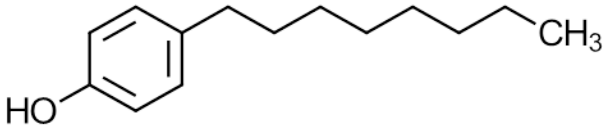
CAS 1806-26-4

4-Octylphenol

$C_{14}H_{22}O$

VERMONT DEPARTMENT OF HEALTH



Summary of Health Effects

4-octylphenol can irritate the skin and eyes of humans. It can also affect how hormones act in the bodies of animals.

How is 4-octylphenol used?

4-octylphenol is used in detergents and as an emulsifier in manufacturing. In a screening of plastic toys, 4-octylphenol was found in two out of 28 polyvinyl chloride (PVC) plastics.[1]

Toxicity: What are its health effects?

4-octylphenol is known to cause skin irritation and serious eye irritation.[2]

The European Union classified it as a category 1 endocrine disruptor with estrogenic activity.[3]

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

A person can come in contact with 4-octylphenol from skin contact or by swallowing it.

4-octyphenol has been detected in the natural environment in surface water and fish.[4,5] It has also been detected in packaged and canned vegetables.[6]

A 2012 study detected 4-octylphenol in the urine of Chinese adults.[7] The 2014 National Health and Nutrition Examination Survey (NHANES) report did not include data for 4-octylphenol.

References

1. Dutch Inspectorate for Health Protection and Veterinary Public Health (2005). *Screening of plastic toys for chemical composition and hazards* (Report ND05o610/01). Retrieved from nvwa.nl/documenten/consument/consumentenartikelen/non-food/speelgoed/chemische-stoffen-in-kunststof-speelgoed
2. European Chemicals Agency. *p-Octylphenol–Summary of classification and labelling*. Retrieved November 9, 2018, from echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/60109
3. European Commission DG Environment (2002). *Endocrine disruptors: study on gathering information on 435 substances with insufficient data* (Final report B4-3040/2001/325850/MAR/C2). Retrieved from ec.europa.eu/environment/chemicals/endocrine/pdf/bkh_report.pdf
4. Vigano, L., Mandich, A., Benfenati, E., Bertolotti, R., Bottero, S., Porazzi, E., Agradi, E. (2006). Investigating the estrogenic risk along the river Po and its intermediate section. *Archives of Environmental Contamination and Toxicology*, 51, 641-651. DOI: 10.1007/s00244-005-0129-1
5. Neng, N.R., & Nogueira, M.F. (2014). Determination of phenol compounds in surface water matrices by bar adsorptive microextraction-high performance liquid chromatography-diode array detection. *Molecules*, 19, 9369-9379. doi:10.3390/molecules19079369

6. Cacho, J.I., Campillo, N., Vinas, P., Hernandez-Cordoba, M. (2012). Determination of alkylphenols and phthalate esters in vegetables and migration studies from their packages by means of stir bar sorptive extraction coupled to gas chromatography–mass spectrometry. *Journal of Chromatography A*, 1241, 21-27. dx.doi.org/10.1016/j.chroma.2012.04.018

7. Chen, C., Zhu, P., Xu, B., Zhao, R., Qiao, S., Chen, X., Tang, R., Wang, X. (2012). Determination of nine environmental phenols in urine by ultra-high-performance liquid chromatography—tandem mass spectrometry. *Journal of Analytical Toxicology*, 36, 608-615. doi:10.1093/jat/bks072