SILCHEM LLC

Magiesol

Produced by Calumet Refinery

Calumet Specialty Products Partners, L.P., produces a full line of high-quality aliphatic solvents consisting of both hydrotreated and straight distillate solvents produced from domestic local crude.

Calumet's MAGIESOL® products are specialty aliphatic solvents and INKOL® products are specialty naphthenic oils with low aromatics and optimal boiling ranges. Our unique capabilities allow us to offer custom solvents blended to order, which are delivered in a variety of containers including drums, totes, flexi-bags, iso-containers, truckload and railcar quantities.

NAPHTHENIC INKOL TYPICAL PROPERTIES

PROPERTIES	METHOD	N-40 INKOL	NS-60 INKOL	NS-100 INKOL	NS-750 INKOL
Suggested Applications		V	C	C	C
API Gravity @ 60 °F	ASTM D4052	28.5	26.5	24.5	20.9
Specific Gravity @ 60 °F	ASTM D4052	0.8843	0.8955	0.9072	0.9284
Density @ 60 °F (Pounds Per Gallon)	MPMS 11.5.1	7.363	7.457	7.552	7.731
Viscosity @ 100 °F (SUS)	ASTM D2161	40.6	60.9	109	789
Viscosity @ 40 °C (cSt)	ASTM D445	4.20	10.00	20.10	165.1
Aniline Point (°F)	ASTM D611	139.0	150.0	163.2	183.1
Flash Point COC (°F)	ASTM D92	264	301	330	405
Color, ASTM	ASTM D1500	L0.5	L0.5	L0.5	1.0

Suggested Applications: C = Coldset V = Varnish

MAGIESOL®
ALUMINUM ROLLING & PRINTING

SOLVENTS FOR THE ALUMINUM INDUSTRY

Calumet offers the aluminum industry a wide range of rolling oils that provide the excellent performance and lubrication characteristics. Known for decades as MAGIESOL, these rolling oils are manufactured in specialty refining operations dedicated to the production of these unique streams. EXCELLENT PERFORMANCE AND LUBRICATION CHARACTERISTICS Optimal rolling oils provide cooling, lubrication and cleaning to a rolling operation. The high molecular weights of MAGIESOL rolling oils ensure higher heat capacities and more stable long term production operations. Excellent flash points and low vapor pressures provide a safe product for operations. The combination of low aromatics and high solvency provide a low odor clean process. Film thickness, a critical parameter for efficient rolling operation, is optimally achieved by the molecular weight similarities between MAGIESOLS and modern lubrication additives thereby optimizing elastohydrodynamic lubrication. Calumet is able to consistently produce highly refined ultra-pure narrow boiling range rolling oils. By utilizing proven technologies such as dedicated narrow range distillation units, select hydrogenation operations and continuous production, our oils provide the performance characteristics that the aluminum rolling industry demands. PRESSURE VS. VISCOSITY PERFORMANCE All oils show an increase in viscosity as pressure increases in the process. The stability of MAGIESOL oils enables them to perform optimally as pressure increases and allow a predictable level of viscosity management.

MAGIESOL®
ALUMINUM ROLLING & PRINTING

MAGIESOL®
ALUMINUM ROLLING & PRINTING

MAGIESOL® TYPICAL PROPERTIES

PROPERTIES	METHOD	MAGIESOL 44	MAGIESOL 47	MAGIESOL 52
COMPOSITION				
Carbon Type Analysis	ASTM D2140			
Aromatic Carbon Atom %		3	3	0
Naphthenic Carbon Atom %		27	28	31
Paraffinic Carbon Atom %		70	69	69
Aromatics (Wt %)	UV Spectro	0.4	0.8	0.9
Avg. Molecular Weight	BP Elevation	185	206	226
SOLVENCY				
Aniline Point (°F)	ASTM D611	176.0	179.6	188.0
Kauri Butanol Value	ASTM D1133	27.8	26.3	24.2
Distillation, °F				
IBP	ASTM D86	431	485	512
5%		437	493	523
10%		438	494	526
50%		444	501	542
95%		466	527	576
EP		475	539	586
PHYSICAL				
Viscosity, cSt @ 40 °C	ASTM D445	1.91	2.8	3.67
Flash Point (°F)	ASTM (see result)	201 (D93)	242(D93)	270 (D92)
Pour Point (°F)	ASTM D97	-30	-5	10
Specific Gravity 60 °F	ASTM D4052	0.8025	0.817	0.8211
Pounds per Gallon, 60 °F	Calculated	6.681	6.801	6.836
Color, Saybolt	ASTM D156	30	30	30

MAGIESOL®
ALUMINUM ROLLING & PRINTING

MAGIESOL® KEY FEATURES Calumet MAGIESOL rolling oils have several key features that are important to the safe and efficient operation of aluminum rolling. PURITY All MAGIESOLS are highly refined to meet US FDA regulations for indirect and direct food contact applications as noted below: • 21 CFR 178.3910: Metallic Surface Lubricants – Foil and Sheet Rolling • 21 CFR 172.884: Odorless Light Petroleum Hydrocarbons – Direct Food Additives (see regulation for limitations) • 21 CFR 178.3650: Odorless Light Petroleum Hydrocarbons – Indirect Food Contact • 21 CFR 178.3620(b): Technical White Mineral Oils – Indirect Food Contact • 21 CFR 178.3620(c): Mineral Oils – Non Food Use

OXIDATION RESISTANCE The formation of off-flavor compounds has been attributed to the oxidation of the rolling oil into compounds containing carbonyl groups such as aldehydes and ketones. While these materials are formed from any rolling oil, they are most often produced from performance additives such as alcohols and esters (1,2). Anti-oxidants, such as BHT, can effectively control the formation of these oxidation products. It has been shown, however, that using severely hydrotreated oils such as MAGIESOLS can resist the buildup of carbonyl compounds over twice as long as the normal paraffin materials (1).

FLAVOR performance is a critical parameter for certain rolling oil applications. Trace amounts of oxidation products can lead to poor flavor performance in aluminum products. All rolling oils leave a residue on a finished surface even after acid washing. To ensure ongoing flavor performance of our materials, MAGIESOLS are routinely tested and accepted by a major brewery for use as a suitable aluminum rolling oil.

STAIN formation in aluminum production is a processing problem related to oxidation. Stain, although difficult to measure, is most commonly measured in milligrams of weight gain per millimeter of oil used. When compared to distillates and normal paraffin's, the tight boiling ranges of MAGIESOL rolling oils provide superior oxidation performance to inhibit stain formation.

CALTRAN

ACEITES AISLANTES ELÉCTRICOS (ASTM D3487)

Producido por Calumet, Distribute by Silchem

Calumet tiene más de 25 años de experiencia en la producción de fluidos aislantes eléctricos altamente refinados, limpios y estables. La línea CALTRAN de aceites nafténicos para transformadores es una cartera de productos personalizados, formulados para satisfacer plenamente especificaciones mundiales concretas, lo que proporciona a los clientes flexibilidad a la hora de escoger los aceites para transformadores que cumplan con sus requisitos específicos. Calumet participa desde hace mucho tiempo en la encuesta anual de DOBLE sobre aceite para transformadores. Desarrollados internamente por el grupo de investigación y desarrollo de Calumet, los aceites para transformadores CALTRAN tienen excelentes propiedades dieléctricas, alta estabilidad térmica y buena resistencia a la oxidación. Los aceites para transformadores CALTRAN cumplen plenamente las especificaciones ASTM D3487 para aceites minerales aislantes de Tipo I y Tipo II en aparatos eléctricos.

CALTRAN®
ELECTRICAL INSULATING OILS

CALTRAN®
ELECTRICAL INSULATING OILS

PRODUCTS

NAPHTHENIC TYPE I	NAPHTHENIC TYPE II
CALTRAN 60-08	CALTRAN 60-15
CALTRAN N60-08	CALTRAN 60-30
	CALTRAN N60-15
	CALTRAN N60-30

CALTRAN® ELECTRICAL INSULATING OILS Meeting following standards:
• ASTM D3487 (Type I and II) • Canadian C50
• IEC 60296:2020 (Ed. 5)

CARACTERÍSTICAS DEL PRODUCTO

- **Excelentes propiedades físicas, químicas y eléctricas.**
- **Buena resistencia a la oxidación.**
- **Rápida transferencia de calor.**
- **Excelentes propiedades a baja temperatura, sin necesidad de depresores del punto de fluidez.**
- **Miscible con todos los aceites de transformadores comparables a base de hidrocarburos.**
- **Cumple con las especificaciones de aplicación ASTM D3487 Tipo I y Tipo II.**

PROPIEDADES TÍPICAS DE CALTRAN™

PROPIEDADES	MÉTODO	60-08	60-15	60-30	N60-08	N60-15	N60-30
Tipo		Tipo I	Tipo II	Tipo II	Tipo I	Tipo II	Tipo II
Viscosidad a 0 °C (cSt)	D445	48.12	46.86	49.61	47.59	48.43	48.61
Viscosidad a 40 °C (cSt)	D445	8.21	8.33	8.35	8.85	8.08	8.19
Viscosidad a 100 °C (cSt)	D445	2.21	2.21	2.23	2.31	2.19	2.19
Gravedad API a 60 °F	D4052	29.9	29.4	30.0	29.7	29.8	29.6
Densidad a 15 °C Kg/dm3	D4052	0.8762	0.8791	0.8759	0.8775	0.8770	0.8777
Punto de inflamación, COC (°C)	D92	151	152	153	149	152	149
Punto de fluidez (°C)	D97	-62	-64	-66	-61	-62	-75
Color, ASTM	D1500	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5
Punto de anilina (°C)	D611	80.0	76.0	78.0	77.8	77.1	79.6
Número de neutralización (mg KOH/g)	D974	0.0002	0.002	0.003	0.007	0.002	0.003
Contenido de agua (ppm)	D1533	10	15	5	11	10	11
Tensión de ruptura dieléctrica a 60 Hz							
Electrodos de disco, min., kV	D877	40	42	40	39	40	39
Electrodos VDE, min., kV 0.040 pulg. (1.02 mm) separación	D1816	50	31	30	49	30	31
Electrodos VDE, min., kV 0.080 pulg. (2.03 mm) separación	D1816	60	60	60	60	60	59
Tensión de ruptura dieléctrica, condiciones de impulso	D3300	397	300	298	300	300	299
Azufre corrosivo	ASTM D1275B	No corrosivo	No corrosivo	No corrosivo	No corrosivo	No corrosivo	No corrosivo
Tensión interfacial (dina/cm)	D971	47.9	48.7	47.0	48.0	47.8	50.6
Estabilidad a la oxidación							
72 HR lodos, % en masa	D2440	0	0.01	0.04	0.00	0.01	0.02
72 HR N.° de ácido, mg KOH/g	D2440	0	0.01	0.02	0.01	0.01	0.01
164 HR lodos, % en masa	D2440	0	0.02	0.05	0.06	0.02	0.03
164 HR N.° de ácido, mg KOH/g	D2440	0	0.01	0.02	0.00	0.01	0.01
Contenido de inhibidor de oxidación (% en masa)	D2668	0.06	0.18	0.26	0.06	0.17	0.26
Estabilidad a la oxidación, ensayo de oxidación de recipientes rotativos a presión (Rotating Pressure Vessel Oxidation Test, RPVOT) (min)	D2112	-	258	265	-	265	258
Tendencia a la gasificación (µL/min)	D2300	16	18	15	-13	-19	-21
Factor de potencia a 25 °C (%)	D924	0.002	0.008	0.001	0.001	0.003	0.001
Factor de potencia a 100 °C (%)	D924	0.05	0.05	0.03	0.03	0.04	0.04
Contenido de PCB (ppm)	D4059	<1	<1	<1	<1	<1	<1
Normas ASTM D3487		PASA	PASA	PASA	PASA	PASA	PASA

Orange Silica Gel

The main ingredient is silicon dioxide, and as it does not contain cobalt chloride, it is a harmless product free from any type of contamination, retaining the color changes according to the amount of moisture absorbed that characterizes silica gel with indicator.

It is mainly used as an absorbent with a moisture indicator in precision instruments, medicine, the chemical processing of gasoline, foodstuffs, clothing, leather, electrical appliances, the gas industry, and others. Silica gel with orange indicator. When saturated, it turns dark green. Orange saturation indicator silica gel in 3 to 5 mm spheres.

Its main component is silicon dioxide (silica gel) and its color changes because it contains gentian violet depending on the saturation of relative humidity. Gentian violet is completely harmless and does not cause any damage to health.

This is an absorbent product that has the highest absorption capacity of its kind and, despite its name, "gel" is a completely hard solid. It has a porosity of up to 800 m^2/gram, which is why it is the most widely used product for absorbing water, or rather for absorbing relative humidity in enclosed spaces, absorbing up to 40% of its weight in moisture. It is 100% free of cobalt chloride and is easily recognizable when saturated, as it appears in a contrasting green color against an amber orange color when unsaturated.

Refined & Technical Grade Glycerin

Our high-quality refined and technical grade glycerin solutions serve customers worldwide glycerin that are sought after for use in applications including pet food and treats, industrial applications, dental care, cosmetics, and tobacco.

We manufacture glycerin by splitting natural oils and fats obtained from renewable resources. As a result of our extensive industry expertise, our glycerin products are available in both refined USP and technical grade at 99.7% purity. In addition, OMRI Listed for Organic Use.

Our glycerin products are often used in other applications as well, including:

- cellulose films
- deicing and antifreeze
- emulsifiers
- ester intermediates
- humectants
- moisturizers
- nitration
- plasticizers
- polyols
- polyurethanes
- resins
- solubilizers

OMRI® LISTED For Organic Use