Modified PTFE gasket materials

- Superior performance over conventional PTFE
- Excellent chemical resistance
- Improved resistance to cold flow / creep
- Suitable for a broad range of applications
PTFE has long been established for its excellence in chemical resistance and for being inherently hygienic, non-toxic and non-tainting. In operational use however it does have some shortcomings; being susceptible to creep under cold conditions and lacking dimensional stability when subject to thermal and pressure cycling.

With multi-directionally expanded PTFE, however, a complex thermo-mechanical stretching process changes the conventional monoaxial structure of expanded PTFE into a highly fibrillated multi-directional fibre structure, which results in excellent dimensional stability and a further reduction of coldflow and creep without the addition of filler materials.

This provides better sealing at higher pressure/temperature combinations than possible with conventional PTFE gaskets. Both at room temperature and at elevated operating temperature, creep is substantially reduced. All the positive qualities of expanded PTFE - like excellent malleability which compensates for damage and irregularities on the sealing area, as well as the unsurpassed chemical and thermal resistance of PTFE - remain unchanged.

Our restructured PTFE sheet materials maintain the same high levels of fibrillation to overcome the creep relaxation and cold flow problems experienced with standard PTFE sheet but introduce the added benefits of a range of filler materials. Fillers include hollow glass beads providing a material ideally suited to low sealing applications requiring a low clamping force, barium sulphate for ‘clean’ process and product applications and silica for high temperature and high pressure applications where strong acids may also be present.

The James Walker Fluolion® family of modified PTFE materials offers a range of benefits including:

- Excellent chemical resistance
- Improved performance over conventional PTFE
- Resistance to cold flow / creep
- Temperature stable from -240°C up to +260°C
- Improved seal & excellent bolt load retention
- Outstanding dimensional stability under thermal stress
- Reduced product loss and emissions
- Resistance to wear and abrasion

The benefits of James Walker® global support

James Walker® is one of the most respected names in sealing technology, providing the high performance products and associated services necessary to keep global industry running safely and efficiently, with the minimum of maintenance and downtime year-in and year-out.

With over 125 years of experience in the development of sealing technology, James Walker is a true global service provider with a network of group companies and distributors supplying over 100 countries. This effort is backed up by 50 distribution, engineering and customer support sites plus manufacturing bases in Europe, The Americas, Australasia, South Africa and Asia.
Fluolion® 700 structured PTFE sheet filled with hollow glass microspheres

Description
Fluolion® 700 is a gasket sheet jointing produced from structured PTFE with a filler comprising hollow glass microspheres.

Key product features
- Excellent adaptability
- High compressibility
- Excellent chemical resistance

Statements of compliance to regulations for food and pharmaceutical use are available on the James Walker website.

Technical data
- Colour: blue
- Temperature range: -210°C up to +260°C
- Chemical resistance: chemically inert against most substances (pH 0-14). The main exceptions are molten alkali metals and elemental fluorine at high temperature and pressure
- Operating pressure: from vacuum up to 5.5MPa/55bar
- Ageing: Fluolion 700 is not subject to ageing or weathering

Typical applications
- Particularly suitable for pressure sensitive connections in pipework made of glass, ceramics, plastic, etc..
- Excellent all-round gasket material especially suited to the chemical and pharmaceutical industries
- The excellent malleability of Fluolion 700 compensates for irregularities, roughness and/or damage to sealing faces
- Quick and simple to install, Fluolion 700 can be removed easily without leaving a residue

How supplied
Sheets and cut gaskets to a maximum size of 1500mm x 1500mm in the following thicknesses; 1.5mm, 2mm, 3mm, 4.8mm, 6.4mm
Sheets and cut gaskets to a maximum size of 1200mm x 1200mm in the following thicknesses; 1mm

Barium sulphate
Silica
Glass microspheres
Fluolion® 800 structured PTFE sheet filled with barium sulphate

Description
Fluolion® 800 is a gasket sheet jointing produced from structured PTFE with a barium sulphate filler.

Key product features
• Particularly suited to use with caustic media
• Excellent chemical resistance
• Excellent chemical resistance

Statements of compliance to regulations for food and pharmaceutical use are available on the James Walker website.

Technical data
• Colour: cream / off-white
• Temperature range: -210°C up to +260°C
• Chemical resistance: chemically inert against most substances (pH 0-14). The main exceptions are molten alkali metals and elemental fluorine at high temperature and pressure
• Operating pressure: from vacuum up to 8.3MPa/83bar
• Ageing: Fluolion 800 is not subject to ageing or weathering

Typical applications
• Well suited for use with ‘clean’ processes and products
• Excellent versatile gasket material, its purity making it especially suited to use in the food and pharmaceutical industries
• Quick and simple to install, Fluolion 800 can be removed easily without leaving a residue

How supplied
Sheets and cut gaskets to a maximum size of 1500mm x 1500mm in the following thicknesses; 1.5mm, 2mm, 3mm.
Sheets and cut gaskets to a maximum size of 1200mm x 1200mm in the following thicknesses; 1mm

Fluolion® 900 structured PTFE sheet filled with silica

Description
Fluolion® 900 is a gasket sheet jointing produced from structured PTFE with a silica filler.

Key product features
• Particularly suited to use with acids
• Excellent chemical resistance
• High resistance to blow-out failure
• Excellent mechanical strength

Statements of compliance to regulations for food and pharmaceutical use are available on the James Walker website.

Technical data
• Colour: fawn / beige
• Temperature range: -210°C up to +260°C
• Chemical resistance: chemically inert against most substances (pH 0-14). The main exceptions are molten alkali metals and elemental fluorine at high temperature and pressure
• Operating pressure: from vacuum up to 8.3MPa/83bar
• Ageing: Fluolion 900 is not subject to ageing or weathering

Typical applications
• Extremely versatile gasket material especially suited to the chemical and petrochemical process industries
• Suitable for service in higher pressures and temperatures
• Quick and simple to install, Fluolion 900 can be removed easily without leaving a residue

How supplied
Sheets and cut gaskets to a maximum size of 1500mm x 1500mm in the following thicknesses; 1.5mm, 2mm, 3mm.
Sheets and cut gaskets to a maximum size of 1200mm x 1200mm in the following thicknesses; 1mm
**Fluolion® 200 multi-directionally expanded PTFE sheet jointing**

**Description**
Fluolion® 200 is a gasket sheet jointing produced from 100% pure, multi-directionally expanded PTFE.

**Key product features**
- Multi-directionally expanded PTFE gasket sheet jointing for a wide range of applications. It is suitable for all types of flanges, nearly all media, a wide temperature range and even for applications with the toughest demands on purity. It is inherently clean and non-toxic.
- The compressed gasket of multi-directionally expanded PTFE has exceptional mechanical strength which enables operation with less creep at higher temperatures than other types of PTFE sheet.
- The excellent malleability of Fluolion 200 makes repairing of small damage marks and/or irregularities of the sealing area (flange surface) unnecessary.
- Gaskets cut from Fluolion 200 are dimensionally stable. This allows narrow flange faces to be sealed safely without causing turbulence in the flow of the media.
- Fluolion 200 gaskets are quick and simple to install. A used gasket can be removed easily without leaving residue.

**Technical data**
- Colour: white
- Temperature range: -240°C up to +260°C
- Chemical resistance: chemically inert against most substances (pH 0-14), including the most aggressive acids and lyes. The main exceptions are molten alkali metals and elemental fluorine at high temperature and pressure
- Operating pressure: from vacuum up to 4MPa/40bar
- Ageing: Fluolion 200 has high resistance to ageing effects

**Typical applications**
Because of the excellent thermal and chemical resistance of Fluolion 200 it can be used in a wide variety of static applications in nearly every industrial sector. The exceptional malleability of expanded PTFE can compensate for out-of-parallel and/or damaged sealing surfaces. This allows use with stress sensitive connections and applications where only a limited flange load is available, e.g., plastic flanges, glass flanges, etc.

Typical applications are the sealing of flanges, pump housings, compressors, hand-holes and manholes, air ducts, compensators, heat exchangers and many more.

**How supplied**
Sheets and cut gaskets to a maximum size of 1500mm x 1500mm in the following thicknesses; 0.5mm, 1mm, 1.5mm, 2mm, 3mm, 4mm, 5mm, 6mm

Statements of compliance to regulations for food and pharmaceutical use are available on the James Walker website.
Information

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 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.

Information in this publication and otherwise supplied to users is based on our general experience and is given in good faith, but because of factors which are outside our knowledge and control and affect the use of products, no warranty is given or is to be implied with respect to such information. Unless governed by type approval or contract, specifications are subject to change without notice. Statements of operating limits quoted in this publication are not an indication that these values can be applied simultaneously.

To ensure you are working with the very latest product specifications, please consult the relevant section of the James Walker website: www.jameswalker.biz.