Sub-statement on the potential risk(s) from exposure to microplastics: Inhalation route

Microplastics - Inhalation route -COT conclusions

In this guide

96. The COT noted that there are limited data regarding the toxicokinetic fate of inhaled microplastics in mammalian species. The extent to which retention in the lung is of concern is not yet clear. No epidemiological or controlled dose studies that evaluated the effects of inhaled microplastics in humans were identified.

97. As such, the COT concludes that based on the available data, it is not yet possible to perform an assessment for the potential risks from exposure to micro and nanoplastics *via* the inhalation routes; however, the COT concurs with the conclusions reached by other authoritative bodies (EFSA (2016, 2020, 2021), WHO (2019, 2022), ECCC (2020) and HC, SAPEA (2019), SAM (2019), as described in the COT overarching statement on the potential risks from exposure to microplastics : COT Statement 2021/02, paragraphs 101-129).

98. The COT concluded that the literature data on exposure to particles from tyre wear would need separate consideration from microplastic exposure from food, since the particles are chemically quite different in their polymeric nature. Risk assessment of such material was considered potentially outside the scope of the current exercise.

99. The most significant data gaps are the lack of appropriate and harmonised analytical methods for the detection of micro- and nanoplastics (together with suitable reference standards), as well as information on their toxicokinetic and toxicity profiles in/relevant for humans.

100. The COT highlighted that additional information will be needed from all exposure sources, which include indoor and outdoor air, dust and soil before a risk assessment can be completed. The presence of MPs in food and water needs to be put into perspective with other sources of MPs such as atmospheric fallout.

101. Current studies typically focus on only one type of particle/tissue interaction, as such, further research is necessary to explore the effects of the range of particle types in different tissues *in vitro* and/or *in vivo*. This range of particle types should also take account of emerging/novel plastic-based materials such as bioplastics. The future priorities for risk assessment are shown in Table 1.