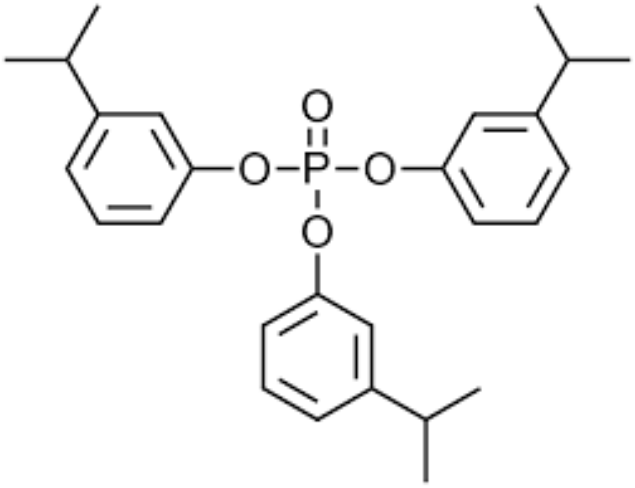

CAS 68937-41-7 Isopropylated triphenyl phosphate (IPTPP)

Toxicity

IPTPP is classified by the EPA as a high hazard for reproductive toxicity based on studies of rats orally exposed to IPTPP, which reported reduced fertility and altered epidydimal and ovarian weights.[1] IPTPP has been designated by the European Union (EU) as a category 2 reproductive hazard, for suspected of damaging fertility and the unborn child".[2] IPTPP is classified by the EPA as a high hazard for developmental and neurological toxicity based on the toxicity of structurally similar analogs.[1]

Pregnant rats given IPTPP showed decreased fertility and pup survival. Neurological effects, such as brain cholinesterase inhibition, was observed in rodents fed a commercial mixture of IPTPP.[1] Hens orally exposed to IPTPP over 91 days exhibited ataxia and degeneration of the spinal cord and peripheral nerves.[3] A 2016 *in vitro* study by Schang et al. reported a significant increase in steroid production and basal progesterone production in mouse tumor Leydig cells exposed to IPTPP.[4]

Exposure

IPTPP is used plasticizer and flame retardant. It has been used in Europe in polyurethanes, PVC products, textile coatings, paints, pigment dispersions and adhesives.[5] Firemaster 550, which contains IPTPP has been detected in children's products.[6,7,8]

The mean total daily intake of IPTPP was 0.1 ng/kg body weight for infants, 0.7 ng/kg for toddlers, 0.2-0.4 ng/kg for ages 14-16 and 0.4-0.8 ng/kg body weight for adults according to 1982-1984 U.S. total diet studies.[9] A 1994 study detected IPTPP in U.S. vegetation, wastewater, surface water and sediment.[10] A 1999 study detected IPTPP in the soil at two U.S. Air Force bases.[11]

IPTPP is characterized by the EPA to have a high potential for bioaccumulation based on estimated bioaccumulation factor values, experimental bioconcentration factor values and a moderate persistence in biodegradation studies.[1]

Other

An isomeric mixture of phosphate esters makes up IPTPP and may vary in composition.[1,5] IPTPP is also a component of the commercial flame retardant mixture Firemaster 550 which is widely used in flexible polyurethane foam as a flame retardant.[7]

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