



SPECIALISED LUBRICANTS

## LA 814 BELLARIA SERIES

### FOOD GRADE INDUSTRIAL OILS

#### DESCRIPTION

LubeAlloy PAES-SYN Bellaria Series are ultra-performance ashless food grade machinery and processing oils suitable for bearing, compressor, gear and hydraulic oil applications. This series of food and beverage processing and packaging oils complies with global standards for food safety and quality meeting NSF H-1 registered Title 21 CFR 178.3570 by the Food and Drug Administration (USA) for incidental food contact.

#### ADVANCED SYNTHETIC

LA 814 Bellaria Series oils are effective across multiple functions within food and beverage processing, packaging and pharmaceutical production where incidental food contact is permitted. The products cover a wide variety of bearing, compressor, gear and hydraulic applications where inventory, maintenance labour, machinery replacement parts, system cleaning and lubricant change require reduced cost and management.

#### ENERGY EFFICIENCY

The LubeAlloy Bellaria Series are proprietary PAES-SYN™ base oils that possess a unique molecule structure that provide outstanding low traction coefficients. This results in low fluid friction of non-conforming sliding and load zone surfaces. Low fluid friction provides lower operating temperatures, reduced internal friction and improved equipment efficiency which provides economic benefits in decreased power consumption and energy usage.

#### WEAR PROTECTION

LA 814 Bellaria Series provide a resilient oil film at low and high temperatures. Elasto-hydrodynamic lubrication (EHD-L) provided from the PAES-SYN™ oils offer an oil film permissive from oil film shear and rupture under heavy, sliding and rolling load. This characteristics retains separation between various metallurgical opposing surfaces to increase machinery life and productivity.

Extended oil life is experienced when compared to white mineral and other synthetic type oils.

#### RUST AND CORROSION

LA 814 Bellaria Series delivers protection against oxidising metals, ferrous & non-ferrous yellow metals that form rust and corrosion where incidental food contact can be exposed to high moisture conditions when regular wash-down of processing plant machinery is an occurrence.

#### THERMAL STABILITY

The thermal failure of an oil can be localised or uniform. When localised heat points of discharge valves in reciprocating compressors, contact points of gear teeth or entrained air imploding in hydraulic systems, microscopic carbon deposits will accumulate to develop varnish and sludge. Thermal cracking of larger molecules into smaller molecules can initiate side reactions to induce polymerisation and become volatile, gaseous by-products.

LA 814 Bellaria Series possess a uniform molecule structure that is highly resistant to thermal degradation. This inherent thermal stability provides a cleaner, cooler and longer lasting oil for extended maintenance periods.

#### COMPATIBILITY

LA 814 Bellaria Oils are recommended for use in processing and packaging establishments requiring NSF 1H, KOSHER or HALAL recommendations for food processing.

## FEATURES AND OPERATIONAL BENEFITS

FEATURES	ADVANTAGES AND OPERATIONAL BENEFITS
NSF H1 registered components	Allows use in food, beverage and pharmaceutical packaging and processing applications for incidental contact
Multiple application service	Streamlining and reduced plant inventory
Ashless Formulation	Contains no harmful metallic compounds
<b>INDUSTRIAL GEAR OIL</b>	
Exceptional high temperature thermal stability and oxidation resistance	Increase equipment high temperature operating capability. Eliminate insoluble and varnish deposits to enable efficient operation and long filter life
High Viscosity Index	Retains viscosity and film thickness at high temperatures. Provides exceptional low temperature performance, lowering voltage draw at start-up.
Reduced co-efficient static friction	Reduced friction and increase efficiency in sliding and rolling gear/bearing mechanisms. Measurable reduced power consumption and lower steady-state operating temperatures.
High load carrying efficiency	Protects metal surfaces under heavy and shock loads.
Balanced additive chemistry	Delivers exceptional performance in relation to rust and corrosion prevention, water separability, foam control and air release performance.
<b>COMPRESSOR</b>	
Yellow Metal Oxidation Resistant	Protects non-ferrous metal surfaces from corrosive elements where rotor, valve, ring and cylinder operate
Non-detergent/Ashless	No carbon soot build up on reciprocating compressors
Oil Purity	Maintains gas purity of compressed air and downline cooling
Oil Viscosity Film	Seals rotor gaps and clearances between male and female rotors to ensure air flow efficiency and pressure
Anti-Oxidant Protection	Ensures lubricant life is protected from acid attack and viscosity increase
Cooler Operations	Minimises expansion of rotor metals from compressed air
<b>HYDRAULIC</b>	
Demulsibility Capability	Reduces effect of water contamination to form sludge and other harmful debris
Broad spectrum use	Covers wide wear protection required for all major pump OEM specifications
<b>CIRCULATING OIL - BEARING</b>	
Protects against rust and corrosion	Retains system cleanliness in both liquid and vapour phase
Resistant to chemical and thermal deterioration	Provides extended oil drain periods, reduced filter deposits and prolonged filter life
Extends bearing life	Reduces micro slip in rolling contact bearings to extend rolling-element life

## SPECIFICATIONS AND PERFORMANCE REQUIREMENTS

LA 814 BELLARIA SERIES	32	46	68	100	150	220	320	460
<b>INDUSTRIAL GEAR OIL</b>								
DIN 51517 Part 1 (C) ,2 (CL) ,3 (CLP)				✓	✓	✓	✓	✓
ISO 12925-1:2018 Class CKB, CKC, CKT				✓	✓	✓	✓	✓
ISO 6743-6 Class CKB, CKC, CKT				✓	✓	✓	✓	✓
David Brown S1.53.106				✓	✓	✓	✓	✓
AGMA 9005-E02 (R&O, EP)				✓	✓	✓	✓	✓
US Steel 127, 136				✓	✓	✓	✓	✓
<b>HYDRAULIC</b>								
DIN ISO 51524-3 Part 3 (HVLP)	✓	✓	✓	✓				
ISO 6743-4 HV	✓	✓	✓	✓				
DIN ISO 15380:2016 (HEES)	✓	✓	✓	✓				
Eaton Vickers 35VQ25	✓	✓	✓					
<b>COMPRESSOR</b>								
DIN ISO 51506 VDL	✓	✓	✓	✓				
ISO 6743-3 DAB	✓	✓	✓	✓				
ISO 6743-3 DAJ	✓	✓	✓	✓				

### BELLARIA SERIES viscosity recommendations:

ISO 32, 46, 68, 100 proposed for compressor, vacuum pump, hydraulic and circulating oils

ISO 100, 150, 220, 320, 460 are proposed for enclosed industrial gear, bearing and circulating oil systems.

## TYPICAL PROPERTIES

LA 814 BELLARIA SERIES								
ISO Viscosity Grade	32	46	68	100	150	220	320	460
Viscosity, 40°C, cSt ASTM D445	32	46	68	100	150	224	320	460
Viscosity, 100°C, cSt ASTM D445	6.0	7.5	10	13.5	18.1	25.5	33.90	43.00
Viscosity Index, ASTM D2270	133	135	137	137	140	145	149	146
Density, @ 15°C	0.843	0.846	0.862	0.837	0.847	0.856	0.861	0.867
Appearance, Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Pour Point, °C, ASTM D5950	-54	-51	-48	-45	-37	-35	-35	-35
Flash Point, °C, ASTM D92	242	242	248	256	232	270	282	288
Copper Corrosion, ASTM D130	1a	1a	1a	1a	1a	1a	1a	1a
TOST, ASTM D943, hours				10,000+	10,000+	10,000+	10,000+	10,000+
RPVOT, ASTM D2270, minutes	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
FZG Gear Scuff Test, A/8.3/90, ISO 14635-1	12	12	12	13+	13+	13+	13+	13+
Rust protection, ASTM D665B, NaCl Water	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

**Health and Safety:** This product is not expected to cause health concerns when used for the intended application and according to the recommendations in the Material Safety Data Sheet (MSDS).

LubeAlloy Bellaria Series FG lubricants are recommended for use in a wide variety of industrial gearbox, hydraulic, compressor and bearing applications, plain, rolling and tapered within the food and beverage processing, packaging and pharmaceutical industries. The products are effective in applications where maintenance costs of component replacement, system cleaning and lubricant changes are high.

The Bellaria Series of FG lubricants are long life oils. LubeAlloy Lubricant Analysis program is advised to monitor the concentration and chemical stature every twelve months for oil life, contaminants and wear metal.

