

Aug 25, 2023

Comment on Proposed Restriction of PFAS

Japan Valve Manufacturers' Association (JVMA)

Japan Valve Manufacturers Association (JVMA) appreciates the opportunity to provide comments to the PFAS restriction proposal.

1. Introduction

JVMA was established in 1954 and has been a representative association of Japanese valve industry for nearly seventy years. As of today, we are comprised of 115 major domestic valve manufacturers including several Japanese subsidiaries of European valve makers and additional 68 associate companies. Since our establishment, we have implemented various effective programs to contribute to society, occasionally cooperating with some of Central Government Ministries and Agencies. Especially we are pouring the biggest effort to resolve environmental problems, so the Environmental Committee and four working groups in our organization are working on the following issues:

- Greenhouse gas reduction.
- Design for the environment of valves.
- Life cycle assessment of valves.
- Gathering information on restricted substances.
- Environmental education.

To response to the PFAS restriction proposal, we have prepared a technical and socioeconomic statement which is attached document.

2. Comment

Technological functions provided by fluoropolymers include low degradation, chemical resistance, cleanliness, elastoplastic, and salability. Low decomposition, chemical resistance, cleanliness, elastoplastic, and sealing performance are required for valves in the following semiconductor manufacturing category and electronics category. This list was created based on a survey conducted by the Japan Valve Manufacturers Association. The list has been vetted by engineers in the Valve Standards Technology Working Group of the International Semiconductor Association, SEMI. The list contains uses for which there are no alternatives. The content pursued "Mutually Exclusive, Collectively Exhaustive".

- The material of the valve body and valve body used for the supply of high-purity chemicals in the cleaning process of the semiconductor manufacturing category and the waste liquid is PTFE/PFA, which has low decomposition, chemical resistance, cleanliness, elastoplastic, and sealing properties. is required.

- The diaphragms and bellows of the valves used for the supply of high-purity chemicals in the cleaning process of the semiconductor manufacturing category and waste liquids are made of PTFE and PFA, and low decomposition, chemical resistance, cleanliness, elastic plasticity, and salability are required. be done.

- Valve actuator materials used for supplying and effluent high-purity chemicals in the cleaning process of the semiconductor manufacturing category are PTFE, PFA, PVDF, FKM, and FFKM. Seal ability is required.

- The material of the valve body and valve body used in the ultrapure water facility line of the semiconductor factory in the semiconductor manufacturing category is PTFE, PFA, PVDF, and has low decomposition, chemical resistance, cleanliness, elastoplastic, and sealing. sexuality is required.

- The materials of diaphragms and bellows used in the ultrapure water facility lines of semiconductor factories in the semiconductor manufacturing category are PTFE and PFA, and low decomposition, chemical resistance, cleanliness, elastoplastic, and seal ability are required.

- The material of the valve body and valve body used to supply high-purity fluid in the resist coating process in the semiconductor manufacturing category is PTFE/PFA, which has low decomposition, chemical resistance, cleanliness, elastoplastic, and sealing properties. Desired.

- The material of the diaphragm of the valve used to supply high-purity fluid in the resist coating process in the semiconductor manufacturing category is PTFE/PFA, and low decomposition, chemical resistance, cleanliness, elastic plasticity, and sealing performance are required.

- The material of the valve body and valve body used for the slurry liquid supply and waste liquid supply of the CMP process in the semiconductor manufacturing category is PTFE / PFA, and has low decomposition, chemical resistance, cleanliness, elastoplastic, and sealing

properties. Desired.

- The material of the diaphragm of valves used for slurry liquid supply and waste liquid supply in the CMP process of the semiconductor manufacturing category is PTFE / PFA, and low decomposition, chemical resistance, cleanliness, elastoplastic, and sealing properties are required.

- The material of the valve body and valve body used for the supply and exhaust of high-purity gas in the dry process of the semiconductor manufacturing category is PTFE/PFA, which has low decomposition, chemical resistance, cleanliness, elastoplastic, and sealing properties. is required.

- PCTFE is used for the valve seats and discs used for high-purity gas supply and exhaust in dry processes in the semiconductor category.

- The material of the valve body and valve body used in the cold evaporator of the semiconductor factory in the semiconductor manufacturing category is PTFE / PFA, and low decomposition, chemical resistance, cleanliness, elastic plasticity, and sealing performance are required.

- PCTFE is used for valve seats and discs used in cold evaporators in semiconductor factories in the semiconductor manufacturing category.

- The material of the diaphragm of the valve used in the filling line of the ionic liquid supply line in the secondary battery manufacturing category is PTFE / PFA, and low decomposition, chemical resistance, cleanliness, elastic plasticity, and sealing performance are required.

- The material of the valve body and valve body used for the supply and waste liquid of the chemical supply line in the electronic component manufacturing category is PTFE / PFA, and low decomposition, chemical resistance, cleanliness, elastic plasticity, and sealing performance are required. be done.

- The materials for valve diaphragms and bellows used for supply and waste liquids in chemical supply lines in the electronic component manufacturing category are PTFE and PFA, which require low decomposition, chemical resistance, cleanliness, elastoplastic, and sealing properties.

- The material of the diaphragm of the valve used in the filling line of the luminescence liquid in the organic EL manufacturing category is PTFE/PFA, and low decomposition, chemical resistance, cleanliness, elastoplastic, and sealing performance are required.

- The material of the valve body and valve body used for the supply of high-purity chemicals in the cleaning process of the liquid crystal panel manufacturing category and the waste liquid is PTFE and PFA, and has low decomposition, chemical resistance, cleanliness, elastoplastic, and sealing. sexuality is required.

- The material of valve diaphragms and bellows used for supplying high-purity chemicals in the cleaning process of the liquid crystal panel manufacturing category and for waste liquids is PTFE and PFA. Desired.

- Valve actuator materials used for the supply and waste of high-purity chemicals in the cleaning process of the liquid crystal panel manufacturing category are PTFE, PFA, PVDF, ETFE, FKM, and FFKM. Elastoplastic and seal ability are required.

- The material of the valve body and valve body used to supply high-purity fluid in the resist coating process in the liquid crystal panel manufacturing category is PTFE/PFA, which has low decomposition, chemical resistance, cleanliness, elastoplastic, and sealing properties. is required.

- The valve diaphragms and bellows used to supply high-purity fluids in the resist coating process in the liquid crystal panel manufacturing category are made of PTFE and PFA, and require low decomposition, chemical resistance, cleanliness, elastoplastic, and sealing performance. be done.

- The material of the valve body and valve body used for the cleaning of the solar panel manufacturing category, the supply of strong acid and strong alkaline chemicals in the etching process, and the waste liquid is PTFE / PFA, and has low decomposition, chemical resistance, and cleanliness.

- Elastoplastic and sealing properties are required.

- The diaphragms and bellows of the valves used for the cleaning of the solar panel

manufacturing category, the supply of strong acid and strong alkaline chemicals in the etching process, and the waste liquid are made of PTFE and PFA. Plasticity and sealing properties are required.

There is no polymer that can replace low degradation, chemical resistance, cleanliness, elastoplastic, and seal ability as technical functions provided by fluoropolymers. We may be able to develop alternatives, but we cannot prepare everything in a short period of time. For that reason, we require valves to comply with the conditions of restriction “until 13.5 years after EiF”. It is desirable that the conditions of restriction corresponding to the multiple Uses described in this comment be clarified in the opinion of SEAC.