

## DOVERGUARD E-35 / DOVERGUARD E-40 For Metalworking Applications

**DOVERGUARD E-35** and **DOVERGUARD E-40** are patented chlorinated esters to be used in metalworking formulations. The unique structure of these products brings lubrication and extreme pressure properties to the end users formulation using one additive only.

- Can act as an alternative to using chlorinated paraffins/olefins
- Readily biodegradable and based on sustainable vegetable based raw materials
- Not considered a substance of very high concern (SVHC)
- Not listed on Prop 65 or restricted by other environmental regulations
- Equal to enhanced performance over blended approach of using chlorinated paraffins/olefins and ester.

### TYPICAL PROPERTIES

Property	DOVERGUARD E-35	DOVERGUARD E-40
	Result	Result
Chlorine, %	34	40
Specific Gravity (@ 25°C)	1.158	1.219
Density (lb/gal)	9.7	10.2
Total Acid Value (mgKOH/g)	0.45	0.32
Viscosity @ 40°C, cS	139	391
Viscosity @ 100°F, SUS	742	2064
Pour Point (°C) [°F]	<-30 [<-22]	<-30 [<-22]
Color, ASTM D-1500	<1	<1

Recommended storing temperatures range from 80-100°F. Prolonged exposure to temperatures in excess of 100°F may result in darkening of product.

Performance data comparing use of DOVERGUARD E-35 vs. the blended approach of a mid-chain chlorinated paraffin and methyl ester is shown on the next page.

The information contained on this data sheet is believed to be reliable. Since the conditions of application and use of our products are beyond our control, no warranty is expressed or implied regarding accuracy of the information, the results obtained from the use of the product, or that such use will not infringe on any patent. This information is furnished with the express condition that you will conduct your own tests to determine the suitability of the product for your particular use. (102518)

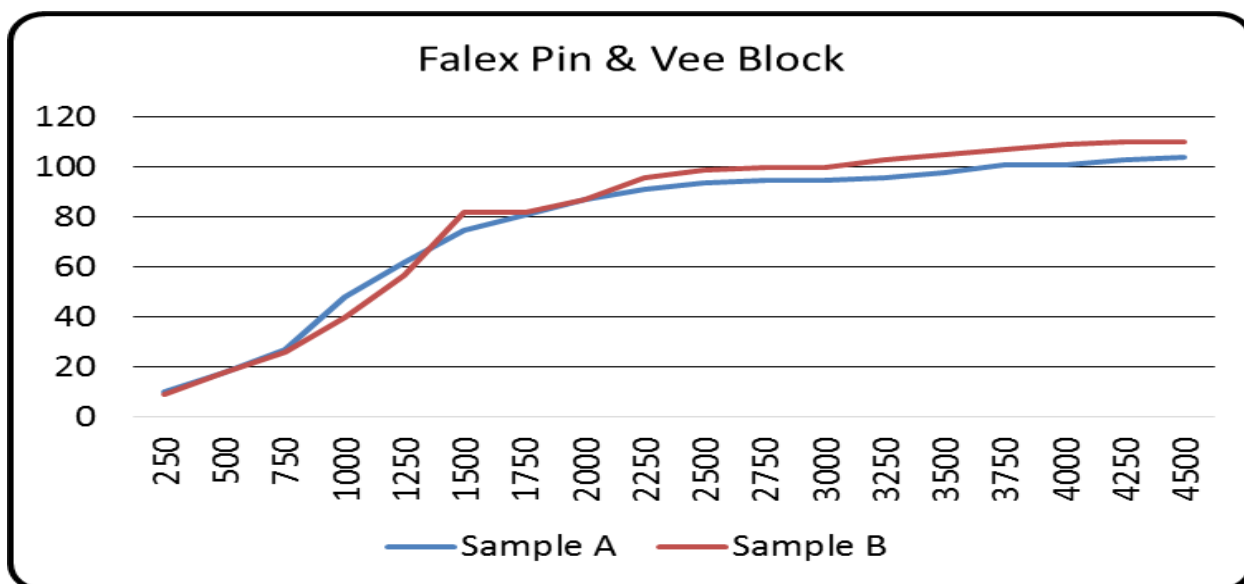
LGP-11®, LUBE-BOOSTER®, MAYCO®, PAROIL®, SUL-PERM®, SYN-CHEK®, SYNKAD®, CHLOREZ®, CHLOROWAX 40®, CHLOROWAX 50®, DOVERNOX®, DOVERPHOS®, DOVERPHOS HIPURE®, and DOVERPHOS S-9228® are federally registered trademarks of Dover Chemical Corporation.

### Formulae Evaluated

Sample A 100SUS Naphthenic Oil 93% and DOVERGUARD E-35 7%  
 Sample B 100SUS Naphthenic Oil 90.8 %, Paroil 152 4.7%, and Methyl Ester 165 4.5%

Both samples chlorine content of 2.45% and lubricity of 4.5%

### FALEX PIN & VEE BLOCK



### FOUR BALL WEAR

Sample A 0.53mm scar diameter  
 Sample B 0.78mm scar diameter

### VERTICAL DRAWBEAD

Sample A 100.0 Efficiency  
 Sample B 100.0 Efficiency

**Conclusions** – equal performance in Falex lubricity and EP testing and Drawbead Efficiency  
 DOVERGUARD E-35 exhibits superior performance in Four Ball AW testing

The information contained on this data sheet is believed to be reliable. Since the conditions of application and use of our products are beyond our control, no warranty is expressed or implied regarding accuracy of the information, the results obtained from the use of the product, or that such use will not infringe on any patent. This information is furnished with the express condition that you will conduct your own tests to determine the suitability of the product for your particular use. (102518)

LGP-11®, LUBE-BOOSTER®, MAYCO®, PAROIL®, SUL-PERM®, SYN-CHEK®, SYNKAD®, CHLOREZ®, CHLOROWAX 40®, CHLOROWAX 50®, DOVERNOS®, DOVERPHOS®, DOVERPHOS HIPURE®, and DOVERPHOS S-9228® are federally registered trademarks of Dover Chemical Corporation.