

**ENDOSULFAN**  
**Submission of information specified in Annex E**  
**of the Stockholm Convention pursuant to Article 8 of the Convention**  
**Makhteshim Agan Industries**  
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**Summary Remarks**

The present endosulfan risk profile provides robust evidence that adverse human health and/or environmental effects resulting from potential long-range environmental transport are unlikely to take place. The information furnished here demonstrates that endosulfan does not meet the POP criteria and provides sufficient contrary evidence and data to the hazard and alleged human and environmental concerns cited in the POPRC proposal POPRC.4/14. In particular:

- The weight-of-the-evidence indicates in detail that endosulfan does not pose neurotoxic risk to human health, and is not an endocrine-disrupting compound at environmentally relevant levels of exposure.
- It is not persistent in air - the atmospheric half-life of endosulfan is shorter than two days.
- Its persistence in water and soil/sediment requires closer examination of the available evidence as indicated in this submission.
- With respect to bioconcentration/bioaccumulation the measured BCF values are far below the POP trigger of 5,000 (1,000 to 3,000 in fish compared to 600 or less in invertebrates). In addition, the BCF predictions from bioaccumulation modelling with aquatic organisms range from 1,000 (mean prediction) to 2,400 (90<sup>th</sup> percentile).
- Available studies and reviews suggest that it is not possible to conclude with any certainty whether there is a significant relationship between measured concentrations and trophic levels for endosulfan.
- Based on the very low exposure levels in food, water and the environment, no potential concern regarding adverse effects to human health and the environment exists.
- Concerning Long Range Transport, analytical uncertainties and quality assurance issues need to be taken into account when assessing the relevant data available. It should also be noted that there is a high degree of uncertainty concerning the interpretation and significance of the monitoring data available. In fact, many of the published data are of poor analytical quality. It is very uncertain that long-range transport of endosulfan occurs at relevant levels and to a significant extent.
- Concerning ecotoxicological risks, endosulfan concentrations in arctic terrestrial wildlife, fish and seabirds are below effect threshold levels.
- Concerning human dietary risk with respect to indigenous peoples in the Arctic, even considering very conservative assumptions, e.g. all *traditional food* eaten is contaminated with the highest concentration of endosulfan detected; the calculated potential dietary risks are negligible.