WATTS®

Which is the best seal for the job?

THE GUIDE



SIRIUS® boasts a 115-year track-record of successful partnerships with professionals

With a catalogue of over 2000 items, **SIRIUS®** is the leading brand for professional-quality seals.

SIRIUS® sets the standard in the market, with must-have seals like the **SIRIUS® vulcanised fibre** seal and the **SIRIUS®** n°4 fitting that has won plaudits from ceramic manufacturers.

Some of our seals are entirely unique, like the **Néopan®** discs that are widely acclaimed by plumbers.

SIRIUS® is continuously innovating, as witness our new range of **SIRGAZ®** seals, which are fully compliant with the applicable standards.

SIRIUS®: a by-word for reliability and long service-life for 115 years

What is ACS?

ACS stands for "**A**ttestation de **C**onformité **S**anitaire", meaning certification of sanitary compliance. It has been compulsory in France since 24 December 2006, and is issued by a laboratory authorised by the ministry of health, in accordance with article R. 1321-52 of the public health code.

It is a French approval system that helps assess a product's suitability for contact with water intended for human consumption, in light of the regulatory requirements in force.

This is because the materials used for the storage and distribution of water can adversely affect the quality of the water supplied to consumers.

The end-result can be impaired organoleptic properties, degraded microbiological quality and even the appearance of toxic residues.

In order to help manufacturers build and obtain evidence of the sanitary compliance of their products, the French health authorities developed the sanitary compliance certification system (ACS) in 1999.

The system is applicable to organic materials and objects, as well as accessories and sub-assemblies of accessories comprising at least one organic component that comes into contact with the water (see ministerial circulars dated 12 April 1999, 27 April 2000 and 25 November 2002).

Compatibility of seals

	Fiber	CSC	CNK	VPR	EPDM
Compressed air	×	★★	★★	★★	★★
Hot water (70°C)	★★	★★★	★★★	★★★	★★★
Boiling water	★	★★★	★★★	★★★	★★★
Low pressure steam	×	★	★★	★★★	★★
Cooling media	★★	★★★	★★★	★★★	★★★
Sea water	★★	★★★	★★★	★★★	★★★
Water/glycol mixtures	×	×	★★	×	×
Weak acids, detergent	×	★★	★★	★★★	★★★
Strong acids and bases	×	×	★★	×	★★
Alcohol	★	★★	★★	★★	★★★
Cold mineral oils	★★	★	★★	★★	×
Hot mineral oils	★	★	★★	★★	×
Animal/vegetable oils	★★	×	★	×	★
Food products	★★	★★	★★	★★★	★★
Petroleum, fuel	×	★★	★★	★★	×
Petrol	★★	★★	★★	★★	★
Gas	×	×	★★ *Without approval*	★★ *Without approval*	×
U.V.	★★	★★	★★	★★	★★★
Ozone	×	×	×	×	★★★

★★★ **Very good**
★★ **Good**
★ **Average**
× **Unsuitable**

All values provided in this manual must be considered as average values and are subject to modification without prior notice.

Compatibility of seals

	Nitrile	Sirgaz	Néopan	PTFE	PARA
Compressed air	★	★★	★★	★★	★★
Hot water (70°C)	★★★	★★★	★★★	★★★	★
Boiling water	★★	★★★	★★★	★★★	×
Low pressure steam	×	★★	★★	★★★	×
Cooling media	★★	★★★	★★★	★★★	★★
Sea water	★★	★★★	★★★	★★★	★★
Water/glycol mixtures	×	×	×	×	×
Weak acids, detergent	★★	★★	★★★	★★★	★★★
Strong acids and bases	★★	×	★★	★★★	★★
Alcohol	★	★★	★★★	★★★	★★
Cold mineral oils	★★★	★★	×	★★★	×
Hot mineral oils	★★	★★	×	★★★	×
Animal/vegetable oils	★★	★	★	★★★	×
Food products	×	★★	★★	★★★	★★
Petroleum, fuel	★★	★★	×	★★	×
Petrol	×	★★	★	★★★	×
Gas	★★ *Without approval*	★★★ *NF GAZ approved*	×	×	×
U.V.	★★	★★	★★★	★★★	×
Ozone	×	×	★★★	★★★	×

★★★ **Very good**
★★ **Good**
★ **Average**
× **Unsuitable**

All values provided in this manual must be considered as average values and are subject to modification without prior notice.

FIBRE SEAL



Sirius® fibre for domestic cold water

Vulcanisation gives the fibre excellent compression strength and shear strength

LIMITS OF USE *(values independent of each other)*

- *Max. temperature* *70°C*
- *Min. temperature* *- 30 °C*
- *Pressure* *10 bar*

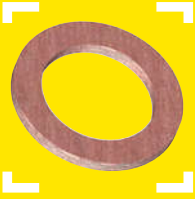
ATTESTATION DE CONFORMITÉ SANITAIRE ACS

MAIN CHARACTERISTICS

- *Excellent compressive strength*
- *Excellent frictional wear resistance*
- *Good ageing resistance*
- *Good corrosion resistance*
- *Chemically inert, non-toxic*
- *Rot-proof*
- *Immune to the effects of oils and fats, petrols, waxes and solvents*

SIRIUS®

CSC® SEAL



CSC®
for air, oil and fuel heating

Synthetic fibres + nitrile elastomer binder

LIMITS OF USE *(values independent of each other)*

• *Max. temperature*	*180°C*
• *Continuous operating temperature*	*120 °C*
• *Min. temperature*	*- 150°C*
• *Pressure*	*40 bar*

MAIN CHARACTERISTICS

- *Good mechanical tightness*

MAIN CHARACTERISTICS

- *Density: 1.70 g/m³*
- *Compressibility ASTM F 36 J: 10%*
- *Recovery ASTM F 36 J: 50%*
- *Gas permeability, DIN 3535: 0.08 mg/s.m.*

SIRIUS®

CNK® SEAL



CNK®

for solar installations, hydrocarbons, oxygen, non-aggressive alkaline environments, glycol compatible

Kevlar® aramid fibre + nitrile elastomer binder

LIMITS OF USE *(values independent of each other)*

- *Max. temperature 350°C*
- *Continuous operating temperature 250°C*
- *Min. temperature -195°C*
- *Steam 200°C*
- *Pressure 100 bar*

MAIN CHARACTERISTICS

- *Good mechanical tightening, good elastic behaviour*

PHYSICAL PROPERTIES

- *Density: 1.80 g/m³*
- *Compressibility ASTM F 36 J: 8%*
- *Recovery ASTM F 36 J: 55%*
- ***Change after immersion in ASTM fuel B:***
  - weight (ASTM F 104): 10% - thickness: 5%
- ***Change after immersion in ASTM oil No.3:***
  - weight (ASTM F 104): 10% - thickness: 5%
- *Gas permeability, DIN 3535: 0.05 mg/s.m.*

SIRIUS®

VPR SEAL



VPR
for heating, oil, steam, non-oxidising acids

Synthetic fibres + lamellar graphite

LIMITS OF USE *(values independent of each other)*

- *Max. temperature 350°C*
- *Continuous operating temperature 280°C*
- *Min. temperature - 196°C*
- *Steam 250°C*
- *Pressure 100 bar*

MAIN CHARACTERISTICS

- *Good mechanical tightening, good elastic behaviour*

PHYSICAL PROPERTIES

- *Density: 1.80 g/m³*
- *Compressibility ASTM F 36 J: 10%*
- *Recovery ASTM F 36 J: 50%*
- ***Change after immersion in ASTM fuel B:*** *thickness: 5%*
- ***Change after immersion in ASTM oil No.3:*** *thickness: 8%*
- *Gas permeability, DIN 3535: 0.08 mg/s.m.*

SIRIUS®

CNA SEAL



CNA
for oils and hydrocarbons

Aramid fibres + nitrile elastomer binder

LIMITS OF USE *(values independent of each other)*

• *Max. temperature*	*250°C*
• *Continuous operating temperature*	*200°C*
• *Min. temperature*	*- 195°C*
• *Pressure*	*20 bar*

MAIN CHARACTERISTICS

- *Good mechanical tightness*

PHYSICAL PROPERTIES

- *Density: 1.50 g/m³*
- *Compressibility ASTM F 36 J: 14%*
- *Recovery ASTM F 36 J: 68%*

SIRIUS®

EPDM RUBBER SEAL



EPDM Sirius®
for domestic hot and cold water

Flexible rubber for general use

LIMITS OF USE *(values independent of each other)*

- *Max. temperature* *120°C*
- *Continuous operating temperature* *90°C*
- *Min. temperature* *- 20°C*

ATTESTATION DE CONFORMITÉ SANITAIRE ACS

MAIN CHARACTERISTICS

- *Excellent ageing resistance*
- *Low adhesion to metals*
- *Good resistance to hot and cold temperatures*
- *Excellent resistance to ozone and oxygen*
- *Good abrasion resistance*

SIRIUS®

PTFE - Teflon® SEAL



PTFE - Teflon® SEAL
for all fluids

PTFE (polytetrafluoroethylene)

LIMITS OF USE *(values independent of each other)*

- *Max. temperature 250°C*
- *Min. temperature - 55°C*
- *Pressure 100 bar*

MAIN CHARACTERISTICS

- *For all fluids*

PHYSICAL PROPERTIES

- *Chemically inert*
- *High mechanical strength*
- *Food-grade*

SIRGAZ® SEAL



SIRGAZ®
for gas networks

NF ROB GAZ

to NF E 29-532
and NF E 29-533 standards

Kevlar® aramid fibre
+ nitrile elastomer binder

For total safety, use a torque wrench and comply with the following tightening torques:

Flat gas seals (JPG)

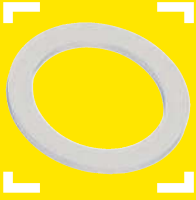
• ***JPG DN12*** *- 18.2 x 12.4 x 2*	***30 N.m***
• ***JPG DN15*** *- 23.8 x 18.4 x 2*	***30 N.m***
• ***JPG DN20*** *- 30,0 x 22.4 x 2*	***40 N.m***
• ***JPG DN25*** *- 38.5 x 30.4 x 2*	***60 N.m***
• ***JPG DN32*** *- 44.5 x 38.5 x 2*	***70 N.m***
• ***JPG DN40*** *- 52.5 x 45.5 x 2*	***100 N.m***

Flat meter seals (JPC)

• ***JPC DN20*** *- 5 nozzles 27.5 x 22.6 x 2*	***30 N.m***
• ***JPC DN32*** *- 20 nozzles 40 x 34.2 x 2*	***50 N.m***

SIRIUS®

CBE SEAL



CBE
recommended for the installation of water meters

Thermoplastic

LIMITS OF USE

- *Max. temperature* *60°C*
- *Min. temperature* *0°C*

MAIN CHARACTERISTICS

- *Specially designed for water meters*

PHYSICAL PROPERTIES

- *Density ISO 1183-1: 0.89 g/m³*
- *Shore A hardness ISO 868: 90*
- *Elongation at break ISO 37: 870%*
- *Tear strength ISO 34-1: 38 N/mm²*
- *Tensile strength ISO 37: 17 N/mm²*

SIRIUS®

NÉOPAN® DISC



Néopan® disc

solid or holed, for domestic hot and cold water, air, ozone and non-oxidising acids

Sandwich construction comprising EPDM rubber and NEJ 85

LIMITS OF USE

- *Max. temperature* *125°C*
- *Min. temperature* *- 40°C*
- *Steam (water, air)* *125°C*

MAIN CHARACTERISTICS

- *The sandwich construction enhances the mechanical properties under compression. Tested over more than 100,000 cycles without any damage of the disc*
- *Good ageing resistance*

MAIN CHARACTERISTICS

- *Density: 1.17 g/m³*
- *Shore A hardness: 85 (+/- 5)*
- *Elongation at break: 250%*
- *Ultimate tensile strength: 14.7MPa*

O-RING SEAL



O-RING
for water, mineral oils and lubricants

Nitrile rubber

LIMITS OF USE

- *Max. temperature 90°C*
- *Min. temperature - 20°C*

MAIN CHARACTERISTICS

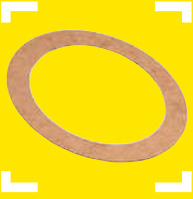
- *Good resistance to oils*
- *Satisfactory wear and abrasion resistance*

PHYSICAL PROPERTIES

- *Density: 1.3 g/m³*
- *Shore A hardness: 70 (+/- 5)*
- *Elongation at break: 380%*
- *Failure load: 15 N/mm²*
- *Tear strength: 57 N/mm²*

SIRIUS®

PAPER SEAL



Paper
special washers for radiators

Cellulose fibre blended with plastic binder

LIMITS OF USE

- *Max. temperature 120°C*

MAIN CHARACTERISTICS

- *Very high mechanical strength*

PHYSICAL PROPERTIES

- *Density: 0.80 g/m³*
- *Compressibility: 24%*
- *Recovery: 44%*
- *Ultimate tensile strength, transverse: 220 kg/cm²*
- *Ultimate tensile strength, longitudinal: 330 kg/cm²*

SIRIUS®

GRIPP® SEAL



MOVING COLLAR

for water and air fittings (on copper, iron, PVC), and for fuel (on copper)

EPDM rubber
+ stainless steel toothed ring

LIMITS OF USE *(values independent of each other)*

- *Max. temperature* *80°C*
- *Min. temperature* *- 40°C*
- *Pressure* *100 bar*

MAIN CHARACTERISTICS

- *CSTB Test No. 11245*

TIGHTENING TORQUES

- *3/8" and 1/2": 3 kg/m*
- *3/4", 1" and 1"1/4: 5 kg/m*

PARA BLOND SEAL



PARA SEAL
seal for toilet flush mechanisms

Extra flexible natural rubber from hevea rubber trees

LIMITS OF USE

- *Max. temperature 70°C*
- *Min. temperature - 50°C*

MAIN CHARACTERISTICS

- *Very high mechanical strength*
- *Very good abrasion resistance*
- *Very good tear resistance*
- *Very good resistance to low temperatures*
- *Very high elasticity*

PHYSICAL PROPERTIES

- *Elongation: 600%*
- *Ultimate tensile strength: 14 MPa*

SIRIUS®

SIRIUS®

- ✔ Fitting seals
- ✔ Tap seals
- ✔ Flush seals
- ✔ Drain plug seals
- ✔ Flange seals
- ✔ Custom seals

WATTS®

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