



VertecBio ELSOL™-KTR2

Patent Pending Blend of Biobased Solvents

- Biobased Replacement for MIBK
- Better Cleaning Power and Reduced Solvent Usage vs. MIBK
- Precision Cleaning Solvent, Dries Completely and Leaves No Residue
- High Performance, Versatile Solvent Blend for Formulations
- Excellent Solvency for Paint, Coating and Ink Formulations
- 20% - 30% More Efficient in Viscosity Reduction than MIBK
- Provides Excellent Flow Characteristics When Used in Formulations
- Easy and Inexpensive to Distill/Recycle
- High Loading Capacity
- 100% Biodegradable to Carbon Dioxide and Water
- Sustainable Chemistry – No Impact on Global Warming (“Carbon Neutral”)
- EPA Approved SNAP Solvent – No Ozone Depleting Chemicals
- No Environmentally Hazardous Ingredients
- Safe, Non-Toxic, Non-Carcinogenic
- No HAP’s – No Hazardous Air Pollutants
- Manufactured in the United States

8/6/08

GENERAL PHYSICAL PROPERTIES

VERTECBIO ELSOL-KTR2

Flash Point ..41 F ASTM D3278 (Setaflash)
 Vapor Pressure.....68 mmHg @ 68 F
 PH of Water Dispersion.....4
 Specific Gravity.....0.920
 Evaporation Rate.....1.38
 Boiling Point Range.....160-318 F



Vertec BioSolvents KTR2 Performance Sheet

Suggested Replacement for MIBK

Introduction

MIBK's largest use is in industrial coatings application, industrial cleaning and surface preparation applications. For coatings formulators looking to replace HAPS (Hazardous Air Pollutant Solvents) with a biobased, sustainable, carbon neutral HAPS free alternative, Vertec BioSolvents **KTR** blend is an ideal replacement for MIBK in a wide array of coatings formulations.

Vertec BioSolvents suggests a replacement blend with renewable, carbon neutral biobased solvents. These biobased solvents are derived from corn, soybeans, citrus fruits and other renewable feedstocks, and have a reduced toxicity profile.

Reformulation Solvents

Hazardous Solvents	MIBK
BioBased Replacements	ELSOL™ KTR2

The solvent blends shown are only suggested starting points for developing alternative systems. All blends should be thoroughly evaluated to determine suitability for specific applications

	Relative Evaporation Rate	Hansen Solubility Parameters			Total
		Dispersion	Polar	H Bonding	
ELSOL™ KTR 2	1.38	7.7	3.4	5.7	10.2
MIBK	1.7	7.5	3.0	2.0	8.3

Reformulation Solvents Typical Properties

Blend	Environmental	Uses	Comments
ELSOL KTR2	Non Hap	Paint, coatings	Renewable, carbon neutral
	Non SARA reportable	cleaners, adhesives	Reduced toxicity profile

Conclusion

Formulators and applicators are looking for a sustainable technology that is an alternative to hazardous solvents. This can be seen in many industries including paint and coatings, adhesives and inks. Formulators are not only feeling the pressures at the federal and state level, but abroad as well. The suggested replacements using the sustainable, carbon neutral, biobased solvents above should assist in meeting your requirements and the regulatory challenges.



Vertec BioSolvents ELSOL™-KTR2

MIBK Replacement

Specifications

Item	Unit	Specification
Appearance		Free From Insoluble and Haze
Specific Gravity	20/20° C	0.920
Acidity	Wt % as Acetic Acid, Max.	0.05
Purity	Wt % Min.	99.5
Water Content	Wt % Max.	0.20
Viscosity	cps @ 20° C	1.2
Color	APHA, Max	10

Physical Properties

Item	KTR2
Molecular Weight	81.52
Specific Gravity 20/20° C	0.920
Boiling Point	160° - 318°F
Flash Point	41°F
Viscosity @ 20°C (cps)	1.2
Evaporation Rate	1.38
Vapor Pressure, mm Hg, @20°C	68