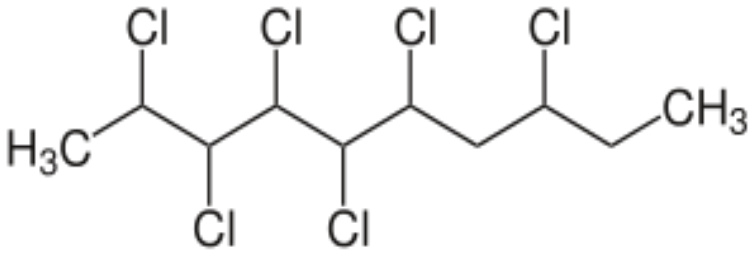

or $C_xH_{(2x-y+2)}Cl_y$ (where x = 10-13; y=3-12)

CAS 85535-84-8 - Short-Chain Chlorinated Paraffins (SCCPs)

Toxicity

The State of California classified chlorinated paraffins as carcinogens under Proposition 65.[1] The National Toxicology Program (NTP) classified chlorinated paraffins as reasonably anticipated carcinogens based on liver, kidney, and thyroid tumors found in rodent studies.[2] The European Union (EU) listed SCCPs as a Substance of Very High Concern (SVHC) based on evidence of SCCPs persistent bioaccumulative and toxic (PBT) and very persistent very bioaccumulative nature.[3]

The International Agency on Cancer (IARC) classified SCCPs as possible human carcinogens based on evidence of increased incidence of tumors in mice and rats orally exposed to a 12 carbon-chain length SCCP. Increased incidence of alveolar-bronchiolar carcinomas in male rats, malignant lymphomas in male mice, and adrenal gland tumors of female rats was observed.[4]

Exposure

SCCPs are on Washington State's PBT list.[5] SCCPs were used as metal working lubricants, plasticizers in flame retardant plastics, or as a flame-retardant additive to fabrics, electrical equipment, machining-fluids, adhesives, sealants, paints and rubber formulations.[4] In 2013, the Swedish Chemicals Agency (KEMI) detected SCCPs in the following children's products: soft heads, arms and legs on dolls, in leather trim clothing, inflatable plastic toys, nozzle to inflatable toys.[6] SCCPs were the most common substance found above limit values in a 2015 survey of European household products.[7] In 2017, the Stockholm Convention listed SCCPs as persistent organic pollutants (POPs) under Annex A permitted for used in transmission belts, rubber conveyor belts, leather, lubricant additives, tubes for outdoor decoration bulbs, paints, adhesives, metal processing, and plasticizers.[8] SCCPs have been found globally in humans, wildlife, and the environment.[9,10,11] SCCPs have been detected in human tissues and breast milk.[9] SCCPs have been detected *post mortem* in human liver, kidneys, and adipose tissue.[10] SCCPs have been detected in various food samples gathered in Asian countries.[9] SCCPs have been detected in aquatic mammals, fish, shellfish, and seabird eggs.[11]

Other

Chlorinated paraffins are characterized by average carbon-chain length and average degree of chlorination. C_{10-13} makes up short-chain, C_{14-19} makes up medium-chain and C_{20-30} makes up long chain paraffins.[4] In 2012, EPA restricted the manufacture and import of SCCPs in the U.S. In 2014, EPA issued a Significant New Use Rule (SNUR) which requires manufacturers (including importers) and processors of SCCP to notify EPA at least 90 days before starting or resuming new uses.[12] In 2015, the EU set a limit >0.15% weight SCCPs in products.[13] SCCPS are still produced in China.[14-16]

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