Metsulfuron-methyl

General sectors: Pesticide

(CAS numbers: e.g. 74223-64-6, EC number: 616-063-8
/ Entry number in HELCOM list of substances of concern: 15)

DRIVERS | ACTIVITIES | PRESSURES | STATE | IMPACTS

Why a HELCOM concern?

Main evidence

P Approximately **7-112 kg of Metsulfuronmethyl** are estimated to enter the Baltic Sea every year via rivers (WATERBASE[1]). Additional inputs are expected via direct coastal run-off. Given that the substance is **suspect as persistent** and is **very toxic**[2], current inputs are likely significant, in terms of risk they pose for the Baltic Sea and its ecosystem services. The data used for the riverine part of the estimation (WATERBASE) concerns only measurements in the proximity of river mouths, and the period 2015-2022. The 8 subcatchment areas for which there was such riverine data reflected 6% of the total riverine flow to the Baltic, to which inputs have been extrapolated. The data in WATERBASE included approximately 2 countries and 185 samples.

Supporting evidence

I Metsulfuron-methyl is considered to have a concerning **mode of toxicity**, as it is inhibits protein biosynthesis[3].

Overall assessment

When assessing current levels in the Baltic Sea, current inputs, and the severity of the relevant toxicity mechanism, Metsulfuron-methyl scores **28-97/100** 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 Metsulfuron-methyl is approved as an active ingredient in plant protection products in all 8 Contracting Parties which are members of the EU[4]. Based on expert information provided, the sales volume in Latvia currently is 150 kg/y. According to the literature[5], it is used as a herbicide against weeds and some annual grasses.

P No significant contributions are expected from WateWater Treatmeant Plant effluents. Indeed, the substyance is not detected in WWTP effluents (Undeman et al, 2022[6]). As mentioend above, the main pathway to the Baltic Sea is riverine emissions and potentially also direct coastal run-off.

S ? *In order to further improve the evaluation of the risk, relevant aspects to consider are a review of the expected relevant toxicity thresholds and either marine monitoring or modelling for predicted environmental concentrations based on estimated inputs.*

Relevant policies (existing or planned measures)

M -

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]