

Application for exemption from EU REACH PFAS control for fluoropolymer fibers

Topic: Application of Permanent Exemption for Fluoropolymer(PTFE、PFA、FEP、PVDF、ECTFE,etc) Fibers

Reasons: Fluoropolymer fibers (PTFE, PFA, FEP, PVDF, ECTFE) are widely used in important fields because of their excellent properties, and they cannot be replaced by other fibers.

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Types of Fluoropolymer Fibers (PTFE, PFA, FEP, PVDF, ECTFE, etc.): staple fiber, monofilament fiber, multifilament fiber and sewing thread etc.

Application of Fluoropolymer Fibers (PTFE, PFA, FEP, PVDF, ECTFE, etc.):

1. The felt and fabric made of fluoropolymer fibers have excellent corrosion resistance, oxidation resistance, hydrolysis resistance, wide use temperature (between -100°C and 250°C). As a result, they are widely used as liquid or gas solid filtration separation. Such as the flue gas filtration at thermal power plants, waste incineration plants, cement plants, non-ferrous metal metallurgy plants etc., or be used as filtration and purification of strong acid/alkali liquid or chemical solvent in chemical industry, pharmaceutical industry, and semiconductor industry etc. At present, there is no other fiber material that can reach or exceed the fluoropolymer fibers in the comprehensive performance. In some extremely harsh working conditions, fluoropolymer fibers are the only choice. It proves the importance of fluoropolymer fibers in reducing emissions;

2. The sealing packing and gasket processed with fluoropolymer fibers have strong corrosion resistance, long-term use temperature range between -100°C and 250°C, sealing property etc. Widely used as dynamic or static sealing material with corrosion and heat resistance for various pipelines, fittings, valves, and joints. It is applied in industrial pipelines, fuel cell separators, pharmaceuticals, and food industries. Its comprehensive performance cannot be replaced by other materials. At the same time, the safety risks of the production and use of high-risk chemicals are greatly reduced;

3. The joint bearing self-lubricating gasket made of fluoropolymer fibers has low friction

coefficient, high temperature resistance and a certain cushioning effect, which enable joint bearings to greatly extend their service life without oil lubrication, achieving a full life cycle without the need for lubricating grease and maintenance. Currently, this material cannot be replaced;

4. Medical implants, sutures processed with fluoropolymer fibers are widely used for their soft and elastic features, high strength, low friction coefficient and good biocompatibility. Its extensive and long-term application in the medical field has proven the safety of fluoropolymer fiber for the human body;

5. Reinforced material for chlor alkali ion exchange membranes made of fluoropolymer fibers. In the electrolysis process of alkaline chloride, ion exchange membranes are exposed to chlorine, 32% NaOH, hypochloric acid, and hydrochloric acid at temperatures close to 90°C. Except for fluoropolymer fibers, it is known that no other material can resist these substances, it is of great significance to reduce the energy consumption of chlor-alkali chemical industry.

Based on the applications of fluoropolymer fibers, they can be seen that fluoropolymer fibers from its production process and use and its downstream application will not cause harm to the environment and human body. It also plays an important role in reducing energy consumption and emissions. There are no related substitutes, and in some special fields, fluoropolymer fibers are the only choice. It should be exempted and allowed to be produced and used.

References:

1. Barbara J Henry and etc. A Critical Review of the Application of Polymer of Low Concern and Regulatory Criteria to Fluoropolymers, Integrated Environment Assessment and Management-Volume 14, Number 3-pp. 316-334
2. FDA test report of the company's products: PTFE 1200D white sewing thread, PTFE white staple fiber, PTFE green sewing thread, PTFE 12000D yarn, PTFE white sewing thread, PTFE white staple fiber, PTFE fabric.