

pour grandes vitesses  
pour hautes températures

# fils de graphite pur

TRESSE

## LATTY<sup>®</sup>graf T

Excellente reprise élastique  
Coefficient de frottement très faible  
Haut pouvoir d'évacuation calorifique  
Mise en place facilitée  
par sa très grande souplesse

-200 °C	300 bar	35 m/s	pH 0-14
+600 °C	30 MPa		

Tresse idéale pour les pompes à vitesse élevée (35 m/s)

**LATTY<sup>®</sup>graf T** assure

- l'utilisation sur tous les fluides chimiques à l'exclusion des oxydants
- la sécurité et la longévité en exploitation
- la fuite minimum
- la réduction des interventions

 **LATTY<sup>®</sup>**  
international s.a.



# LATTY<sup>®</sup>graf T

## CONSEILS DE MONTAGE

Son utilisation n'exige pas de surveillance particulière. Seules deux précautions simples sont à observer :

- S'assurer avant montage que la section de la tresse est au maximum égale à la paroi de la chambre du presse-étoupe (de préférence inférieure de 0,4 à 0,5 mm).
- Régler le fouloir après mise en place de la tresse sans forcer (serrage à la main).

## RÉFÉRENCES INDUSTRIELLES

La tresse LATTYgraf T est régulièrement utilisée par la plupart des centrales thermiques sur les pompes alimentaires. Pompes qui sont, le plus souvent, mécaniquement

assez délicates (arbre long et mince) et qui tolèrent mal les chutes de charge (cavitation, vibrations).

*Paramètres d'utilisation :*

- 4 500 tours/minute.
- 25 à 28 mètres par seconde.
- Eau alimentaire déminéralisée et traitée 180 à 200 °C.
- Utilisation permanente :
  - Tenue du presse-étoupe : 10 000 à 15 000 heures en fonction de la **nature du revêtement** de la chemise d'arbre, soit l'équivalent de deux campagnes.
  - Changement de la chemise : toutes les 30 000 heures seulement.

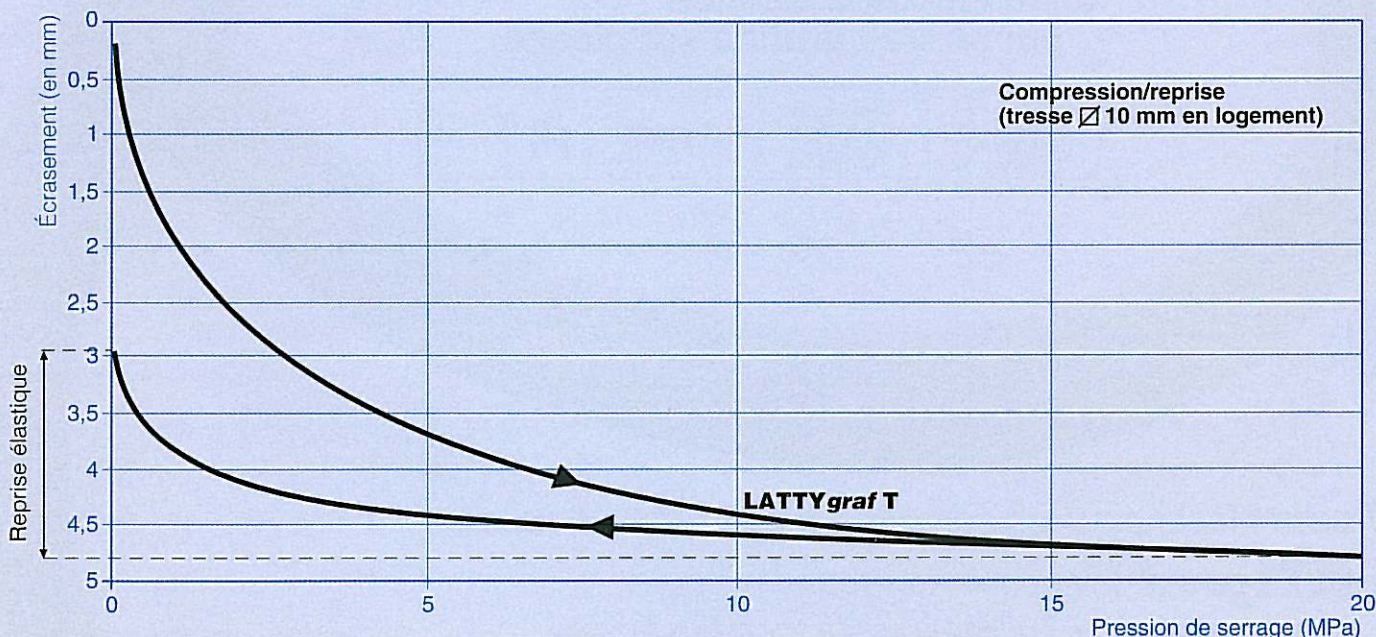
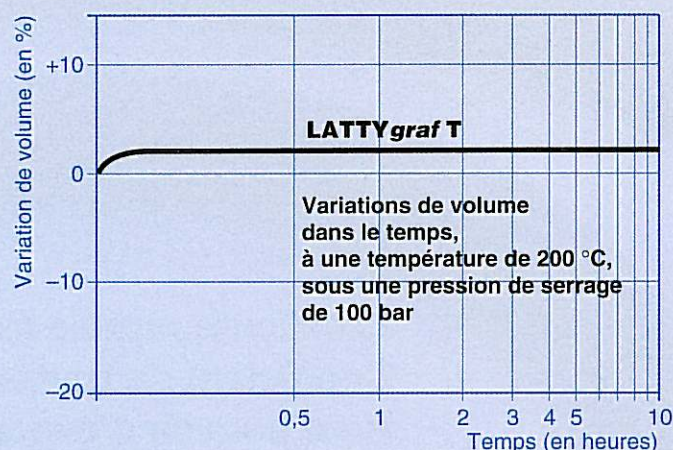
Les avantages de LATTYgraf T peuvent se résumer par :

- une stabilité dimensionnelle remarquable dans le temps ;
- la suppression des interventions pour resserrage ;
- le maintien des caractéristiques garantissant une étanchéité efficace (fuite minimum).



L'excellente reprise élastique de LATTYgraf T met en évidence :

- son excellente aptitude à accepter les chocs thermiques ;
- sa capacité d'absorber les déformations mécaniques (excentrations; vibrations, etc.).



Les indications portées sur cette documentation ne le sont qu'à titre indicatif et ne sauraient engager la responsabilité de LATTY international. En effet, nous ne garantissons pas les performances de nos produits en cas de montage déficieux ou en cas d'utilisation non conforme aux indications portées. LATTY international ne répond que de la qualité de ses produits, n'intervenant ni dans le montage, ni dans la mise en œuvre qui doivent être faits dans les règles de l'art.



**LATTY<sup>®</sup> international s.a.**

Votre source pour toutes solutions d'étanchéité

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**PACKINGS**

PREFORMED PACKING RINGS



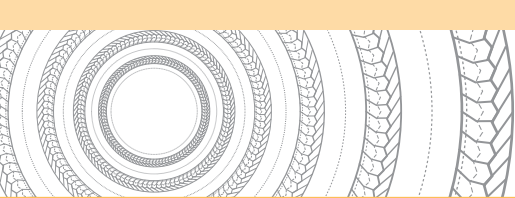
# LATTYgraf 6745 NG

**NEW**



## CARBON PACKING WITH REDUCED FRICTION

For fittings, pumps and valves  
high pressure, high temperature  
up to 600°C.



# LATTYgraf 6745 NG

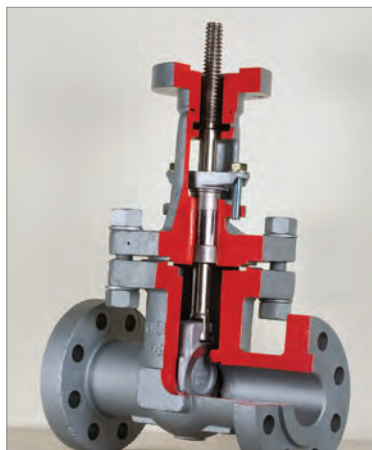
PACKINGS PREFORMED PACKING RINGS

LATTYgraf 6745 NG contains a corrosion inhibitor developed from an exclusive process to provide unlimited protection of the stem, stuffing box housing and stuffing box over time.

Packing made from continuous carbon yarns and impregnated yarn-to-yarn with PTFE using our patented filcoat process. It is then re-impregnated during braiding with a graphite-and-PTFE-based mix to ensure optimum performance of pumps and valves.

## Advantages

- High resistance to significant temperature or pressure variations
- Reduced operating effort
- The corrosion inhibitor (exclusive LATTY process) durably protects the parts of the fitting
- Ready-to-use preformed rings: quick stuffing box implementation and replacement, reduced production downtime
- Reduced maintenance costs and increased equipment service life
- Multi-purpose: suitable for a large number of applications
- Made in France



## Homologations

- AECL Valves (Atomic Energy Canada Limited) as sets of preformed rings and/or used in conjunction with LATTYflon 3265 LM LATTYgraf 6745 NG

Product	Temperature	Pressure	pH
LATTYgraf 6745 NG	+450°C to +650°C	300 bar	0-14

## Applications (all fluids)

- Chemical industry
- Petrochemical industry
- Energy production
- Refineries



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Réf: 90005132 (05/2011)

# LATTY<sup>®</sup>graf 6785

## the advantages of the high performance multiservice packing

### FOR PUMPS AND VALVES

#### Parameters (non associated)

Temperature	(Steam 600 °C) 450 °C
Pressure	300 bar / 30 MPa
Speed	25 m/sec.
pH	0 - 14

#### Advantages

- ◆ High performance multiservice packing
- ◆ Outstanding behaviour on pumps and valves
- ◆ Reduced sleeve wear
- ◆ Very good resistance to aggressive chemicals
- ◆ Wide use: for both pumps and valves

# LATTY<sup>®</sup>graf 6785

The high performance  
MULTISERVICE packing, for pumps and valves,  
based on carbon yarns

## Applications

- High temperature
- High pressure
- High speed
- Chemical resistance

## Advantages

- High performance multiservice packing
- Outstanding behaviour on pumps and valves
- Reduced sleeve wear
- Very good resistance to aggressive chemicals
- Its wide use allows a standard packing for both pumps and valves.

## Other products

from the graphite and carbon yarn range:

**LATTYgraf T** and **TSP**,  
**LATTYgraf 6118**  
and **LATTYgraf 6940**

## Constitution

- The packing LATTYgraf 6785 is based on selected carbon yarns, impregnated with a graphite mix.

## Physical characteristics

- Density 0.9 / 1.1
- Friction coefficient 0.05 / 0.1\*
- Thermal conductivity 5 W/m·K
- Radial transmission coefficient 0.6
- Extractible chlorine ions < 100 ppm

\* Lubricated

## Parameters (non associated)

Temperature	(Steam 600 °C) 450 °C
Pressure	300 bar / 30 MPa
Speed	25 m/sec.
pH	0 – 14
PV factor	450
PT factor	95 000

## Precaution:

As for any packing based on carbon yarns, it is recommended to tape the packing at the level of the cut. This is A PLUS which will then facilitate the fitting of the rings.

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**BRAIDED PACKINGS & RINGS**



# LATTY<sup>®</sup> graf 6940

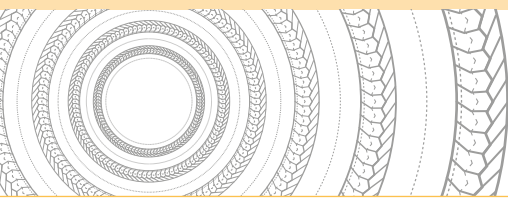


**ANTI-EXTRUSION PACKING FOR HIGH-PERFORMANCE  
AND HIGH-TEMPERATURE APPLICATIONS**



[www.latty.com](http://www.latty.com)





# LATTY<sup>®</sup> graf 6940

BRAIDED PACKINGS & RINGS

## Anti-extrusion packing for high-performance and high-temperature applications.

### Characteristics

- ▶ Packing made of expanded graphite yarns reinforced with Inconel wires and coated with a graphite-based mix
- ▶ Contains a corrosion inhibitor to protect the valve stem and the stuffing box
- ▶ Available in preformed packing rings, on request
- ▶ Limitation: precautions for use in oxidising environment

### Advantages

- ▶ Withstands high pressures and prevents any risks of graphite extrusion
- ▶ Use where fire-safety is required
- ▶ High-temperature and high-pressure applications

### Approvals

- ▶ BAM (oxygen)
- ▶ Amended fire test API 607

### Industries

- ▶ Power stations
- ▶ Refineries

### Equipments

- ▶ Valves
- ▶ Boiler plants

### Dimensions

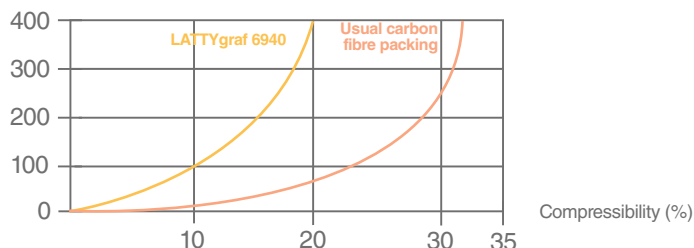
- ▶ Available in square section of 3 to 25,4 mm.

### Parameters (not associated)

- ▶ Pressure: < 400 bar
- ▶ Temperature: -200°C to +600°C <br/> <450°C (oxidant)
- ▶ Speed: < 1 m/s
- ▶ pH: 0 - 14

### Behaviour of the packing LATTY<sup>®</sup> graf 6940

Tightening pressure (daN/cm<sup>2</sup>)



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**BRAIDED PACKINGS & RINGS**



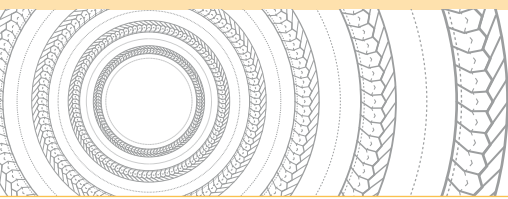
# LATTY<sup>®</sup> graf 6940 EF



**CARBON/GRAPHITE PACKING  
FUGITIVE EMISSIONS FOR VALVES  
AND FITTINGS**

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# LATTY<sup>®</sup> graf 6940 EF

BRAIDED PACKINGS & RINGS

## Carbon/graphite packing to fight against fugitive emissions

### Characteristics

- ▶ Packing made of expanded graphite yarns reinforced with Inconel wires, coated with a graphite-based mix incorporating an agent to improve the friction coefficient.
- ▶ Contains a corrosion inhibitor to provide protection against corrosion of the stem and stuffing box housing. This protection is unlimited in time.
- ▶ On request, available as preformed rings.

### Advantages

- ▶ Heat transfer and all high-temperature fluids.
- ▶ Reduced friction
- ▶ High-temperature and high-pressure applications

### Certifications

- ▶ TUV (VDI 2440)
- ▶ BAM (oxygen)
- ▶ API 589

### Industries

- ▶ Energy production
- ▶ Refineries
- ▶ Boilers

### Equipments

- ▶ Valves and fittings
- ▶ Boilers

### Dimensions

- ▶ Square sections available from 4 to 18 mm
- ▶ Other dimensions on request

### Parameters (not associated)

- ▶ Pressure: < 400 bars
- ▶ Temperature: -200°C to +600°C
- ▶ Speed: < 1 m/s
- ▶ pH: 0 to 14

### Note

- ▶ LATTYgraf 6940 EF is recommended as anti-extrusion rings when used in conjunction with: LATTYgraf EF4 or LATTYflon 3260 LM.



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# LATTY<sup>®</sup>graf 6118

## Sealing of valve stems High pressure / High temperature

### Application cases

- Thermal power stations 180 bar, 550 °C
- Refineries 80 bar, 530 °C
- Steam generating boilers
- Steam-water systems

### Parameters (non associated)

#### Temperature:

- oxidizing environment < 450 °C
- steam or non-oxidizing environment 600 °C

Pressure 30 MPa (300 bar)

Speed < 1 m/s

pH 0 – 14

### Associated parameters (example)

Pressure 18 MPa (180 bar)

Temperature 550 °C

Superheated steam

### Technical characteristics

Density (depending on sections) 1 to 1.4

Thermal conductivity 5 W/m·K

Friction coefficient 0.05/0.1

Radial transmission Coefficient 0.6

# LATTY<sup>®</sup>graf 6118

## Problem to be solved

Sealing of valve stems, protecting them against corrosion by means of inhibitors, in use with superheated water or high-temperature and high-pressure steam.

## The solution: the packing LATTY<sup>®</sup>graf 6118

- Based on a graphite compound yarn and carbon fibres for good resistance to temperature.
- Reinforced with Inconel reinforced fibres designed to stand the high tightening loads induced by the operating fluid pressure.
- The combination of carbon and Inconel reinforced fibres produces a very homogeneous and resilient yarn.

---

*Thanks to its specific fibrous structure, LATTY<sup>®</sup>graf 6118 offers very good heat resistance under stress compared to usual packings based on synthetic fibres.*

*When the tightening load has become stable, low relaxation level and improved stability make this new product a possible substitute for asbestos-based packings.*

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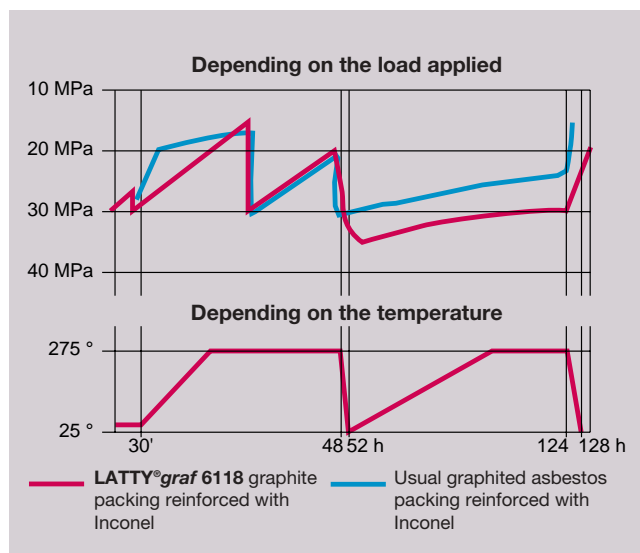
## Other products

For rotary uses, we also propose the LATTY<sup>®</sup>graf 6785 or LATTY<sup>®</sup>graf T packings from the carbon/graphite product range.

## Fitting recommendations

- LATTY<sup>®</sup>graf 6118 is available in coils or as preformed rings.
- LATTY<sup>®</sup>graf 6118 can be cut easily with a sharp knife.
- LATTY<sup>®</sup>graf 6118 can be used on its own (ease of use, saving inventory and storage).
- LATTY<sup>®</sup>graf 6118 can also be fitted as anti-extrusion top and bottom rings in combination with expanded graphite rings (such as LATTY<sup>®</sup>graf E, E2, E2P) or for motorized valves together the LATTY<sup>®</sup>flon 3260 LM packing.
- When LATTY<sup>®</sup>graf 6118 is used alone, the tightening load should be twice or three times higher than the operating pressure of the fluid. When combined with graphite rings (such as LATTY<sup>®</sup>graf E, E2, E2P) or with the LATTY<sup>®</sup>flon 3260 LM packing, the tightening load should be 1.5 times the fluid pressure.
- The tightening load should be within 15 MPa (150 bar) minimum and 60 MPa (600 bar) maximum.

## Behaviour of LATTY<sup>®</sup>graf 6118



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**PACKINGS**

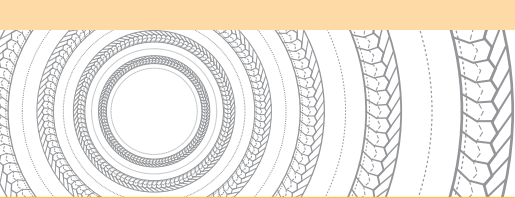
PREFORMED PACKING RINGS

# LATTYgraf 6988 EF

**NEW**

**SPECIALLY DESIGNED FOR USE  
ON VALVES AND FITTINGS  
UP TO 600°C.**

**Fittings at medium and high steam pressure.  
Reduced friction coefficient to meet  
the Fugitive Emission requirements.**



# LATTYgraf 6988 EF

PACKINGS PREFORMED PACKING RINGS

Packing made from exclusive LATTY yarn based on a high-resistance mix of carbon and expanded graphite yarns, impregnated and coated with a graphite-based mix.

LATTYgraf 6988 EF contains a corrosion inhibitor developed from an exclusive process to provide unlimited protection of the stem, stuffing box housing and stuffing box over time.

LATTYgraf 6988 EF, used as anti-extrusion rings in conjunction with LATTYgraf EF NG, LATTYflon 3260 LM or LATTYflon 3265 LM, complies with the requirements of ISO.

## Advantages

- **High resistance** at temperatures up to 600°C (non oxidising environment)
- **Very high chemical resistance**
- **The corrosion inhibitor** (exclusive LATTY process) durably protects the parts of the fitting
- **Ready-to-use preformed rings:** quick stuffing box implementation and replacement, reduced production downtime
- **Reduced maintenance costs** and increased equipment service life
- **Multi-purpose:** suitable for a large number of applications
- **Made in France**



## Homologations

- TA-Luft: complies with the requirements of VDI 2440
- Standard ISO 15848-1, Class BH in industrial valves and fittings: Qualification measurement, tests and operating methods for Fugitive Emissions

Product	Temperature	Pressure	pH
LATTYgraf 6988 EF	-200°C to + 600°C	40 Mpa	0-14

## Applications (all fluids)

- High-performance fittings and all fluids at high temperatures
- Chemical industry
- Aggressive chemical environments
- Energy production
- Petrochemical industry
- Refineries



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**PACKINGS**

PREFORMED PACKING RINGS

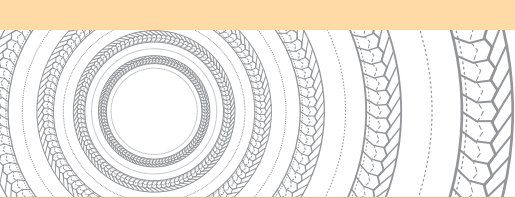
# LATTYgraf 6995 NG

**NEW**

A close-up photograph of the LATTYgraf 6995 NG product. In the foreground, a stack of five dark, cylindrical preformed packing rings is shown. The rings have a textured, fibrous appearance. To the left and extending into the background, there are several thick, braided packing cords made of the same material. The background is a plain, light-colored surface.

**PACKINGS & PREFORMED RINGS  
HIGH PERFORMANCE  
VERY HIGH PURITY**

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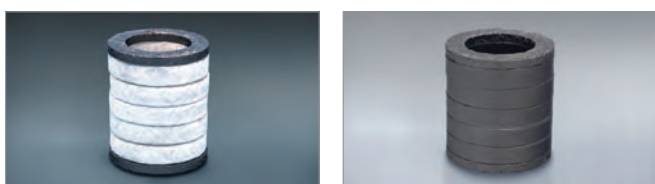


# LATTYgraf 6995 NG

PACKINGS PREFORMED PACKING RINGS

The new packings and preformed rings LATTYgraf 6995 NG with 99.5% graphite yarns are a rampart against Fugitive Emissions.

Packing made from high-purity expanded graphite yarns (>99.5%) coated with inconel yarns and incorporating an additional agent to improve friction coefficient. LATTYgraf 6995 NG contains a corrosion inhibitor developed from an exclusive process to provide unlimited protection of the stem, stuffing box housing and stuffing box over time.



LATTYgraf 6995 NG, used as anti-extrusion rings in conjunction with LATTYgraf EF NG, LATTYflon 3260 LM or LATTYflon 3265 LM, complies with the requirements of ISO 15848-1, Class BH.

## Advantages

- Specially designed for specific requirements of industrial valves and fittings
- Very high chemical resistance
- Very high-purity
- High resistance to significant temperature or pressure variations
- The corrosion inhibitor (exclusive LATTY process) durably protects the parts of the fitting
- Ready-to-use preformed rings: quick stuffing box implementation and replacement, reduced production downtime
- Reduced maintenance costs and increased equipment service life
- Multi-purpose: suitable for a large number of applications
- Made in France

Product	Temperature	Pressure	pH
LATTYgraf 6995 NG	-200°C to + 600°C	40 Mpa	0-14

## Applications (all fluids)

- Fittings
- Chemical industry
- Petrochemical industry
- Energy production
- Refineries



## Homologations

- TA-Luft: complies with the requirements of VDI 2440
- Standard ISO 15848-1, Class BH in industrial valves and fittings: Qualification measurement, tests and operating methods for Fugitive Emissions
- Complies with the requirements of Clean Air Act Amendments

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