Conceptual framework for polymer safety assessment

BRUSSELS, 9 May 2019: The European Centre for Ecotoxicology and Toxicology of Chemicals Polymers Task Force has developed a Conceptual Framework for Polymer Risk Assessment (CF4Polymers).

The CF4Polymers Technical Report (TR 133-1) reviews the state-of-the-science polymer grouping and risk assessment procedures and provides guiding principles for assessing potential ecological and human health hazards and risks from polymer products.

The report takes into consideration that polymers are diverse, versatile and complex, often containing intentionally (and non-intentionally) added substances – and that they can also change their form during different life cycle stages.

In view of this complexity, the CF4Polymers modifies the conventional chemicals risk assessment approaches into eight steps for risk assessment polymers:

1. Defining the risk assessment scope and protection goal
2. Identifying the polymer
3. Determining which components of the polymer should be addressed
4. Identifying opportunities for grouping of similar polymers and avoiding unnecessary testing
5. Determining exposure scenarios
6. Determining nature of exposure
7. Identifying hazards
8. Characterising risks

For each of the eight steps, the CF4Polymers provides detailed outlines to accomplish them, together with explanatory notes and examples.

Olivier de Matos, ECETOC Secretary General, said: “This report represents a major step forward in safety assessment of polymers. It provides consistency and is also the first time that the polymer risk assessment process not only addresses the polymer itself, but also any potential impurities or added substances. It is anticipated that the guidance will evolve in light of future developments in the state of knowledge”.

The CF4Polymers is the first of a three-part series, the other two Technical Reports being: A review of the applicability of standardised analytical tools, test methods and in silico models to assess the physical, chemical, fate, ecotoxicological and toxicological properties of polymers; and A selection of case studies addressing different components of polymer grouping and RA to put the CF4Polymers into practice.

The full CF4Polymers Technical Report can be found here.

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