Durlon HT1000: The Ultimate Extreme Temperature Sealing Solution

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The industry's challenge in the face of extreme temperatures and pressures in applications like gas turbines, heat exchangers, and exhaust manifolds is the ability to maintain an effective sealing. The integrity and durability of bolted joints in these high-temperature scenarios are paramount for safe and efficient operation, especially in the refinery, power generation, and chemical sectors.

Understanding Gasket Temperature Limits

A gasket's temperature limit determines its usability in specific industrial applications. Some common temperature classifications include:

- Phyllosilicate: Up to 1,000°C (1,832°F)
- Flexible Graphite: Up to 450°C (850°F)
- Compressed Fiber: Up to 400°C (750°F)

Among these, Phyllosilicate stands out for its versatility in high-temperature situations. This is due to its intrinsic properties such as high tensile strength, notable chemical resistance, minimal weight loss even under extreme conditions, and proven fire safety, making it a non-combustible and sustainable solution.

Durlon HT1000's Composition and Superiority

Phlogopite mica, a prominent member of the phyllosilicate's family, is recognized for its temperature-resistant attributes. Durlon HT1000 taps into this natural potential by incorporating phlogopite mica paper, which, when combined with an inorganic binder, ensures exceptional weight retention — manifesting in less than 4% weight loss at 800°C (1,472°F).

This specification is worth noting because the binder content in Durlon HT1000 is significantly lesser compared to other products that utilize vermiculite-phyllosilicate. This difference is what elevates Durlon HT1000's performance, allowing it to handle extreme temperatures up to 1,000°C (1,832°F) efficiently.

Durlon HT1000 has distinct characteristics, which allow it to either be used as a standalone sealing material or alongside other carrier materials. It has proven its reliability by passing the Fire Test API 607, 4th edition, with Exxon changes. Whether it's a heat exchanger or an exhaust manifold, this product ensures optimal sealing in equipment typically found in sectors such as power generation, chemical industries, and refineries.

Phlogopite Mica: A Non-Toxic Asbestos Alternative

As the industry shifts towards eco-friendly and safety measures, Durlon HT1000's use of phlogopite mica stands out. This naturally occurring mineral, a hydrated silicate of potassium and magnesium, is not only non-toxic but also boasts of various impressive characteristics. Its lamellar and non-fibrous structure, combined with high tensile strength, makes it resilient against significant mechanical pressures. Furthermore, its chemical resistance, infusibility, and non-flammable properties make it a viable alternative to asbestos.

Styles of Durlon HT1000

Durlon HT1000 is an adaptable solution that comes in various styles, each with its unique application advantages:

- Style S90: Pure phlogopite mica paper with an inorganic binder (Figure 1).
- Style L316: Combines phlogopite mica paper and an inorganic binder, laminated with a 0.002" thick 316 stainless steel carrier (Figure 2).
- Style T316: Incorporates phlogopite mica paper and an inorganic binder but is laminated with a 0.004" thick 316 stainless steel perforated carrier (Figure 3).

In conclusion, Durlon HT1000 is a fire safe and effective high temperature engineering solution, meeting the needs of modern industries in harsh conditions.

Figure 1. Durlon HT1000 Style S90.

Figure 2. Durlon HT1000 Style L316.

Figure 3. Durlon HT1000 Style T316.