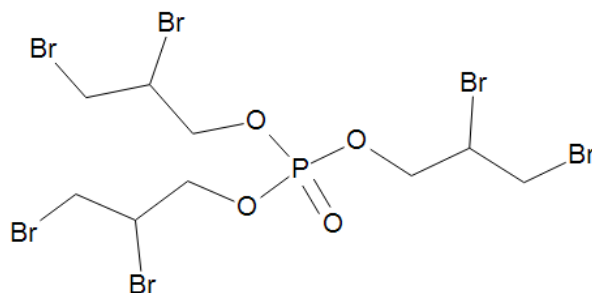


CAS 126-72-7

Tris (2,3-dibromopropyl) phosphate (TDBPP)

$C_9H_{15}Br_6O_4P$



Summary of Health Effects

TDBPP may cause cancer in humans.

How is TDBPP used?

TDBPP has been used in acrylic carpets and sheets, polyvinyl and phenolic resins, polystyrene foam, paints, lacquer, paper coatings, styrene-butadiene rubber, latex and water flotation devices as an additive flame retardant.¹

In 1977 the U.S. Consumer Product Safety Commission banned the sale of children's garments containing TDBPP due to results of a National Cancer Institute report showing TDBPP causes cancer in animals.²

Toxicity: What are its health effects?

TDBPP is considered a carcinogen by the State of California under Proposition 65.³ The International Agency for Research on Cancer has classified TDBPP as a Group 2A probable carcinogen.⁴ The National Toxicology Program

has characterized TDBPP as a reasonably anticipated human carcinogen.⁵ According to the European Food Safety Authority, evidence suggests that TDBPP is carcinogenic and a genetic toxicant.⁶

Exposure: How can a person come in contact with it?

A person may come in contact with TDBPP by breathing in, eating, or skin contact with contaminated dust, or from skin contact with consumer products containing TDBPP.

A California study sampled household dust in 2006 and 2011 and detected TDBPP in 75% of the samples.⁷ Laundering treated cellulose acetate and polyester fabrics can leach TDBPP into the wash and water.⁸ TDBPP was detected in seawater samples gathered from the Yellow and East China Sea, wastewater sludge at a Canadian wastewater treatment plant and in Arkansas soil and ambient air samples.⁹⁻¹²

References

1. U.S. Environmental Protection Agency (EPA) (2015). *Chemical Data Access Tool (CDAT) – Chemical Data Reporting (CDR) information on the production and use of chemicals manufactured or imported into the United States*. 201210/15/2015 10/30/2015]; Retrieved from java.epa.gov/oppt_chemical_search

2. Consumer Product Safety Commission (CPSC) (1977). *CPSC Bans TRIS-treated children's garments*. [Accessed 8/12/2015]; Retrieved from www.cpsc.gov/en/Newsroom/News-Releases/1977/CPSC-Bans-TRIS-Treated-Childrens-Garments
3. State of California OEHHA (2016). *Chemicals known to the state to cause cancer or reproductive toxicity*. 2016 August. Retrieved from: oehha.ca.gov/proposition-65/proposition-65-list
4. International Agency for Research on Cancer (IARC) (1987). *Monograph 71. TRIS(2,3-DIBROMOPROPYL) PHOSPHATE*. Retrieved from monographs.iarc.fr/ENG/Monographs/vol71/mono71-39.pdf
5. National Toxicology Program (2016). *Report on carcinogens, fourteenth edition*; Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service. Retrieved from ntp.niehs.nih.gov/ntp/roc/content/profiles/tris_dibromopropyl_phosphate.pdf
6. European Food Safety Authority (EFSA) (2012). *Scientific opinion on emerging and novel brominated flame retardants (BFRs) in food*. European Food Safety Authority: Parma, Italy. Retrieved from www.efsa.europa.eu/en/efsajournal/pub/2908
7. Dodson, R.E., Perovich, L.J., Covaci, A., Van den Eede, N., Ionas, A.C., Dirtu, A.C., Brody, J.G., Rudel, R.A. (2012). After the PBDE phase-out: A broad suite of flame retardants in repeat house dust samples from California. *Environmental Science & Technology*, 46, 13056–13066.
8. IARC (1979). *Some halogenated hydrocarbons*. Lyon France: Int Agency Res Cancer 20: 578. Retrieved from publications.iarc.fr/Book-And-Report-Series/IARC-Monographs-On-The-Identification-Of-Carcinogenic-Hazards-To-Humans/Some-Halogenated-Hydrocarbons-1979
9. Hu, M. Y., Li, J., Zhang, B. B., Cui, Q. L., Wei, S., and Yu, H. X. (2014). Regional distribution of halogenated organophosphate flame retardants in seawater samples from three coastal cities in China. *Marine Pollution Bulletin*, 86, 569–574.
10. Woudneh, M.B., Benskin, J.P., Wang, G.H., Grace, R., Coreen Hamilton, M., Cosgrove, J.R. (2015). Quantitative determination of 13 organophosphorous flame retardants and plasticizers in a wastewater treatment system by high performance liquid chromatography tandem mass spectrometry. *Journal of Chromatography A*, 1400, 149–55.
11. Zweidinger, R.A., Cooper, S.D., Erickson, M.D., Michael, L.C., Pellizzari, E.D. (1979). Sampling and Analysis for Semivolatile Brominated Organics in Ambient Air. *Monitoring Toxic Substances*. 94, 217-231. DOI:10.1021/bk-1979-0094.ch013.
12. DeCarlo, V.J. (1979). Studies on brominated chemicals in the environment. *Annals of the New York Academy of Sciences*, 320, 678–681. doi:10.1111/j.1749-6632.1979.tb56642.x.