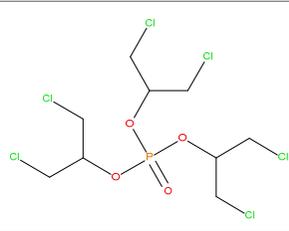




Tris-(1,3-dichloro-isopropyl)-phosphate

Tris-(1,3-dichloro-isopropyl)-phosphate (TDCPP) is an industrial chemical used primarily as a flame retardant and plasticizer.

mass: 430,91
g/mol
CAS:
13674-87-8
 $C_9H_{15}Cl_6O_4P$



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

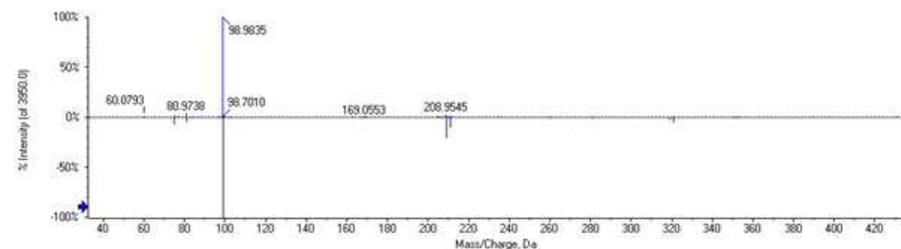


Figure 1: comparison of fragment-ion-spectra, blue: sample Ruhr near Mülheim, gray: reference substance

Analysis and occurrence

TDCPP can be detected with the existing measuring method in positive mode. It was found in all investigated rivers (Rhine, Ruhr and Wupper) and

¹ <https://echa.europa.eu/de/substance-information/-/substanceinfo/100.033.767>

therefore it belongs to the ubiquitous substances. The general precautionary value of 0.1 $\mu\text{g/L}$ is not exceeded.

Relevance

The substance has a relevant ecotoxicological potential. The PNEC determined by the EU in 2008 is 10 $\mu\text{g/L}$. TDCPP will be investigated by the European Chemicals Agency (ECHA) for a possible endocrine disrupting potential in 2023¹.

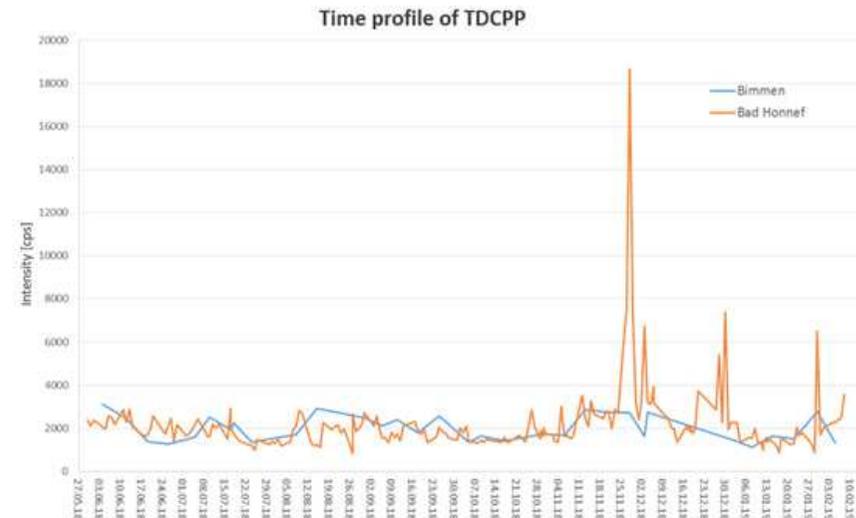


Figure 1: Time profile of Bicalutamide in the river Rhine, orange: Bad Honnef Rhine-km 640, blau: Bimmen Rhine-km 865

Further procedure:

TDCPP will not be included in the regulatory monitoring because the PNEC of 10 $\mu\text{g/L}$ was not exceeded in any sample. By further measurements, no gain in knowledge is expected. If the ECHA investigations confirm an endocrine disrupting potential, the substance will be re-evaluated.