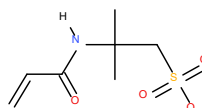




AMPS (2-Acrylamido-2-methylpropane sulfonic acid)

AMPS is an acrylic monomer and is classified as a sulfonic acid. It is used as a comonomer or additive in many fields. As an acrylic monomer, it is used in the manufacture of superabsorbents, e.g. in baby diapers. As an additive, it increases for example the washing effect of surfactants and the dyeability of synthetic fiber textiles.

mass: 207.25g/mol
CAS: 15214-89-8
C₇H₁₃NO₄S



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 with a reference spectrum
- 4) Match of the retention time with the reference substance

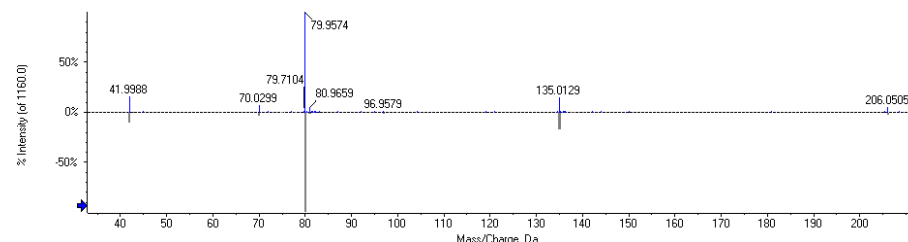


Figure 1: Comparison of fragment-ion-spectra, blue: sample Ferndorfbach near Siegen, grey: reference substance

Analysis and occurrence

AMPS can be detected with the existing measuring method in negative mode. It does not belong to the ubiquitous substances, because it occurs only sporadically in the investigated water bodies (Rhine, Ruhr, Sieg and Ems).

Relevance

There are no legally binding limit values for AMPS in drinking water. Therefore, the general prevention value of 0.1 µg/L for drinking water is used for the assessment. Due to its substance properties (low log P, high water solubility), AMPS is classified as potentially relevant to drinking water based on the available data. So far, no information on the behavior in drinking water treatment process is available.

The available ecotoxicological data do not indicate a high relevance of the substance (no acute toxic effect up to 100 mg/L). However, results from chronic tests with invertebrates and fishes are missing. Due to the low log P, no high bioaccumulation potential is expected. Available data indicate that the substance is persistent in the environment.

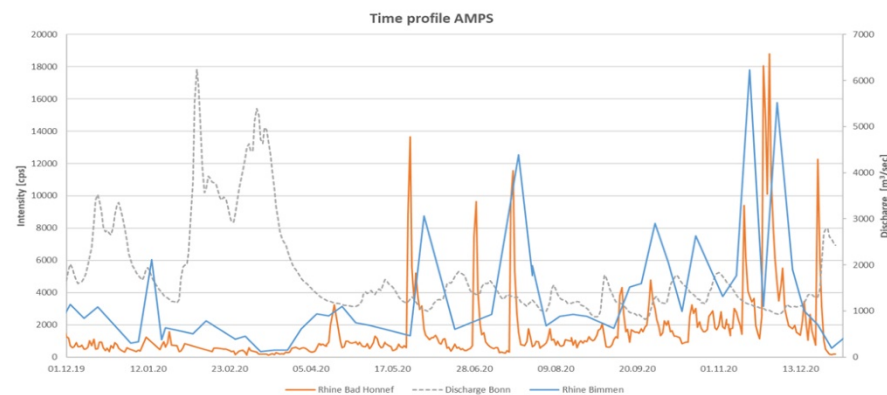


Figure 2: Time profile of AMPS in the river Rhine near Bad Honnef and Bimmen

Further procedure:

AMPS does not belong to the ubiquitous substances, because it could only be detected sporadically in the investigated water bodies. Due to a similar time profile of AMPS at the measuring station in Bad Honnef (entrance of the river Rhine in NRW) and in Bimmen (end of the river Rhine in NRW) no significant entry of AMPS from affluent within NRW can be detected. By further measurements, no gain in knowledge is expected