

LUBRICANTS | EUROPE

# SYNTHETIC ESTERS

Product Portfolio



ZSCHIMMER & SCHWARZ

# SYNTHETIC ESTERS PORTFOLIO

Zschimmer & Schwarz offers a broad range of esters designed for use in lubricants, metalworking fluids and industrial fluids. Esters can be used in many industrial applications to replace mineral or natural oils whenever there is a need for:

- ▶ Metal adhesion
- ▶ Higher lubricity
- ▶ Lower toxicity and impact on the environment
- ▶ Improved thermal stability
- ▶ Low volatility
- ▶ Low pour point

LUBRICIT® and LEXOLUBE® esters are manufactured starting from selected raw materials of oleochemical and synthetic origin and using industry-leading standards to guarantee high quality, narrow specifications, consistent characteristics and absence of residues and impurities. Our product portfolio includes:

## FATTY ACID ESTERS

Base esters and additives are used for the formulation of low-viscosity lubricants or neat and emulsifiable metalworking fluids. They are manufactured from naturally occurring fatty acids that are commercially derived from animal or vegetable fats and oils. Based on renewable resources and also biodegradable, these esters have an outstanding health and safety profile. Due to the separation and purification steps undergone by the components, there is a distinct performance advantage over natural triglyceride oils: synthetic fatty acid esters have superior oxidative, hydrolytic and bio-stability and can be designed to meet the viscosity, volatility and other characteristics required for the application.

## DIESTERS

Esters of di-carboxylic acids provide improved stability both in lubricants and in metalworking fluids. Diesters are historically made from synthetic diacids and synthetic alcohols. As such, they are not based on renewable resources, but can still have an excellent health, safety and toxicity profile if aromatic diacids (phthalates) are avoided. In recent years, bio-based diester feedstocks have become available, and it is likely that these will become more affordable in coming years.

## POLYOL ESTERS

Polyol esters have three or more ester groups, so they give higher viscosity and lower volatility than diesters. The polyol center is extremely stable at high temperature so polyol esters are preferred in hot operations, where they give long life and resist varnish and deposit formation. The acid component can be renewable or fully synthetic. Synthetic feedstocks optimise thermal stability, and renewable acids are required if the oil must be readily biodegradable. Polyol ester chemistry allows to formulate lubricant basestocks to meet virtually any lubrication challenge. The product portfolio of Zschimmer & Schwarz includes products designed for specific applications:

- ▶ High temperature
- ▶ Incidental food contact
- ▶ Biodegradability and renewability

## COMPLEX POLYOL ESTERS

Complex polyol esters are polymeric hybrids of polyol esters and diacids. By combining the two technologies, it is possible to achieve excellent thermal stability at moderate to very high viscosity. The polymeric character and multiple ester groups lead to a very high viscosity index, outstanding tack and exceptional boundary lubrication. Complex polyol esters can be manufactured with a large percentage of renewable carbons, and many types are readily biodegradable.



PRODUCT	HIGH TEMPERATURE	LOW TEMPERATURE	FOOD GRADE	METAL-WORKING	GEARS & CHAINS	GREASES	COMPRESSOR	ENGINE/DRIVELINE	TEXTILE & FIBRES	BIODEGRADABLE	VISCOSITY @40 °C	VISCOSITY @100 °C	VISCOSITY INDEX	FLASH POINT	POUR POINT
<b>FATTY ACIDS ESTERS</b>															
LUBRICIT iC9-9 (E)		▲		▲				▲		▲	4.8			> 140	< -57
LUBRICIT 2-EHL (E)		▲		▲				▲		▲	5	1.9		166	< -25
LUBRICIT 2-EHC (E)				▲						▲	6	2		> 180	< -15
LUBRICIT 2-EHO (E)		▲		▲		▲			▲	▲	8	2.7		213	< -30
LUBRICIT 2-EHP (E)				▲		▲			▲	▲	8.5	2.7		215	0
LUBRICIT 2-EHS (E)				▲					▲	▲	9.5	3		218	6
LEXOLUBE HS-C (E)	▲			▲	▲	▲				▲	9	3	160	225	< -2
LEXOLUBE B-109 (E)	▲			▲					▲	▲	17	4	160	204	< 7
<b>DIESTERS</b>															
LUBRICIT DOA (E)		▲		▲		▲	▲		▲	▲	8	2.3	110	196	-84
LUBRICIT DIDA (E)		▲		▲		▲	▲		▲	▲	14	3.5	145	221	-75
LUBRICIT DTDA (E)		▲		▲	▲	▲	▲	▲	▲	▲	22	5	150	215	-57
LUBRICIT 2-EHD/1 (E)				▲				▲		▲	95	13	140	298	-57
<b>POLYOL ESTERS</b>															
LUBRICIT TMP C810	▲	▲	▲		▲	▲		▲		▲	19	4	140	250	-50
LUBRICIT TMP C9		▲	▲		▲	▲			▲	▲	20	4.5	142	270	-63
LUBRICIT PE 4810											32	6	140	300	-10
LUBRICIT TMP THCFA				▲					▲	▲	35	10	160	280	0
LEXOLUBE POE-68HT	▲	▲			▲	▲	▲				68	10	130	285	-45
LEXOLUBE PQ-68	▲	▲			▲	▲	▲				68	9	105	250	-30
LEXOLUBE POE-100HT	▲				▲	▲					100	12	110	295	-35
LUBRICIT PEiC18 (E)	▲				▲	▲	▲	▲		▲	145	18	140	242	< -29
LEXOLUBE 4PM-114	▲				▲	▲					170	15	80	275	-40
LEXOLUBE POE-220HT	▲			▲	▲	▲					220	19	95	300	-25
LEXOLUBE POE-350HT	▲					▲					350	24	90	300	-20
<b>COMPLEX ESTERS</b>															
LEXOLUBE KL-435	▲				▲	▲				▲	435	38	125	320	-25
LEXOLUBE CG-3000			▲	▲	▲	▲	▲			▲	3000	290	230	300	-15
LEXOLUBE CQ-3000	▲			▲	▲	▲	▲				3000	205	180	300	-15
<b>FOOD GRADE</b>															
LEXOLUBE FG-8 HX1 (E)		▲	▲	▲		▲	▲		▲	▲	8	2.3	110	200	-84
LEXOLUBE FG-12 HX1 (E)	▲	▲	▲	▲				▲		▲	12	3	140	210	< -57
LEXOLUBE FG-15 HX1 (E)	▲		▲	▲		▲			▲	▲	15	4	135	235	< -5
LEXOLUBE FG-22 HX1		▲	▲				▲			▲	22	5	140	250	-50
LEXOLUBE FG-46 HX1		▲	▲				▲			▲	46	8	135	270	-45
LEXOLUBE FG-68 HX1	▲		▲		▲	▲	▲				68	10	125	290	-45
LEXOLUBE FG-100 HX1	▲		▲		▲	▲	▲				100	12	120	300	-35
LEXOLUBE FG-220 HX1	▲		▲			▲	▲				220	19	95	300	-25
LEXOLUBE FG-350 HX1	▲		▲	▲	▲	▲	▲				350	24	85	300	-20
LEXOLUBE 3N-310	▲	▲	▲							▲	19	4	140	270	-45
LUBRICIT 5399	▲	▲	▲			▲	▲			▲	21	5	140	285	-30
LUBRICIT TMP C18-VEG		▲	▲	▲		▲				▲	46	9	190	325	-45
LUBRICIT 9537	▲		▲			▲	▲				300	22	90	300	-5





# LUBRICANTS

- ▶ High temperature
- ▶ Low temperature
- ▶ Food contact
- ▶ Metalworking
- ▶ Gears and chains
- ▶ Greases
- ▶ Compressors
- ▶ Engines
- ▶ Textile
- ▶ Ceramic and inks



**ZSCHIMMER & SCHWARZ**

**Chemistry tailor-made**

► **Zschimmer & Schwarz**  
Italiana S.p.A.  
Via Angelo Ariotto, 1/C  
13038 Tricerro (VC) | IT  
T +39 0161 808 111  
F +39 0161 801 002  
info.zsi@zschimmer-schwarz.com  
zschimmer-schwarz-italiana.it  
zschimmer-schwarz.com

**Disclaimer:** The information contained in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed. This product information is not intended to provide legal or regulatory advice about product uses or claims in any jurisdiction and should not be relied upon for such guidance. Since global regulatory requirements differ, parties accessing this information are solely responsible for determining whether the products and/or claims comply with applicable local laws and regulations, including but not limited to import and export regulations. Please contact your local Zschimmer & Schwarz representative for more product information. Zschimmer & Schwarz assumes no liability for any use of our products that is not in compliance with the requirements of the country of the user. LUBRICIT® and LEXOLUBE® are registered trademarks of Zschimmer & Schwarz.

**Labelling:** Details about the classification and labeling of our products and further advice on safe handling are contained in the current safety data sheets.

For further information, please visit [zslubes.com](https://zslubes.com) or contact [lubricants@zschimmer-schwarz.com](mailto:lubricants@zschimmer-schwarz.com)