

OECD/UNEP Global PFC Group

Synthesis paper on per- and polyfluorinated chemicals (PFCs)

This publication is available electronically, at no charge.

For this and many other Environment,
Health and Safety publications, consult the OECD's
World Wide Web site (www.oecd.org/chemicalsafety/)

or contact:

OECD Environment Directorate,
Environment, Health and Safety Division
2 rue André-Pascal
75775 Paris Cedex 16
France

Fax: (33-1) 44 30 61 80

E-mail: ehscont@oecd.org



INTER-ORGANIZATION PROGRAMME FOR THE SOUND MANAGEMENT OF CHEMICALS

A cooperative agreement among **FAO, ILO, UNDP, UNEP, UNIDO, UNITAR, WHO, World Bank and OECD**

Environment Directorate
ORGANISATION FOR ECONOMIC COOPERATION AND DEVELOPMENT
Paris 2013

Table 1: Overview of major historical and current uses of non-polymeric per- and polyfluoroalkyl substances (PFASs). It should also be noted that some uses may be obsolete and replaced by (non)fluorinated alternatives, which are discussed in Chapter 3. AFFF = aqueous film-forming foams, FFFPs = film-forming fluoroprotein.

Industry branch		Non-polymers	
1. Aviation, aerospace & defense	additives in aviation hydraulic fluids ³		
2. Biocides		active ingredient in plant growth regulators or ant baits; ³ enhancers in pesticide formulations ⁵	
3. Construction products		additives in paints and coatings	additives in paints and coatings
4. Electronics	flame retardants ⁶		
6. Fire-fighting		film formers in AFFF ⁷	film formers in AFFF and FFFP ⁷
7. Household products	wetting agent in floor polishes	wetting agent or surfactant in products such as floor polishes and cleaning agents	wetting agent or surfactant in products such as floor polishes and cleaning agents
8. Metal plating	wetting agent, mist suppressing agent ³	wetting agent, mist suppressing agent ³	wetting agent, mist suppressing agent ³
9. Oil and mining production	surfactants in oil well stimulation ³	surfactants in oil well stimulation ³	surfactants in oil well stimulation ³
11. Polymerization	(emulsion) polymerization processing aids ⁸	(co)monomer of side-chain fluorinated polymers ⁴	(co)monomer of fluoropolymers & side-chain fluorinated polymers ^{8,9}

Table 2: Overview of major historical and current uses of polymeric per- and polyfluoroalkyl substances (PFASs). It should also be noted that some uses may be obsolete and replaced by (non)fluorinated alternatives, which are discussed in Chapter 3. AR-AFFF = alcohol-resistant aqueous fire-fighting foams, FFFPs = film-forming fluoroprotein; FP = fluoroprotein foam.

Industry branch		Polymers	
1. Automotive	raw materials for components such as low-friction bearings & seals ⁹		lubricants ⁸
2. Aviation, aerospace & defense	insulators; ¹⁰ "solder sleeves"; ¹⁰		
3. Cable & wiring	coating for weathering, flame and soil resistance ⁹		surface-treatment agent for conserving landmarks ⁸
4. Construction	coating of architectural materials (fabrics, metals, stone, tiles, etc.); ⁸ additives in paints		
5. Electronics	Insulators; ⁹ "solder sleeves"; ¹⁰		vapor-phase soldering media ⁷
6. Energy	film to cover solar collectors due to weatherability ⁸		
7. Fire-fighting	raw materials for fire-fighting equipment, including protective clothing	fuel repellents for FP & foam stabilizers in AR-AFFF and FFFP; ⁷ coating for fire-fighting equipment	
8. Food processing	fabrication materials ⁹		
9. Household products	nonstick coating ⁹		
10. Medical articles	surgical patches cardiovascular grafts; ⁹ raw materials for implants in the human body ¹⁰	stain- and water-repellents for surgical drapes and gowns	
11. Paper and packaging		oil and grease repellent ⁴	oil and grease repellent
12. Semiconductors	raw materials for equipment ^{8,10}		working fluids in mechanical vacuum pumps ⁸
13. Textiles, leather and Apparel	raw materials for highly porous fabrics ¹⁰	oil and water repellent and stain release ⁴	oil and water repellents