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LEAH Y01

Compressor piston ring and packing material

LEAH Y01 is a compression molded carbon-graphite filled PTFE compound. This material is resistant to most chemicals and recommended for both lubricated and non-lubricated applications for piston rings, rider rings, and rod packing.

Other than 'bone-dry' gases, for which special grades such as LEAH Y05 and Y07 can be specified.

Typical Properties of LEAH Y01

Tensile strength at 20°C (Mpa)	13
Elongation at 20°C (%)	50
Coefficient of thermal expansion (/°C)	70-90x10 ⁻⁶
Hardness (Shore 'D')	60-65
Specific gravity	2.0
Suggested temperature limit (non-lube gas/air compressors) (°C)	200

LEAH should be consulted for the proper design and application of its engineered products and materials.

For further advice and technical support please contact LEAH via the details:

Jacky Wu

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www.leahindustries.com



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LEAH Y02

Compressor piston ring and packing material

LEAH Y02 is a compression molded, glass-fiber reinforced, PTFE compound. Glass fibers are added to decrease creep and wear rate, can be used most lubricated applications.

LEAH Y02 has been developed to give safe and reliable use in oxygen compressors and provides exceptional wear resistance in similar condition.

Typical Properties of LEAH Y02

Tensile strength at 20°C (Mpa)	12
Elongation at 20°C (%)	125
Coefficient of thermal expansion (/°C)	70-90x10 ⁻⁶
Hardness (Shore 'D')	60-65
Specific gravity	2.3
Suggested temperature limit (lube gas / non-lube oxygen compressors) (°C)	200

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LEAH Y03

PET Compressor piston ring and packing material

LEAH Y03 is a compression molded, bronze-filled, PTFE compound, has better thermal conductivity than carbon and glass filled PTFE compounds, is recommended for high temperature and high pressure wet air applications such as PET compressors.

Other than critical condition, LEAH Y11 has been developed to replace Y03 and provides exceptional wear resistance in similar condition.

Typical Properties of LEAH Y03

Tensile strength at 20°C (Mpa)	15
Elongation at 20°C (%)	120
Coefficient of thermal expansion (/°C)	77-95x10 ⁻⁶
Hardness (Shore 'D')	65-70
Specific gravity	3.8
Suggested temperature limit (non-lube air compressors) (°C)	210

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LEAH Y04

Compressor piston ring and packing material

LEAH Y04 is a compression molded, glass fiber enforced PTFE compound, offers better attributes in non-lubricated applications, also perform good in lubricated applications.

Other than critical condition where require long lifetime, LEAH Y05 or Y07 is an alternative option.

Typical Properties of LEAH Y04

Tensile strength at 20°C (Mpa)	15
Elongation at 20°C (%)	100
Coefficient of thermal expansion (/°C)	74-117x10 ⁻⁶
Hardness (Shore 'D')	62-67
Specific gravity	2.2
Suggested temperature limit (non-lube gas compressors) (°C)	200

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LEAH Y05

Special polymer alloy for oil-free Compressor piston ring and rod packings

LEAH Y05 is a proprietary PPS compound shows extreme high performance in non-lubricated application than traditional PTFE compound, is recommended for non-lubricated as well as BOG / LNG compressors.

For high duty application where requires superior physical properties, other materials such as LEAH Y07 and Y08 may be considered.

Typical Properties of LEAH Y05

Tensile strength at 20°C (Mpa)	11
Elongation at 20°C (%)	5
Coefficient of thermal expansion (/°C)	70-90x10 ⁻⁶
Hardness (Shore 'D')	65-70
Specific gravity	1.9
Suggested temperature limit (non-lube gas compressors) (°C)	200

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LEAH Y06

Special polymer alloy for dry nitrogen compressor

LEAH Y06 is a proprietary compound for use in oil-free dry nitrogen compressors, or in other inert gases such as helium or argon and shows extreme high performance in non-lubricated application than traditional PTFE compound.

LEAH Y06 may be selected for low to medium pressure nitrogen compressors. For high pressure nitrogen compressors and for most packing duties, the special grades LEAH Y07 or 08 may be used.

Typical Properties of LEAH Y06

Tensile strength at 20°C (Mpa)	9
Elongation at 20°C (%)	2-4
Coefficient of thermal expansion (/°C)	70-90x10 ⁻⁶
Hardness (Shore 'D')	65-70
Specific gravity	2.0
Suggested temperature limit (non-lube nitrogen / air compressors) (°C)	200

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LEAH Y07

Special polymer alloy for high duty gas compressor piston and rod sealing rings

LEAH Y07 is a hot compression molded, proprietary, filled PEEK compound. The high strength and toughness of this material is coupled with its excellent wear properties in dry gases, allow it to be used for very high-pressure gas applications such as natural gas injection and CNG applications.

The unique strong properties of LEAH Y07 material have used to rod packings in oil-free conditions up to 350 bar, or replace metallic (eg. bronze) materials.

Typical Properties of LEAH Y07

Tensile strength at 20°C (Mpa)	35
Elongation at 20°C (%)	1-2
Coefficient of thermal expansion (/°C)	40-50x10 ⁻⁶
Hardness (Shore 'D')	80-85
Specific gravity	1.5
Suggested temperature limit (non-lube gas compressors) (°C)	230

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LEAH Y08

High duty polymer alloy for dry nitrogen compressor piston and rod sealing rings

LEAH Y08 is a hot compression molded, proprietary, filled PEEK compound for higher duty non-lubricated process gas and bone-dry gas applications especially in helium and nitrogen services.

This material is the preferred selection for dry nitrogen compressor packings, and is able to extend the operating limits of both pressure and temperature, by comparison with LEAH Y06 material.

Typical Properties of LEAH Y08

Tensile strength at 20°C (Mpa)	30
Elongation at 20°C (%)	1-2
Coefficient of thermal expansion (/°C)	40-50x10 ⁻⁶
Hardness (Shore 'D')	80-85
Specific gravity	1.7
Suggested temperature limit (non-lube nitrogen compressors) (°C)	230

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LEAH Y10

Special polymer alloy for extreme high duty gas compressor piston and rod sealing rings

LEAH Y10 is a hot compression molded, proprietary, filled PEEK compound. The high strength and toughness of this material is coupled with its excellent wear properties in dry gases, allow it to be used for very high-pressure gas applications such as gas injection in oilfield or other extreme conditions.

LEAH Y10 material have used to rod packings up to 1,000 bar, or piston rings up to 500bar, or replace LEAH Y07 materials for better results.

Typical Properties of LEAH Y10

Tensile strength at 20°C (Mpa)	70
Elongation at 20°C (%)	2-3
Coefficient of thermal expansion (1/°C)	40-45x10 ⁻⁶
Hardness (Shore 'D')	85-90
Specific gravity	1.5
Suggested temperature limit (non-lube gas compressors) (°C)	230

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LEAH Y11

Special polymer alloy for high duty air compressor piston and rod sealing rings

LEAH Y11 is a special material developed for high duty, oil free atmospheric air compressors, such as those used in the manufacture of PET bottles, normally for final stages piston rings and rod packings with better performance than LEAH Y03.

Extensive wear testing has confirmed LEAH Y11 is match various cylinder and piston rod materials, including cast iron, alloy and stainless steel, or chrome plating.

Typical Properties of LEAH Y11

Tensile strength at 20°C (Mpa)	13
Elongation at 20°C (%)	75
Coefficient of thermal expansion (/°C)	70-90x10 ⁻⁶
Hardness (Shore 'D')	70-75
Specific gravity	3.0
Suggested temperature limit (non-lube air compressors) (°C)	210

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