

FC-180: Thin Film Fluorine Coating

[Patent pending]

1. Requirement from a client

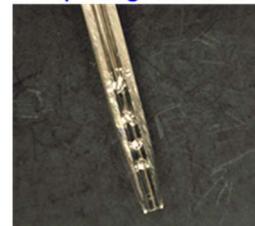
After repeated use and washing, a dispenser nozzle tends to accumulate contaminants inside it, resulting in abnormality in the analysis results. For solving this problem, a thin film coating having antifouling property has been required, which withstand the repeated washing with an antiseptic sodium hypochlorite solution.

2. Solution for the requirement

Fluorine coating has been used in cooking pans, toothpastes, or waterproof sprays for clothes. Coating fluorine to a metal surface can prevent the metal from contaminated, but for industrial use, the stronger coating has been required.

For solving this issue, we have developed **FC-180**, a new water/oil repellent fluorine coating with the thickness of 1 μm or less having an excellent chemical resistance.

Inner surface
repelling alcohol



3. Evaluation test

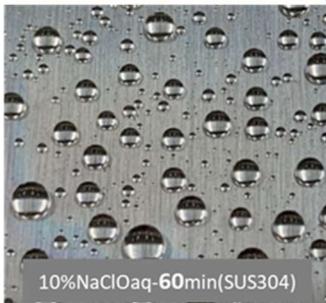
We have conducted the accelerated test with a concentrated solution of sodium hypochlorite to evaluate the durability to withstand repeated washing.

1. A specimen was immersed in 10% NaClOaq solution with ultra-sonic wave for accelerating the test effect to be observed for the surface conditions at every 30 minutes.
2. The thicknesses of the fluorine coats were calculated from the value obtained by the elemental analysis of an electronic microscope.

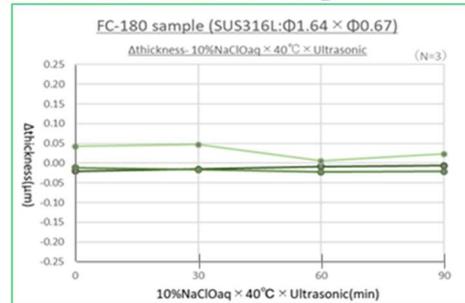
【Evaluation results】

Neither degradation nor thickness reducing was observed after dipping tests for 60 to 90 minutes with 10% solution of NaClO.

【Water repellency after chemical resistance test】



【Film thickness changes during chemical resistance test】



【electron microscope (SEM)】



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