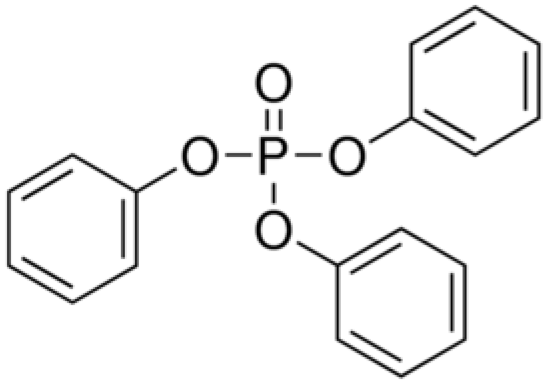

CAS 115-86-6 - Triphenyl phosphate (TPP)

Toxicity

Endocrine disruption, developmental, neurological, and reproductive toxicity is observed in animals exposed to TPP.[1-7]

EPA classified TPP to have a moderate potential for carcinogenicity and bioaccumulation based on modeling.[8]

Mice fed TPP for 35 days showed oxidative liver stress, testicular tissue damage, and decreased testicular testosterone levels, testes weight, and testosterone synthesis related gene expression.[9] TPP has shown to be a moderate androgen-receptor binder and estrogen receptor agonist in *in vitro* testing.[8] *In vitro* testing has also showed TPP to be a mitochondrial activity inhibitor.[10] Metabolic disruption was observed in offspring of rats exposed to a commercial mixture containing TPP.[11]

Exposure

Triphenyl phosphate is primarily used as a plasticizer and flame retardant.[12] TPP has been used as a flame retardant in PVC, electronics, glues, casting resins, and hydraulic fluids, and as a plasticizer in hydraulic fluids, varnishes and lacquers including nail polish.[3,12]A TPP metabolite has been detected in human urine after application of nail polish.[3]

TPP has been detected throughout the environment in air, household dust, surface water, soil and sediment.[13-21]

TPP can bioaccumulate in fish.[19] TPP was added to the Toxic Substance Control Act work plan in 2014 due to its moderate persistence and bioaccumulation potential and acute and chronic aquatic toxicity.[22]

A metabolite of TPP was found through biomonitoring in human urine collected throughout North America.[17,23,24] DPHP, a metabolite of TBB, was detected in 100 percent of urine samples collected from pregnant women in a China.[25] An Indiana study detected TPP in hair and nails of young adults.[26] TPP was detected in breast milk in Swedish and Asian studies.[27,28]

Other

TPP is a component of the commercial flame-retardant mixture Firemaster 550.[12]

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