Integrated Risk Information System (IRIS) Program
Public Webinar

Mixtures Modeling Methods: Applications for Assessing Polychlorinated Biphenyls (PCBs)

Agenda

U.S. Environmental Protection Agency
Office of Research and Development (ORD)

Wednesday, March 16th, 2022

1:00 pm (ET) **Welcome and Announcements:**
Kris Thayer, IRIS Program Director, EPA/ORD

1:10 pm **Introduction to EPA's human health risk assessment practices for chemical mixtures**
Glenn Rice, EPA/ORD

This talk broadly overviews human health risk assessment practices used to evaluate risks and hazards associated with chemical mixtures in the environment. Following a brief introduction, the talk addresses component methods used by EPA, methods used to evaluate human health risks and health hazards associated with whole mixtures, and approaches that have been developed to evaluate sufficient similarity among mixtures. In its Supplementary Mixtures Guidance, EPA offered that, when toxicity data for a specific mixture are not available for use in risk assessment, health risk values from a mixture judged to be sufficiently similar could be used as a surrogate.

1:50 pm **Mixtures modeling – methods considered for the assessment of polychlorinated biphenyls**
Laura Carlson and Jeff Gift, EPA/ORD

PCB mixtures present in modern human exposure sources have generally not been evaluated in toxicological studies whereas toxicological data are much more abundant for commercial PCB mixtures, including Aroclors. This presentation will introduce equivalence testing methodologies that can be used to compare chemical mixtures for sufficient similarity and will use case examples to illustrate the potential utility of these methodologies for comparing environmental and commercial PCB mixtures.

2:30 pm **Methods for estimating relative potency values**
Grace Patlewicz, EPA/ORD

Computational toxicology encompass a myriad of different approaches to address toxicity data gaps. Approaches include surfacing information through web-based Dashboards, notably the CompTox Chemicals Dashboard (*comptox.epa.gov/dashboard*), through to (Quantitative) Structure-Activity Relationships ((Q)SARs), and chemical grouping approaches such as read-across. This talk will provide an overview of these approaches ending with a specific example showing how relative potency values can be estimated using QSARs.

3:10 pm **Overview of the Mixtures Similarity Tool (MiST)**
Graham Glen and Joanne Trgovcich, ICF

The Mixtures Similarity Tool (MiST) implements an equivalence testing method for identifying "sufficiently similar" mixtures for use in risk assessment as described in the second talk in this session. MiST provides a user-friendly interface that streamlines analyses conducted using this peer-reviewed and published method. This talk will present an overview of the MiST, including data requirements, inputs, relevant tool settings, and modeling assumptions. An example analysis will be shown to provide a step-by-step demonstration of the tool's use, including data entry and results display.

3:50 pm **Additional Discussion/Question & Answer**

4:00 pm **ADJOURN**