Butyl acrylate

(CAS numbers: e.g. 141-32-2, EC number: 205-480-7 / Entry number in HELCOM list of substances of concern: 7)

General sectors: Industry and commercial products, off-shore (shipping), personal care product

DRIVERS | ACTIVITIES | PRESSURES | STATE | IMPACTS

Why a HELCOM concern?

Main evidence

S Concentrations of a substance tentatively identified as Butyl acrylate exceed the applied threshold value in all the **23** examined areas (assessment units) of the Baltic Sea. The threshold is exceeded in both coastal and off-shore areas (**3**/3 assessed off-shore areas). In these 23 areas, **100%** of the assessible samples in **biota** exceed the threshold value. This is based on suspect screening data from the project PreEMPT[1]. A total number of 62 data points were possible to evaluate for this substance.

By further considering how much above or below the threshold each concentration is, and how often the substance is detected, Butyl acrylate scores **9.2/10** (confidence range: **8.5 – 9.2**) in the scale established when assessing the criticality/significance of current levels in the Baltic Sea pose, where 5 indicates concern and 10 extreme risk, and the range reflects the level of reliability and representativeness of concentrations and the thresholds.

The threshold value for Butyl acrylate, in biota, was acquired from the NORMAN Network ecotoxicology database[2].

I Current levels in the Baltic Sea indicate potential negative impacts on pelagic biota and/or top predators such as mammals and birds.

Overall assessment

When assessing current levels in the Baltic Sea, current inputs, and the severity of the relevant toxicity mechanism, Butyl acrylate scores **62-93/100** in the scale established for assessing the overall risk for impacts/threat for the Baltic Sea, where 50 indicates concern, 100 extreme risk, and the width of the span outlines the uncertainty in the assessment.

Facts relevant for management considerations

Causal chain and pathways

A The EU REACH registered volume for Butyl acrylate is 100,000 - 1,000,000 t/y[3]. Registered uses include consumer uses in inks, toners, adhesives, sealants (although some of the registrants advise against these); professsional uses of coatings and adhesives (some registrants advise against); and several industrial uses in polymerization, as adhesive, etc. According to project reports[4], Butyl acrylate is also an important pollutant emitted from ships (potentially as a transformation product of emulsifiers, and linked with bilge water or ballast water, to be confirmed). Furthermore, it is authorised in the EU for use in personal care products as a binding agent.

S ? *In order to further improve the evaluation of the risk, the first aspect to consider is identity confirmation (PreEMPT samples). If identity is confirmed, then a furhter aspect to consider is a review of the relevant toxicity threshold (biota).*

Relevant policies (existing or planned measures)

M (on A/P) • Butyl acrylate is covered by a recent **Assessment for Regulatory Needs prepared by ECHA** (on a group of acrylates and methacrylates with linear or branched aliphatic alcohols, simple acids and salts)[5]. Also noted that a minority of the REACH registrants (0.6% of registrations) indicate that they consider this substance as a PBT[6].

References:

1. 2. 3. 4. 5. 6.

[Note: Listing of detailed references will be provided in an upcoming update of the fact sheet – for a listing of the most common references among the different substances see the section at the end of the consolidated document which includes all the fact sheets]