

Xaerus Business Overview



XAERUS
Lubrication/Innovation

Xaerus Company Profile

- Incorporated in 2010
- Head office / Production based in Midland, Michigan, USA
- Current Xaerus team founded a successful compressor lubricant company (CPI Engineering)
- Manufacturing Capacity: 12,000 KL / Year
- Distribution network: 20 partners in 30 countries



Xaerus West Building

23,320 Square Feet

3 Million Gallon Annual Capacity

Zero lost time injuries since opening in 2010



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Xaerus East Office/Blending Facilities

- Expansion Tripled Manufacturing Space
 - Purchased December 5, 2013
 - Adjacent to our current facility
 - Total property of > 8 acres



Xaerus Overview



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Xaerus Key Resources Profile



- **John Tolfa**, President Xaerus, 32 years experience
 - BSc in Chemistry, MSc in Chemical Engineering, 9 Patents
 - VP, COO, Co-owner CPI 1993-97, President CPI 1997- 2007
- **Jeff Lyons**, Vice President Xaerus, 34 years experience
 - Primary designer of CPI Engineering Manufacturing Facilities
 - Co-owner CPI 1993 – 97, Director Manufacturing CPI 1995-2007
- **Sean O'Malley**, Director Sales and Marketing Xaerus, 23 years experience
 - BSc Chemical Engineering, MSc Polymer Science P.E. Certification Chemical Engineering. Director Industrial Lubes, CPI 2006-2010



We Distribute Products in > 30 Countries, including North & South America, Europe, SE Asia, and North Asia

Singapore

- Blending and packaging
 - XR 212 Series
 - OEM Air Compressor Lubricants
- Stocking Warehouse
- Customer Service
- Logistics



Malaysia (SPC)

- Private label packaging for OEMs and key customers.
- Mineral oil blending capabilities
- Oil Analysis



China (Sairun)

- Packaging of naphthenic mineral oils
- Blending of mineral oils
- Repackaging of synthetic oils.



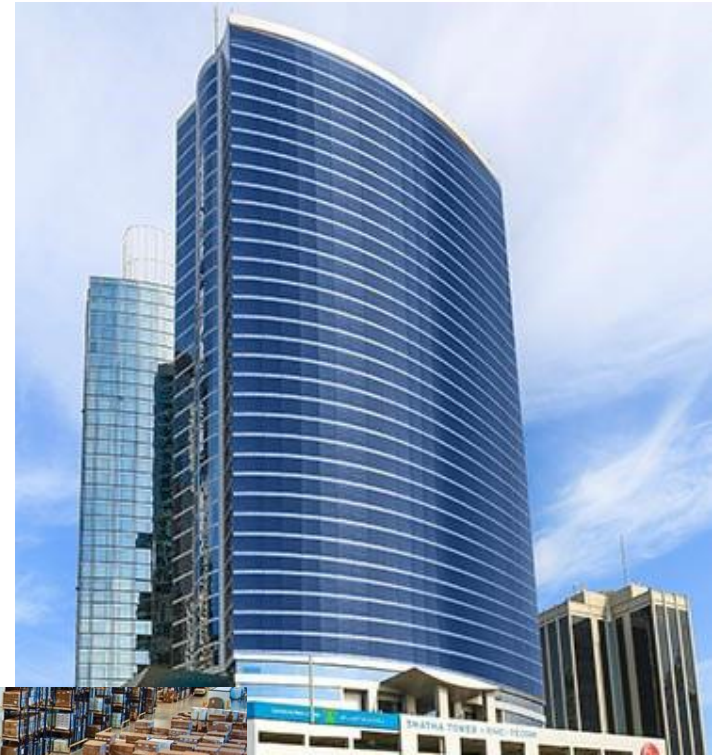
Europe

- Local sales and technical support
- Warehouse and logistical services for European market
- Pail packaging capabilities.
- Customer service support
- Blending capabilities
- Raw material sourcing



Dubai

- Company office location in Media City
- Stocking location for the Middle East
- Regional Oil Analysis



Brazil

- Company office in Sao Paulo
- ANP License for Xaerus products
- Technical and commercial support
- Customer service
- Warehousing

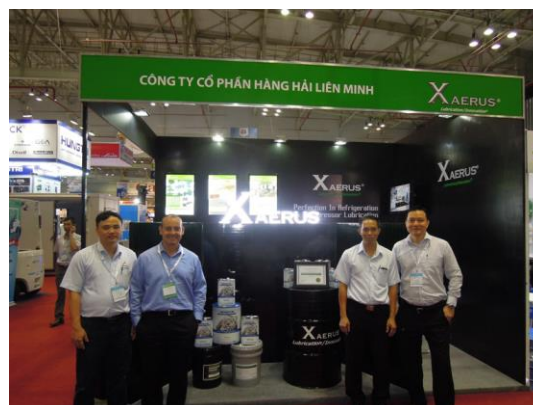


Xaerus Calgary and Houston

- Warehouse products for hydrocarbon gas industry
- Logistics services



Trade Shows and Workshops Globally



ADIPEC أديبك
The Abu Dhabi International Petroleum Exhibition & Conference
12-15 November 2018

Xaerus Lubricants Main Product Range

- Synthetic and Mineral Air Compressor Oil
- Synthetic and Mineral Refrigeration Compressor Oil
- Synthetic and Mineral Hydrocarbon Compressor Oil
- Synthetic Specialty Lubricants (incl. Gear Oil)

Xaerus Air Compressor Lubricants Profile

- Xaerus has vast data base and experience working with major Air Compressor OEMs and End Users



Air Compressor Lubricants



Product	Base Oil	ISO Viscosity Grade	Typical Drain Interval	Compressor Type
XAF 100 Series	PAO	32, 46, 68	4000	Food-grade Rotary Screw
XA 101 Series	PAO	32, 46, 68	8000	Rotary Screw
XAF 110 Series	PAO	32, 46, 68	6000	Food-grade Rotary Screw
XA 201 Series	Group II Mineral Oil	32, 46, 68	4000	Rotary Screw
XA 442 Series	PAG	27, 32, 46	8000	Centrifugal, Rotary Screw
XA 500 Series	POE	68, 100, 150	12000	Reciprocating, Rotary Vane
XA 501 Series	POE	32, 46, 68	12000	Rotary Screw
XA 701 Series	Group III Mineral Oil	32, 46, 68	6000	Rotary Screw

Xaerus Gas Compressor Lubricants Profile

- Xaerus has vast data base and experience working with major Hydrocarbon Gas Compressor OEMs and End Users



Process/Hydrocarbon Gas Compressor Lubricants



Product	Base Oil	ISO Viscosity Grade	Applications
XG 101 Series	PAO	68, 100, 150	Turbine Feed Gas
XG 114 Series	PAO	68, 100, 150	Inert Gas
XG 205 Series	Group II Mineral Oil	68, 100, 150	Gas Gathering, Light Hydrocarbon Gas, Sour Gas
XG 210 Series	Group II Mineral Oil	68, 100, 150	Gas Gathering, Light Hydrocarbon Gas
XG 407 Series	PAG	68, 100, 150	Heavy Gas, Sour Gas
XG 415 Series	PAG	68, 100, 150	Heavy Gas, Sour Gas
XG 416 Series	PAG	32, 46, 68	Propane
XG 800 Series	Diester	32, 46, 68	Inert Gas

Xaerus Refrigeration Lubricants Profile

Lubrication Knowhow for all Refrigeration Applications

- HCFC Refrigerants (R22, etc.)
- HFC Refrigerants (R134a, R410a, etc.)
- Ammonia
- Other Natural Refrigerants (CO₂, C₃H₈, etc.)
- Food Grade (NSF) lubricants for Food Processing Applications

Xaerus Refrigeration Compressor Lubricants Profile

- Xaerus has vast data base and experience working with major Refrigeration Compressor OEMs and End Users



Xaerus Chiller Compressor Lubricants Profile

- Xaerus has vast data base and experience working with major Chiller Compressor OEMs and End Users

The logo for Electrolux, featuring a stylized 'E' icon followed by the word 'Electrolux' in a bold, black, sans-serif font.The logo for Carrier, featuring a blue sunburst icon to the left of the word 'Carrier' in a bold, blue, sans-serif font. Below 'Carrier' is the text 'A United Technologies Company' in a smaller, black, sans-serif font.The logo for Thermo King, featuring a blue and white icon of a truck with a cooling unit on the left, followed by the words 'THERMO KING' in a bold, white, sans-serif font on a black background.The logo for Samsung, featuring the word 'SAMSUNG' in a bold, white, sans-serif font inside a blue oval.The logo for York, featuring a blue square icon with a white snowflake on the left, followed by the word 'YORK' in a bold, black, sans-serif font. Below 'YORK' is the text 'BY JOHNSON CONTROLS' in a smaller, black, sans-serif font.The logo for Trane, featuring a red circular icon with white horizontal lines on the left, followed by the word 'TRANE' in a bold, red, sans-serif font. Below 'TRANE' is the tagline 'It's Hard To Stop A Trane.' in a smaller, black, sans-serif font.The logo for Whirlpool, featuring a silver, oval-shaped icon with the word 'Whirlpool' in a black, sans-serif font.The logo for Emerson Climate Technologies, featuring a blue square icon with a white 'E' on the left, followed by the word 'EMERSON' in a bold, white, sans-serif font. Below 'EMERSON' is the text 'Climate Technologies' in a smaller, white, sans-serif font.The logo for Danfoss, featuring the word 'Danfoss' in a red, cursive script font.

Refrigeration Compressor Lubricants



Recommended Product	Refrigerant	Base Oil	ISO Viscosity Grade	Compressor Type
XR 108-68	Ammonia	PAO	68	Reciprocating, Screw
XGF 124-68*	CO ₂	PAO	68	Reciprocating, Screw
XR 208-68**	Ammonia	Severely Hydrotreated Paraffinic	68	Reciprocating, Screw
XR 209-68	Ammonia	Severely Hydrotreated Paraffinic	68	Reciprocating, Screw
XR 212 Series	R-22, R-123	Wax-free Naphthenic	32, 55, 100	Reciprocating, Screw
XR 434 Series	R-134A	PAG	46, 100, 135, 150	Automotive A/C
XR 522 Series	R-22	POE	85, 150, 320	Reciprocating, Screw
XR 532-3MAF	R-134A, R-404A R-507, R-407A, R-407C, R-410A	POE	32	Reciprocating, Rotary Scroll
XR 534 Series	R-134A, R-404A R-407C, R-410A	POE	32, 68, 100, 120, 170, 220	Reciprocating, Screw Scroll, Rotary
XR 600 Series	Ammonia, R-22 R-123, R-502	Alkyl Benzene	32, 68, 100	Reciprocating, Screw

* NSF H-1 Certified ** Contains Seal Conditioner

Xaerus Industrial Lubricants Profile

Lubrication Knowhow for all Critical Heavy Duty Gear Oil Applications

- Prove experience in gear oil supply for marine applications
- Supplying heavy duty gear oil to shipyards for jack up rigs and marine vessels
- Palm oil mills

Industrial Lubricants



Product	Base Oil	ISO Viscosity Grade	Applications
XIF 113 Series	PAO	5, 15, 22, 32	Mechanical Seal Barrier Fluid
XIF 117 Series	PAO	100, 150, 220, 320, 460	Food-Grade Gear Oil
XI 120 Series	PAO	100, 150, 220, 320, 460, 680, 1000	Sulfur Free Gear Oil
XI 130 Series	PAO	100, 150, 220, 320, 460, 680, 1000	Heavy Duty Gear Oil
XI 137 Series	PAO	27, 32, 46	Heavy Duty Gear Oil With Micropitting Protection
XIF 178 Series	PAO	68	Food-Grade Freezer Chains
XV 201 Series	Group II Mineral Oil	22, 68, 100, 150	Vacuum Pump
XIF 239 Series	Group II Mineral Oil	32, 46, 68	Food-Grade Hydraulic Oil
XI 518 Series	POE	220, 280, 320	High Temperature Chains



XAERUS PRODUCT DIFFERENTIATION

Xaerus Air Compressor Lubricants OEM Supply

- Supplies PAO Compressor Lubricant to 11 Major OEMs Worldwide
- **No. 1** PAO Air Compressor OEM Lubricant Supplier in Asia (by volume)
- **2nd** Top PAO Air Compressor OEM Lubricant Supplier Globally (by volume)
- **3rd** Top Synthetic Air Compressor OEM Lubricant Supplier Globally (by volume)
- Air Compressor Oil Formulation Range: Mineral Gp II, PAO, POE, PAG, Diester Base oils

Xaerus Refrigeration Lubricants

- Supplies to 11 OEMs
- Naphthenic Lubricants
 - Outperforms other popular naphthenic products in market
 - 15% Energy Reduction and 20% Refrigeration output increase in applications benchmarks
- POE Lubricants
 - 10 to 30°C lower temperature than competition products in miscibility properties with HFC applications
 - Superior low temperature performance refrigeration transportation and storage applications benchmarks

Xaerus Refrigeration Lubricants

POE Lubricants

- Manufactured according to proprietary chemistry and formulation... not generic off the shelf product or rebranded products
- Strict moisture controlled Nitrogen blanketed dedicated production system to confirm to < 50ppm moisture spec

Few suppliers conform to this best practice. High moisture content in POE supplied by some suppliers will lead to acid corrosion in field applications !

Xaerus Ammonia Refrigeration Lubricants

- Paraffinic and PAO Lubricants
 - Most stable performance
 - In-house ammonia compatibility benchmark
 - Comprehensive product range
 - Various ISO VG
 - Mineral / Semi-synthetic / Full Synthetic
 - Seal conditioning formulation

Xaerus Hydrocarbon Gas Compressor Lubricants

- Supplies to 14 OEM and Oil Companies
- Leader in industry
- OEM, End User, and major oil company supply
- Full understanding on gas – oil dilution behavior
- Data base and proprietary dilution effect modelling
- Corrosion inhibition formulation

Xaerus Global Supply Network

Region	Country	Partner / Supplier
N America	USA	Xaerus Performance Fluids Int'l (Manufacturing/ Global Head office)
SE Asia	Indonesia	PT. Xaerus Performance Indonesia
	Thailand	Xaerus Performance Thailand Limited
	Vietnam	Xaerus Performance Vietnam Company
	Malaysia	Xaerus Performance Fluids Sdn Bhd
	Singapore	Xaerus Performance Singapore Pte Ltd
	Philippines	REFTEC / Xaerus Performance Philippines Inc. (2019)
Europe	Netherlands	Xaerus Europe
M. East	UAE	Xaerus Middle East FZC
S America	Mexico	Xaerus Performance Mexico
	Brazil	Xaerus Brazil LA
	Argentina / Columbia / Uruguay	Rolenor
N Asia	China	Shanghai Techall Automatic Control Ltd
	S. Korea	SNH Co. Ltd, SAGE
Australasia	Australia	Drivetrain Power and Propulsion, Valmec



THANK YOU

