

O<sub>10</sub>**FLUORINATED SURFACTANTS, APPLICATION IN FIRE FIGHTING FOAMS**

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One of the main applications of fluorinated surfactants is their use as fire-fighting agents. Owing to their very low surface tension and to the oleophobicity of their perfluoroalkyl chain, fluorinated surfactants are used for the preparation of film forming foams (AFFF) and of fluoroprotein foams.

The main manufacturing process of fluorinated surfactants and of fluorochemical intermediates (electrochemical fluorination, telomerization, oligomerization of C<sub>2</sub>F<sub>4</sub> or C<sub>3</sub>F<sub>6</sub>) have been described.

The fluorosurfactant characteristics and properties required for fire fighting agents have been discussed. Their selection may be performed on the basis of some laboratory tests:

- Film forming velocity
- Foaming power and foam stability
- Sealing power of the film
- Tolerance to hydrocarbons
- Dynamic surface tension.

The maximum bubble pressure method is the best one in determining the dynamic surface tension. This characteristic differentiates surfactants for AFFF and for protein foams.