Application for exemption from EU REACH PFAS control for PTFE containing anti-dripping agents

Theme：Apply for permanent exemption for PTFE containing anti dripping agents

Evidence：1. PTFE itself poses little threat to the environment and human health

2. PFAS substances in the raw materials used in the production process of PTFE containing anti-dripping agent have been controlled；

3. Adding PTFE anti-dripping agent to engineering plastics to prevent melting droplets during material combustion, help the material reach the UL94 V0 flame retardant level of 1.6mm or thinner. Currently, there is no substitute available；

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According to the definition of ECHA, PTFE is considered a type of PFAS, but it exhibits different physical, chemical, and toxicological properties from other PFAS substances. Although some PFAS compounds pose hazards to the environment and humans or animals, PTFE is chemically and biologically inert and remains stable in air, water, light, chemical, and microbial environments. As a type of high molecular weight polymer with a molecular weight far exceeding 100000 Da, it cannot penetrate the cell membranes of humans or animals, and has no bioaccumulation or toxicity. The persistent presence of PTFE in nature does not necessarily imply a risk, toxicity, accumulation, or migration to the environment. Due to its excellent durability, although it exists in the environment, its release into the environment will not degrade into small molecule PFAS substances with potential risks to the environment or human body. Clinical studies on patients receiving permanent implantation of polytetrafluoroethylene cardiovascular medical devices have shown that they do not have chronic toxicity or carcinogenicity, as well as reproductive, developmental, or endocrine toxicity. PTFE should be considered significantly different from other categories of PFAS, and in reality, all PFAS are classified as a single substance without scientific data support.

In terms of the preparation process of the anti-dripping agent containing PTFE, the type and quantity of additives used in the production of its main raw material PTFE emulsion can be controlled manually, and previous countries have issued prohibition and replacement instructions for the additives that may belong to PFAS in the production process, such as Canada's Regulations on the Prohibition of Certain Hazardous Substances (SOR/2012-285, and its amendment SOR/2016-252) In 2019, the Ministry of Ecology and Environment of China issued the Announcement on the Prohibition of the Production, Circulation, Use, Import and Export of Persistent Organic Pollutants such as Lindane, as well as the 2019 EU POPs Regulation (EU) 2019/1021 and its revised regulations (EU) 2020/784. At present, there is no substance that may belong to PFAS in the preparation of PTFE emulsion. In addition to PTFE emulsion, the preparation process of PTFE containing anti-dripping agent does not involve the use of PFAS substances.

From the application of products containing PTFE anti-dripping agents, their use in conjunction with flame retardants is added to engineering plastics such as PC, ABS, PA, PBT, etc. By processing and dispersing them into PTFE reticular fibers, they prevent further fire spread caused by molten droplets during plastic combustion, making engineering plastics reach the UL94 V0 flame retardant grade of 1.6mm or thinner products. These engineering plastics are widely used in electronics, cables, new energy vehicles Industries with fire protection requirements such

as network communication equipment. In these industries, products do not use PTFE anti-dripping agents, resulting in a decrease in flame retardancy and the spread of fire caused by combustion droplets, posing a huge threat to people's lives and property. According to the annual report released by the World Fire Statistics Center, fires caused by electronic appliances account for about 10-30% of the total number of fires in the world, and even become the largest cause of fires in some countries and cities. In 2020, the global production and sales of PTFE anti-drip agent were approximately 8600 tons. It is expected that the global production and sales will reach 12500 tons by 2025. Based on its typical addition of 0.5% in engineering plastics, if the use of PTFE anti drip agents is prohibited, it will directly lead to a decrease in the flame retardancy of engineering plastics to 2-3 million tons, causing significant losses to human life and property. At present, there is no development, use, or sales of its substitutes in terms of technology and economy.

Based on the above, it can be seen PTFE containing anti-dripping agent do not pose any harm to the environment or human health. in terms of their production process, use, and downstream applications, and there are no related substitutes. Therefore, they should be exempted and allowed to be produced and used

Reference documents：1. CTIF_Report27_ESG

2. Sergei V Levchik and Edward D Weil. Polymer International. 2005; 54:981–998