

Lionpak[®]

2100

High purity PTFE

Previously known as Fluolion[®] Filament D



Lionpak[®] 2100 is a high-purity white packing, cross-plaited from tough thermally stable PTFE fibre yarn.

This yarn is impregnated with densified particles of PTFE to generate extra lubrication. The packing is then cleansed of all organic matter and volatile content.

Prime features

- High purity, with excellent chemical resistance.
- Long life valve sealing with minimum maintenance.
- Clean and highly conformable for ease of fitting.

Typical applications

The purity of Lionpak[®] 2100 allows it to be used as a valve packing for potable water applications. It is also suitable for slow speed pumps handling chemicals.

Chemical properties

Compatible with media in the range pH 0-14, including corrosive acids and alkalis but excluding molten alkali metals, fluorine compounds and aqua regia.

How supplied

All popular square sections from 3 mm to 25 mm (1/8" to 1") in boxes containing 8 m (26' 3"), or in coil form by the metre/foot or kilogram/pound. Also supplied as split preformed rings and sets.



VALVE STEM DUTIES

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum System Pressure:

25 MPa/250 bar (3626 psi)



CENTRIFUGAL PUMPS AND ROTARY EQUIPMENT

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Shaft Speed:

4 m/s (787 fpm)

Maximum System Pressure:

1 MPa/10 bar (145 psi)



RECIPROCATING PUMPS AND RAMS

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Rod Speed:

0.5 m/s (98 fpm)

Maximum System Pressure:

5 MPa/50 bar (725 psi)

APPROVALS



WRAS approved for use with hot and cold potable water at up to 85°C (185°F).

Lionpak[®]

2101

Pure dry PTFE packing
with low friction capabilities

Lionpak[®] 2101 is an interlocked braided packing made of pure dry PTFE fibre yarn.

It is non-toxic, and contains no lubricants or additives.

Prime features

- Very low coefficient of friction.
- Minimal wear on shafts and sleeves.
- Long service-free life, with virtually no volume loss due to chemical action.
- Very little gland adjustment needed after initial installation.

Typical applications

Valves, pumps, mixers, reactors, agitators and extruders, in applications where the low friction characteristics of pure PTFE are required. Recommended for duties in compressed air systems.

Chemical properties

Inert to chemicals within the range pH 0-14, excluding molten alkali metals, fluorine compounds and aqua regia.

How supplied

All popular square sections from 4 mm to 50 mm ($\frac{5}{32}$ " to 2") in boxes containing 8 m (26' 3"), or in coil form by the metre/foot or kilogram/pound. Also supplied as split preformed rings and sets.



VALVE STEM DUTIES

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum System Pressure:

25 MPa/250 bar (3626 psi)



CENTRIFUGAL PUMPS AND ROTARY EQUIPMENT

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Shaft Speed:

4 m/s (787 fpm)

Maximum System Pressure:

1 MPa/10 bar (145 psi)



RECIPROCATING PUMPS AND RAMS

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Rod Speed:

0.5 m/s (98 fpm)

Maximum System Pressure:

5 MPa/50 bar (725 psi)

Lionpak[®]

2505

PTFE/carbon yarn packing for frequently operated control valves

Lionpak[®] 2505 is a state-of-the-art gland packing especially developed for hard-working control valves.

This packing operates efficiently under arduous operating conditions where high resilience, high mechanical strength and high tensile strength are required.

The core of the packing is high strength carbon yarn, heavily lubricated with a special fluoropolymer dispersion and also treated with an inorganic passive corrosion inhibitor. The outer jacket is braided from pure PTFE yarn, lubricated with a PTFE suspensoid.

Prime features

- Construction provides optimum leakage control in hard-working control valves.
- Mechanically and thermally stable.
- Very high recovery factor.
- PTFE suspensoid acts as a blocking agent.
- Dissipates heat without chemical hardening.
- Easy to install, with smooth removal at shutdown.

Typical applications

Control valves and plug valves - especially those that are frequently operated.

Suitable for use with hydrocarbons, petrochemicals, superheated steam, saturated steam, organic/inorganic chemicals, acids and alkalis, solvents, amides, fuel oil, lubricating oil, dyestuffs, paints, and synthetic resins.

Chemical properties

Compatible with media in the range pH 0-14, excluding strong oxidising agents.

How supplied

All popular square sections from 6.5 mm to 50 mm ($\frac{1}{4}$ " to 2") in boxes containing 8 m (26' 3"), or in coil form by the metre/foot or kilogram/pound. Also supplied as split preformed rings and sets.



SPECIALISED PACKING



VALVE STEM DUTIES

Maximum Operating Temperature:

+260°C (+500°F)

Minimum Temperature:

-200°C (-328°F)

Maximum System Pressure:

30 MPa/300 bar (4351 psi)

Lionpak®

2200

Cross-plaited thermally stable PTFE packing
Previously known as Fluolion® Filament L

Lionpak® 2200 is a cross-plaited packing made from tough thermally stable PTFE fibre yarn.

This yarn is impregnated with densified particles of PTFE to generate additional lubrication.

Prime features

- Excellent chemical resistance.
- High performance sealing in valve and pump applications.
- Long and efficient working life with minimum maintenance requirements.
- Clean and highly conformable for ease of fitting.

Typical applications

This high performance packing is used where its exceptional chemical resistance is required in valves, rotary equipment and reciprocating plant.

Chemical properties

Compatible with media in the range pH 0-14, including corrosive acids and alkalis but excluding molten alkali metals, fluorine compounds and aqua regia.

How supplied

All popular square sections from 3 mm to 25 mm (1/8" to 1") in boxes containing 8 m (26' 3"), or in coil form by the metre/foot or kilogram/pound. Also supplied as split preformed rings and sets.



VALVE STEM DUTIES

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum System Pressure:

15 MPa/150 bar (2175 psi)



CENTRIFUGAL PUMPS AND ROTARY EQUIPMENT

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Shaft Speed:

10 m/s (1969 fpm)

Maximum System Pressure:

2.5 MPa/25 bar (363 psi)



RECIPROCATING PUMPS AND RAMS

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Rod Speed:

1.0 m/s (197 fpm)

Maximum System Pressure:

10 MPa/100 bar (1450 psi)

Lionpak[®]

2201

Dimensionally stable PTFE for chemical processing

Lionpak[®] 2201 is a duplex braided packing of pure PTFE fibre yarns.

It contains James Walker's proprietary break-in lubricant and a PTFE dispersion.

Prime features

- Non-toxic and inert to protect the purity and safety of fluid media.
- Dimensionally stable to ensure trouble-free operational life with reduced maintenance costs.
- Inlube break-in lubricant provides additional lubrication during the complete operational life of the product.
- PTFE dispersion acts as a blocking agent and antifriction additive.

Typical applications

Recommended for both static and dynamic operations with pumps, valves, mixers, reactors, agitators, dryers and air compressors. Suitable for duties with acids and alkalis of any concentration, solvents, organic and inorganic chemicals, petrochemicals, dyestuffs, paints and synthetic resins.

Chemical properties

Compatible with media in the range pH 0-14, excluding strong oxidisers, molten alkali metals and fluorine compounds and aqua regia.

How supplied

All popular square sections from 4 mm to 50 mm ($\frac{5}{32}$ " to 2") in boxes containing 8 m (26' 3"), or in coil form by the metre/foot or kilogram/pound. Also supplied as split preformed rings and sets.



VALVE STEM DUTIES

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum System Pressure:

15 MPa/150 bar (2175 psi)



CENTRIFUGAL PUMPS AND ROTARY EQUIPMENT

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Shaft Speed:

10 m/s (1969 fpm)

Maximum System Pressure:

2.5 MPa/25 bar (363 psi)



RECIPROCATING PUMPS AND RAMS

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Rod Speed:

1.0 m/s (197 fpm)

Maximum System Pressure:

10 MPa/100 bar (1450 psi)

Lionpak[®]

2300

100% GFO[®] yarn packing
Previously known as Fluograf[®]

Lionpak[®] 2300 is a highly versatile product that adds a new dimension to compression packing reliability and performance.

Made totally from WL Gore & Associates' highly developed GFO[®] yarn - combining the benefits of ePTFE, graphite and high temperature lubricants - this cross-plaited packing offers the ideal balance between density, resilience, strength and durability.

Prime features

- Extended service life - by up to 400% in harsh environments.
- Well proven with aggressive media.
- High thermal conductivity for cool running.
- Low coefficient of friction and minimal shaft wear.
- Very good start-up and emergency running characteristics.
- Non-hardening.

Typical applications

Valves and pumps handling aggressive chemical media in the petrochemical, pulp and paper, power generation and metallurgical sectors - as well as cold potable water, and steam at up to 260°C (500°F).

Chemical properties

Compatible with media in the range pH 0-14 including steam, but excluding strong oxidising agents such as aqua regia, fuming nitric acid, oleum, and molten alkali metals.

How supplied

All popular square sections from 3 mm to 25 mm (1/8" to 1") in boxes containing 8 m (26' 3"), or in coil form by the metre/foot or kilogram/pound. Also supplied as split preformed rings and sets.

Notes:

- * Refer to James Walker for duties up to 28 m/s (5512 fpm)
- ** More severe duties can be sealed with specially designed arrangements.

GFO[®] is a registered trademark of WL Gore & Associates.



VALVE STEM DUTIES

Maximum Operating Temperature:

+260°C (+500°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum System Pressure:

8 MPa/80 bar (1160 psi)



CENTRIFUGAL PUMPS AND ROTARY EQUIPMENT

Maximum Operating Temperature:

+260°C (+500°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Shaft Speed:

22 m/s (4331 fpm)*

Maximum System Pressure:

1 MPa/10 bar (145 psi)



RECIPROCATING PUMPS AND RAMS

Maximum Operating Temperature:

+260°C (+500°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Rod Speed:

1.0 m/s (197 fpm)

Maximum System Pressure:

8 MPa/80 bar (1160 psi)**

APPROVALS



WRAS approved for use with cold potable water up to 23°C (73°F)

Lionpak®

2302

PTFE/graphite for resilience
& excellent chemical resistance

Lionpak® 2302 is an improved duplex braided packing of expanded PTFE with high quality graphite intimately entrapped in the porous structure of the PTFE resin.

The product is further lubricated with molybdenum disulphide (MoS_2).

Prime features

- A dense packing offering a high degree of resilience and dimensional stability.
- The graphite provides heat dissipation to enhance the product's long and efficient working life, which is also improved by the excellent thermal conductivity of molybdenum disulphide.
- Molybdenum disulphide enhances high speed rotary operations by minimising friction and wear.
- The molybdenum disulphide content also provides good chemical resistance.

Typical applications

Centrifugal and reciprocating pumps, valves, large diameter shafts, reactor vessels, agitators, mixers and autoclaves. Suitable for duties with acids and alkalis of any concentration, phosphoric acid, hydrocarbons, solvents, raw water, demineralised water, condensate and cooling water.

Chemical properties

Compatible with media in the range pH 0-14, excluding strong oxidisers, molten alkali metals and fluorine compounds.

How supplied

All popular square sections from 4 mm to 50 mm ($\frac{5}{32}$ " to 2") in boxes containing 8 m (26' 3"), or in coil form by the metre/foot or kilogram/pound. Also supplied as split preformed rings and sets.



VALVE STEM DUTIES

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum System Pressure:

8 MPa/80 bar (1160 psi)



CENTRIFUGAL PUMPS AND ROTARY EQUIPMENT

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Shaft Speed:

22 m/s (4331 fpm)

Maximum System Pressure:

1 MPa/10 bar (145 psi)



RECIPROCATING PUMPS AND RAMS

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Rod Speed:

1.0 m/s (197 fpm)

Maximum System Pressure:

8 MPa/80 bar (1160 psi)

Lionpak®

2303

Reliable packing based on graphite & PTFE yarn with silicone-free lubrication

Previously known as Liongraf

Lionpak® 2303 is a highly reliable pump and valve packing based on graphite and PTFE yarn that is thermally stabilised then lubricated with a silicone-free compound.

Sections of 6.5 mm (¼") square and above are of cross-plaited construction; sections below 6.5 mm are plaited.

Prime features

- Strong, durable and extrusion resistant.
- Reliable over a wide range of duties.
- Excellent chemical resistance.
- Low friction with high thermal conductivity.

Typical applications

Widely regarded as an economical packing for universal application and the reduction of stockholding requirements. Well proven in the petrochemical, power generation, marine and metallurgical sectors, and by pump and valve manufacturers for OEM installation. It is suitable for duties with steam, condensate, effluents, fuels and oils, acids, alkalis and chemical solutions.

Chemical properties

Compatible with media in the range pH 0-14, including corrosive fluids and solvents.

How supplied

All popular square sections from 3 mm to 25 mm (⅛" to 1") in boxes containing 8 m (26' 3"), or in coil form by the metre/foot or kilogram/pound. Also supplied as split preformed rings and sets.



SPECIALISED PACKING



VALVE STEM DUTIES

Maximum Operating Temperature:

+260°C (+500°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum System Pressure:

12 MPa/120 bar (1740 psi)



CENTRIFUGAL PUMPS AND ROTARY EQUIPMENT

Maximum Operating Temperature:

+260°C (+500°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Shaft Speed:

17.5 m/s (3445 fpm)

Maximum System Pressure:

2 MPa/20 bar (290 psi)



RECIPROCATING PUMPS AND RAMS

Maximum Operating Temperature:

+260°C (+500°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Rod Speed:

2.0 m/s (394 fpm)

Maximum System Pressure:

8 MPa/80 bar (1160 psi)

Lionpak®

2504

PTFE/graphite/fluoropolymer
for industrial water duties

Lionpak® 2504 is a combination, duplex-braided packing, comprising red fluoropolymer-based yarn and expanded PTFE intimately bonded with graphite yarn.

Prime features

- A dense packing with a high degree of resilience, incorporating a break-in lubricant.
- Both yarns are highly lubricated during manufacture; the red fluoropolymer-based yarn releases lubricant on inside diameter when packing is bent around the shaft.
- This lubrication system provides very smooth start-up for pumps, plus long service life with low friction properties to safeguard shafts and sleeves from wear.
- Graphite content aids heat dissipation to further extend the service life.

Typical applications

Dynamic and static duties, including pumps, valves, mixers and reactors, across many industrial sectors. It is recommended for cooling water pumps and condensate extraction systems. Also suitable for use with demineralised water, raw water, hydrocarbons, paints, synthetic resins, emulsions, viscous slurries, and many other general industrial media.

Chemical properties

Compatible with media in the range pH 3-14.

How supplied

All popular square sections from 4 mm to 50 mm ($\frac{5}{32}$ " to 2") in boxes containing 8 m (26' 3"), or in coil form by the metre/foot or kilogram/pound. Also supplied as split preformed rings and sets.



SPECIALISED PACKING



VALVE STEM DUTIES

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Temperature:

-100°C (-148°F)

Maximum System Pressure:

25 MPa/250 bar (3626 psi)



CENTRIFUGAL PUMPS AND ROTARY EQUIPMENT

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Temperature:

-100°C (-148°F)

Maximum Shaft Speed:

20 m/s (3937 fpm)

Maximum System Pressure:

2 MPa/20 bar (290 psi)



RECIPROCATING PUMPS AND RAMS

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Temperature:

-100°C (-148°F)

Maximum Rod Speed:

2.0 m/s (394 fpm)

Maximum System Pressure:

10 MPa/100 bar (1450 psi)

James Walker Distributor

Sweden and Denmark

GA Lindberg PetroSeal AB

Raseborgsgatan 9
164 06 Kista
Sweden

T: +46 (0)8 703 02 00
E: info@petroseal.se

petroseal.se



Health warning: If PTFE products are heated to elevated temperatures, fumes will be produced which may give unpleasant effects, if inhaled. Whilst some fumes are emitted below 300°C (572°F) from PTFE, the effect at these temperatures is negligible. Care should be taken to avoid contaminating tobacco with particles of PTFE or PTFE dispersion, which may remain on hands or clothing. Safety Data Sheets (SDS) are available on request.

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James Walker Sealing Products & Services Ltd

Registered Office: Lion House, Oriental Road,
Woking, Surrey GU22 8AP, United Kingdom.

Reg no: 00264191 England