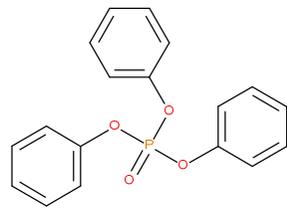




Triphenyl phosphate

Triphenyl phosphate is an industrial chemical and used as a plasticizer and a fire retardant in a wide variety of settings and products.

mass: 326,283
g/mol
CAS:
115-86-6
C₁₈H₁₅O₄P



The LANUV measurements meet the following criteria necessary for clear identification:

- 1) match of the exact mass, ± 5 ppm
- 2) match of the isotope pattern, min. 70 %
- 3) match of a reference spectrum
- 4) match of retention time

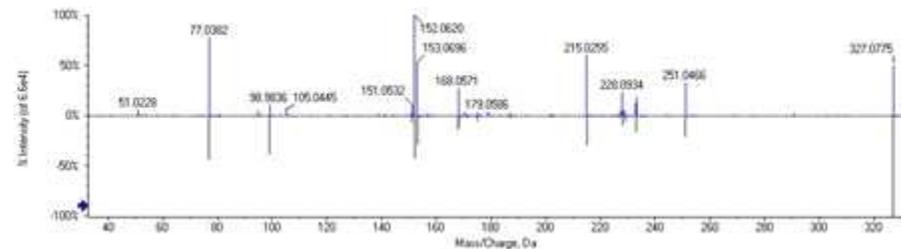


Figure 1: comparison of fragment-ion-spectra, blue: sample Ruhr near Mülheim, gray: reference substance

Analysis and occurrence

Triphenyl phosphate can be detected with the existing measuring method in positive mode. It was found in all the investigated rivers (Rhine, Ruhr and Wupper) and therefore it belongs to the ubiquitous substances. The general precautionary value of 0.1 µg/L is not exceeded.

¹ https://www.bmu.de/fileadmin/Daten_BMU/Pool/Forschungsdatenbank/fkz_3712_28_232_umweltqualitaetsnormen_bf.pdf

Relevance

The substance has a relevant ecotoxicological potential. The German Federal Environmental Agency (UBA) set an EQS-proposal of 3.7 µg/L in 2014¹. The European Chemicals Agency (ECHA) is currently investigating triphenyl phosphate for a possible endocrine disrupting potential².

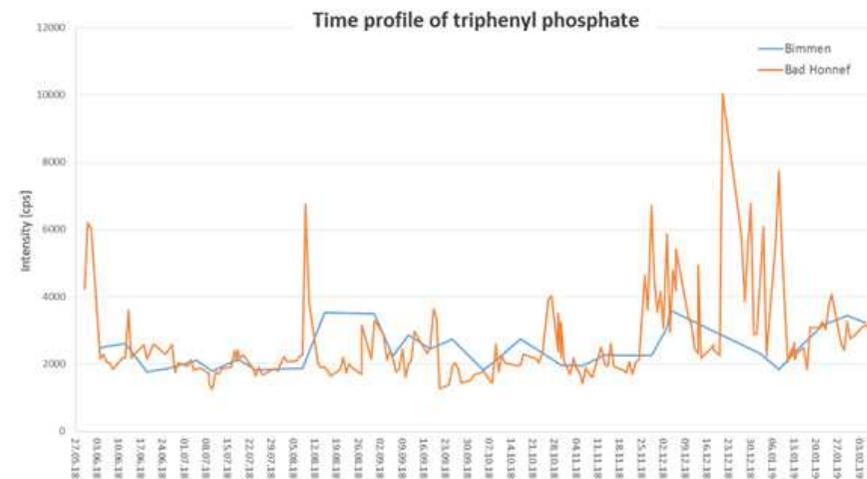


Figure 1: Time profile of Bicalutamide in the river Rhine, orange: Bad Honnef Rhine-km 640, blau: Bimmen Rhine-km 865

Further procedure:

The derived EQS-proposal of 3.7 µg/L is not exceeded in any sample. By further measurements, no gain in knowledge is expected. Therefore, triphenyl phosphat is not included in the regular monitoring program. If the ECHA studies confirm an endocrine disrupting potential, the substance will be re-evaluated.

² <https://echa.europa.eu/de/substance-information/-/substanceinfo/100.003.739>