HomoPoly MI=11 Control	0.127		0.155	