

Dechlorane Plus (anti-DDC-CO)

(CAS numbers: e.g. 13560-89-9, EC number: 236-948-9

/ Entry number in HELCOM list of substances of concern: 12)

General sectors: Industry and commercial products

DRIVERS

ACTIVITIES

PRESSURES

STATE

IMPACTS

Why a HELCOM concern?

Main evidence

P Approximately 20 - 300 kg of Dechlorane Plus are estimated to enter the Baltic Sea every year via rivers (Gustavsson et al, 2018¹). Additional inputs are expected via the atmospheric deposition route². Given that the substance is **very persistent, very bioaccumulative, and very toxic**³, 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 inputs estimation concerns only measurements in the proximity of river mouths. They originate from one-grab samples from the 23 rivers covering the whole latitudinal range of Sweden. And they have been extrapolated to the total riverine flow to Baltic Sea.

I Current inputs to the Baltic Sea indicate potential negative impacts at least on pelagic biota.

Overall assessment

When assessing current levels in the Baltic Sea (no relevant measurement data), current inputs, and the severity of the relevant toxicity mechanism, Dechlorane Plus scores **32-96/100** 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 EU REACH registrant(s) ceased manufacture of this substance in 2020⁴. Before that, the registered volume was 100 - 1,000 t/y and regarded uses at industrial sites as a flame retardant in adhesives, sealants, polymer preparations, and semiconductors. With >10 t/y ending up in articles such as computers, electronics, electrical batteries and accumulators, vehicle textiles, textiles and apparel, automobiles, aerospace, and defence engines⁵. About 300 manufacturers/importers have submitted Classification & Labelling notifications to ECHA for this substance under the EU CLP Regulation (it is possible that some of them have also ceased manufacture/import, however have not inactivated their notifications). Dechlorane Plus is a potential substitute for DecaBDE (a PBDE), which is restricted under the Stockholm Convention⁶.

S ? *In order to further improve the evaluation of the risk, relevant aspects to consider are an estimation of inputs via atmospheric deposition and its trends following inclusion under the Stockholm Convention, a review of the relevant toxicity thresholds (expected relevant matrices) and marine monitoring. As well as the likely relevance of the syn-DDC-CO isomer, in addition to the anti isomer.*

Relevant policies (existing or planned measures)

M (on A/P) • Listed under **Stockholm Convention** on POPs (signed by all HELCOM Contracting Parties) in 2023 (listing not entered yet into force) – Annex A (elimination of manufacture and use, with specific exemptions possible) – with specific exemptions: aerospace, space and defence applications, medical imaging and radiotherapy devices and installations, replacement parts for, and repair of, articles in applications where Dechlorane Plus was originally used in the manufacture of those articles and may be available, limited to the following applications, until the end of the service life of the articles or 2041/2044 (such as the above plus certain types of vehicles, equipment, and machinery).

• Dechlorane Plus is listed as **SVHC (Substances of Very High Concern)** under **EU REACH** (due to its vPvB properties). It has also been recommended by ECHA for inclusion to the REACH Authorizaition list, in 2019. However with the actual inclusion been expected, back then, to be impacted by its anticipated potential inclusion also in the Stockholm Convention.

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]