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SEALING PRODUCTS

Gaskets to the World



ASIAN SEALING PRODUCTS

manufacture specialized seals
and precision metal components for the
oil & gas industry, Valve Industry as well as for
a broad range of industrial applications.

We have invested in a state-of-the-art production
facility to ensure that most advanced technologies are
used in the production of precision metal components,
Ring Gaskets, Spiral Wound Gaskets, Exchanger Gaskets,
Cammprofile Gaskets, Non Asbestos Gaskets,
Flange Insulation Gaskets, IX Seal Rings
and Valve Seat Rings.

Dedication and commitment to utilize the best
technologies to achieve the highest quality standards
has been ASP's culture since its very inception. Stringent
quality control measures are followed right from
sourcing the raw material to the final packing,
shipping and maintenance of material
traceability records.



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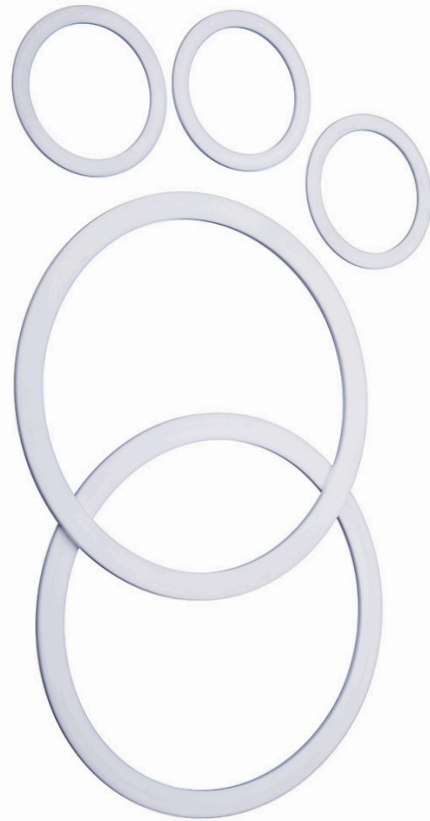
API 6A-1189
API 17D-0077

PTFE Gasket :A Complete Guide

In sealing, PTFE gaskets are a beacon of excellence and dependability. It's made from precise craftsmanship and tough polytetrafluoroethylene, or PTFE. Its presence in various industries demonstrates the synergy between PTFE's inherent strength and our commitment to quality. More than just sealing, this gasket embodies superior performance, enduring resilience, and a promise of reliability

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What is a PTFE Gasket?

PTFE, or polytetrafluoroethylene, comes from a synthetic substance known as tetrafluoroethylene or synthetic fluoropolymer. Often identified by its popular brand name, Teflon®, this material is impressively non-reactive, making it water-resistant, has minimal friction, and stands up well against various chemicals. PTFE gaskets, often enhanced with fillers like carbon or graphite, are adept at minimizing creep under elevated pressures and temperatures.

Properties of PTFE Gasket

01 Chemical Resilience

- Withstanding many chemicals, gaskets remain steadfast even in the most corrosive settings, making them ideal for applications involving frequent contact with aggressive substances.

02 Temperature Endurance

- Engineered for extreme temperatures, it offers consistent sealing, whether rain or shine. PTFE gaskets can withstand temperatures ranging from -100°C to 240°C, ensuring stability and integrity in extreme conditions.

03 Low-Friction Wonder

- Its naturally low friction ensures longevity by minimizing wear, translating to fewer maintenance hassles. PTFE's inherently low friction properties reduce wear and tear, ensuring longevity and efficient operation.

04 Adhesive-Proof Surface

- Say goodbye to stubborn residues; its non-adhesive nature makes cleaning a breeze.

05 Electrical Insulation Excellence

- Our PTFE gasket ticks all the boxes perfectly for applications where electrical insulation is paramount.

Applications

- Chemical Processing Plants
- Petrochemical Industries
- Pharmaceutical Manufacturing
- Food and Beverage Processing
- Power Generation Facilities
- Aerospace and Defense



Benefits of PTFE Gasket

3.1. Wide Temperature Range

- PTFE gaskets can handle both very low and extremely high temperatures without losing their sealing effectiveness.

3.2. Non-Stick Properties

- With their non-stick surface, these gaskets are a breeze to clean and maintain, guaranteeing steady sealing results.

3.3. Excellent Electrical Insulation

- When electrical isolation is key, or conductivity is a concern, PTFE steps in with its excellent electrical insulation properties, ensuring reliability in diverse applications.

3.4. Compressibility and Conformability

- PTFE gaskets are adaptable. Their superior compressibility and conformability allow them to adjust to uneven or damaged flange surfaces, providing a secure and reliable seal.

3.5. Non-Toxic and FDA-Compliant Options

- PTFE gaskets can be manufactured using non-toxic and FDA-compliant materials, making them suitable for food and pharmaceutical applications.

3.6. Low Maintenance

- Built to last and resist the most demanding operating conditions, PTFE gaskets significantly reduce the need for frequent maintenance and replacements.

3.7. Versatile Solutions

- PTFE gaskets come in various forms, from sheet gaskets to envelope gaskets and custom-molded options. They are used in high-vacuum systems and chemical processing plants. PTFE gaskets cater to various industries, ensuring they are versatile and reliable for sealing applications across diverse industries.

Types of PTFE Gaskets

PTFE (Polytetrafluoroethylene) gaskets are available in various types to cater to different sealing requirements across industries. There are different types of PTFE gaskets:

Expanded PTFE Gaskets

Expanded PTFE gaskets are manufactured from a form of PTFE that has been expanded or stretched.

Key Features

- Superior compressibility and conformability.
- Excellent chemical resistance.
- Suitable for uneven or damaged flange surfaces
- Wide temperature range compatibility.
- Ideal for flanged joints in various industries

PTFE Envelope with Compressed Fibre Insert

This type of gasket features a PTFE envelope (outer shell) encapsulating a compressed fiber insert.

Key Features

- Chemical resistance of PTFE
- Enhanced mechanical strength from the fiber insert.
- Non-stick surface.
- Good conformability and sealing performance.
- Widely used in applications requiring a combination of chemical resistance and mechanical strength, such as in the petrochemical and chemical processing industries.

PTFE Gaskets Material Grade Types

Not all PTFE gaskets are created equal. The material grade determines the gasket's performance, resilience, and suitability for specific applications. Two predominant material grades in PTFE gaskets are virgin PTFE and glass-filled PTFE. Let's delve deeper into these material types, understanding their characteristics, advantages, and applications.

Virgin PTFE Gaskets

Virgin PTFE, as the name suggests, refers to PTFE in its purest form, without any fillers or additives

Characteristics

Chemical Resistance: It has exceptional resistance to a wide range of chemicals, making it suitable for aggressive environments.

Low Friction: Boasts a low coefficient of friction, reducing wear and ensuring smooth operation.

Temperature Resilience: Can withstand a broad temperature range, maintaining stability and integrity in extreme conditions.

Non-stick Properties: Known for its non-stick characteristics, preventing adhesion and ensuring easy removal.

Advantages

Suitable for applications requiring high purity and chemical resistance.

Offers consistent sealing performance across a range of temperatures and pressures.

Ensures minimal contamination, making it ideal for critical applications.

Applications

- Chemical processing industries
- Food and beverage sectors (FDA compliant)
- Pharmaceutical applications
- High-temperature environments
- Vacuum applications

Glass-filled PTFE Gaskets

Glass-filled PTFE is a composite material, combining PTFE with glass microspheres or fibers.

Characteristics

Enhanced Mechanical Properties: Adding glass fillers improves the gasket's mechanical strength and dimensional stability

Improved Wear Resistance: Offers increased wear resistance, ensuring longevity in demanding applications.

Reduced Creep Relaxation: Exhibits reduced creep relaxation, maintaining sealing integrity over prolonged periods.

Tighter Seal: The presence of fillers enhances the gasket's ability to conform to irregularities, ensuring a tighter seal.

Advantages

Offers a balance between chemical resistance and improved mechanical properties.

Suitable for applications requiring enhanced wear resistance and dimensional stability.

Ensures superior sealing performance in challenging environments

Applications

- Petrochemical industries
- Hydraulic systems
- Automotive applications
- Aerospace components
- High-pressure sealing applications

While virgin PTFE and glass-filled PTFE gaskets offer exceptional properties and performance, the choice largely depends on the specific application requirements. With its purity and chemical resistance, virgin PTFE remains preferred for applications demanding high purity and broad chemical compatibility. On the other hand, glass-filled PTFE, with its enhanced mechanical properties and wear resistance, caters to applications requiring improved mechanical strength and dimensional stability.

Selecting the Right PTFE Gasket

Factors to Consider

01 Application

- Understanding the specific application is crucial in selecting the appropriate PTFE gasket, ensuring compatibility and performance

02 Temperature and Pressure

- Evaluating the temperature and pressure conditions is vital to choosing a gasket that can withstand the operational demands.

03 Chemical Compatibility

- Assessing the chemical environment ensures the gasket's longevity and reliability.

04 Choosing the Right Material and Type of PTFE Gasket

- Considering the application requirements and environmental factors aids in selecting the most suitable PTFE gasket type and material.

05 Choosing the Right Groove Dimensions

- Ensuring proper groove dimensions is essential for optimal sealing performance and preventing gasket failure.

Installation and Maintenance of PTFE Gaskets

Installing a PTFE gasket correctly ensures a proper seal and prevents potential leaks. Here's a step-by-step guide on the installation process of a PTFE gasket:

Prepare the Flange Surfaces

- Ensure the flange surfaces are clean, smooth, and free from contaminants, rust, or old gasket material. Clean the flanges using a suitable solvent or cleaner to remove any residue.

Inspect the Gasket

- Before installation, inspect the PTFE gasket for any defects, damages, or irregularities. Ensure that it is the correct size and type for the flange

Position the Gasket

- Carefully position the PTFE gasket on the flange surface. Ensure that the gasket is centered and appropriately aligned with the bolt holes.

Use Alignment Tools (if necessary)

- Consider using alignment tools or guide pins to ensure proper alignment of the gasket and flanges for more extensive or complex flanges.

Apply Lubrication (if required)

- If the manufacturer specifies or for specific applications, apply a thin layer of compatible lubricant on the gasket surface. This can help reduce friction during installation and ensure a better seal.

Assemble the Flanges

- Carefully bring the mating flanges together, ensuring the gasket remains in position. Start inserting the bolts and hand-tighten them to hold the flanges together.

Tighten the Bolts

- Gradually tighten the bolts in a crisscross pattern to ensure an even distribution of pressure and avoid damaging the gasket. Refer to the recommended bolt torque specifications provided by the gasket manufacturer or industry standards.

- Avoid over-tightening the bolts, leading to gasket damage or flange deformation.

Final Check

- Once all the bolts are tightened to the specified torque, inspect the gasket and flange assembly for any visible leaks, irregularities, or misalignment.

- Conduct a leak test (if necessary) to ensure the integrity of the seal and proper installation.

PTFE gaskets are reliable sealing solutions that offer unparalleled properties and performance. With a diverse range of applications and types, selecting the right PTFE gasket is crucial for ensuring optimal performance and reliability. By understanding their properties, applications, and selection criteria, industries can harness the full potential of PTFE gaskets, ensuring safety, efficiency, and longevity in their operations.



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