

Perfluorohexanesulfonic Acid (PFHxS)

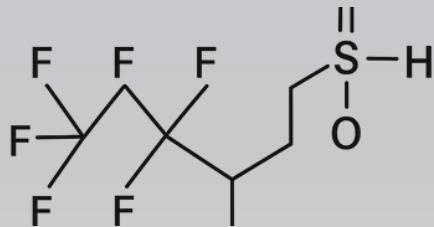
CAS NUMBER 355-46-4

$C_6F_{13}SO_3H$



WHAT IS PFHxS?

Perfluorohexanesulfonic acid (PFHxS) is a synthetic chemical compound belonging to the per- and polyfluoroalkyl substances (PFAS) family. It is an anionic fluor surfactant and a persistent organic pollutant with bio accumulative properties. PFHxS is the conjugate base of perfluorohexanesulfonic acid, featuring a six-carbon fluorocarbon chain that is both hydrophobic and lipophobic. The compound's sulfonic acid functional group imparts polarity and allows it to interact with other polar compounds



HUMAN HEALTH IMPACTS

- Thyroid toxicity - Decreased thyroid hormone levels, particularly
- Decreased antibody responses to vaccination against tetanus and diphtheria in children
- Elevated liver enzymes, potential for non-alcoholic fatty liver disease
- Decreased birth weight and changes in locomotor activity in animal studies
- Alterations in hormone levels and reproductive function

PRIMARY USES

- Firefighting foams
- Textile and leather treatments
- Metal plating
- Flame Retardants
- Electronics manufacturing
- Food contact materials
- Industrial fluids
- Agricultural equipment coatings and protective gear

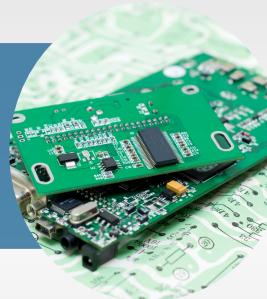


ENVIRONMENTAL TOXICITY

- Not acutely toxic to aquatic organisms at currently detected concentrations, but persistence raises long-term concerns
- Soil contamination: Negative effects on soil microbial processes and earthworm survival
- Biomagnification factors ranging from 1.4 - 48 in food webs
- Detected in atmospheric samples, indicating global distribution potential indicating long range transportation

Chemical Alternatives

Synthetic Polymeric Esters
Sulfur and Phosphorus Compounds
Vegetable Oil-Based Lubricants



LISTING IN THE STOCKHOLM CONVENTION - 2023 UPDATE

PFHxS, its salts, and related compounds were listed in Annex A of the Stockholm Convention on Persistent Organic Pollutants at the 10th Conference of the Parties (COP-10) in June 2022. The scope covers PFHxS (CAS 355-46-4), its salts, and any substance containing the chemical moiety $C_6F_{13}SO_3^-$



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