

GEMÜ PD valves

EN

Operating instructions

General Information Document



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1 Background

As part of 3M's withdrawal from fluoropolymer production, replacement raw materials have been qualified for the manufacture of the PTFE element of the plug diaphragm for valves with PD technology. No new code is being introduced. The valves with PD technology are still available under the known seal codes.

2 Details of the change

1. The PTFE diaphragm (PD) that comes into contact with the process media is replaced with an equivalent alternative PTFE from renowned manufacturers.
2. The body and actuator will remain unchanged.

3 Regulatory requirements

As part of an equivalency test, the valves with PD technology have been tested with regard to their performance capability and properties. As the minimum requirement for equivalency has been met within the endurance tests and those of the approval process with the alternative materials have been successfully passed through again, all of the existing approvals and conformities will remain unchanged. As a result, the PD valves continue to meet all of the relevant regulatory requirements and can be used in the previous areas of application without any restrictions.

4 Advantages

In the changeover of the material and in addition to all previous approvals/conformities, food conformity in accordance with the Japanese Food Contact Material Act and for China (GB4806.6/GB4806.7/GB4806.11/GB9685) has been applied and accredited. This means that they are now also available for the new alternative materials.

5 Endurance tests

The operating time of valves with PD technology with alternative materials has been tested using endurance tests and compared with valves consisting of the previous PTFE individual components. The valves with the alternative material are installed by trained personnel. Leak testing in accordance with DIN EN 12266 is carried out before, after and during endurance tests. These tests are used to determine whether, and to what extent, the leak-tightness characteristics of the valves are reduced by the stresses of the endurance tests. The endurance tests result in artificial ageing due to the effects of mechanical and thermal stress as well as direct contact with corrosive media. Once the test valve has completed the specified test programme, it is removed and a final leak test is carried out. Following this, the test valve is disassembled and is analyzed for faults and abnormalities by valve experts.

The sterility endurance test is run in cycles. During a sterility cycle, the test valve is exposed to steam, vacuum and cold water. From our analysis of the results of our testing, GEMÜ can state the valves with PD technology made from PTFE alternative materials has equal or better performance than the previous PTFE materials that it is replacing.

The following tests were performed:

1. Sterility endurance test (as described above)
2. Endurance test under climactic influences
3. Leak-tightness testing (before, after and during endurance tests)
4. Endurance test for quick clocking



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Subject to alteration

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