PFCS IN SURFACE AND DRINKING WATER

NEELAM SINHA & PIYUSH SINHA*

Dept. of Physics, S.D.College, Muzaffarnagar *School of Science, H.N.B. Garhwal University Campus, Pauri Garhwal-246001

Received: 2.12.2014

Revised: 11.12.2014

Accepted: 19.12.2014

ABSTRACT

The growing environmental concern of Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) derivatives and related substances is due to the fact that these potential harmful compounds now are global environmental pollutants distributed in air, water, soils and biota, including in polar bears living in remote arctic areas. In addition, in many countries PFOS, PFOA and other related substances have been observed in human blood samples of the general population. The reasons for this widespread occurrence seem to be that perfluorinated substances are increasingly used and are environmentally persistent and bioaccumulative. Due to this PFOS, PFOA are potentially toxic to humans and animals. A range of polyfluorinated substances are used in numerous industrial products and consumer products because of their special chemical properties, for instance the ability to repel both water and oils.

A study of contamination of PFCs in surface water and drinking water in several countries from the available literature has been done in this review paper.

KEYWORDS- PFOS, PFOA, biota, toxic effects

REFERENCES

- ECD. Lists of PFOS, PFAS, PFOA, PFCA, related compounds and chemicals that may degrade to PFCA. Environment Directorate, Joint meeting of the chemicals committee and the working party on chemicals, pesticides and biotechnology, ENV/JM/MONO(2007)15, 21-Aug- 2007
- Loos R, Woolgast J, Huber T, Hanke G. Polar herbicides, pharmaceutical products, perfluorooctanesulfonte (PFOS), perfluorooctanoate (PFOA) and nonylphenol and its carboxylates end ethoxylates in surface and tap waters around Lake Maggiore in Northern Italy. Anal Bio anal Chem. 2007; 387: 1469-1478.
- Skutlarek D, Exner M, Färber H. Perfluorinated surfactants in surface and drinking waters. Environ Sci Pollut Res 2006; 13: 299-307.
- Nakayama S, Strynar MJ, Helfant L, Egeghy P, Ye X, Lindstrom AB. Perfluorinated compounds in the Cape Fear drainage basin in North Carolina. Environ Sci Technol. 2007; 41: 5271-5276.

- So MK, Miyake Y, Yeung WY, Ho YM, Taniyasu S, Rostkowski P, Yamashita N, Zhou BS, Shi XJ, Wang JX, Giesy JP, Yu H, Lam PKS. Perfluorinated compounds in the Pearl River and Yangtze River of China. Chemosphere 2007; 68: 2085-2095.
- McLachlan MS, Holmstrom KE, Reth M, Berger U. Riverine discharge of perfluorinated carboxylates from the European Continent. Environ Sci Technol. 2007; 41:7260-7265.
- Renner R., New Jersey dives into PFOA water guidance. Environ Sci Technol. 2007a; 41: 3395-3396.