

# www.epa.gov

# **Evidence Mapping of Gray Literature Under TSCA: A Gray Literature Decision Tree Framework**

Yousuf Ahmad, Yvette Selby-Mohamadu, Amy Benson, Kellie Fay, Clifton Townsend, Ariel Hou U.S. EPA, OCSPP/OPPT/ RAD

### Abstract

Gray literature is defined as the broad category of data or information sources not found in typical peer-reviewed published journals and literature databases (e.g., PubMed and Web of Science). Sources of gray literature may include white papers, conference proceedings, technical reports, reference books, dissertations, as well as information on various stakeholder websites and databases. Gray literature sources pose a challenge to the systematic review process because they are not amenable to typical title/abstract screening approaches for myriad reasons, including the lack of abstracts, format of the literature (e.g., databases), and/or robustness of the source information. These sources generally require full text screening to determine relevancy for inclusion.

For the first 10 chemical risk evaluations conducted under the amended Toxic Substances Control Act (TSCA), EPA generated a list of gray literature that went directly to full-text screening, bypassing the title/abstract phase of the systematic review. EPA proposes a decision tree framework for gray literature that generally acts as an equivalent to the title/abstract screening step in the systematic review process. This process considers potential relevance (i.e., the source has related quantitative or qualitative information relevant to TSCA risk evaluations), completeness (i.e., the source has an established procedure for data collection, communication, peer review, and/or reporting), availability (i.e., the source is publicly available) and duplication of the gray literature source prior to making a determination on whether to proceed with fulltext screening for a given source. EPA proposes to use this the decision tree to evaluate gray literature identified both through initial searches, as well as for gray literature submitted to the Agency.

### Systematic Review Overview



### **Gray Literature Benefits**

Gray literature provides some of the **highest quality information** for the engineering and exposure disciplines.

Examples of high quality EPA gray literature sources include:

- Toxics Release Inventory Data (TRI)
- National Emissions Inventory (NEI)
- ICIS-NPDES Permit Limit and Discharge Monitoring Reports Data sets (DMR)

Other sources of high quality gray literature include:

- ATDSR Toxicological Profiles
- CDC's National Health and Nutrition Examination Survey (NHANES)

## **Gray Literature Challenges**

SACC comments from first 10 chemicals indicated a desire for **increased transparency** regarding how the gray literature was selected and screened

### Bottom line: Gray literature is Gold, but it needs to be mined



• Gray literature is not amenable to title/abstract screening like peer reviewed literature.

• Gray literature is presented in atypical formats (database outputs, webpages etc.)

 Occasionally it is difficult to determine whether certain gray literature is credible to use



This information is distributed solely for the purpose of pre-dissemination peer review. It has not been formally disseminated by EPA. It does not represent and should not be construed to represent any final Agency determination or policy. Mention of trade names or commercial products should not be interpreted as an endorsement by the EPA.

National Academy of Sciences (NAS) Review of EPA's Systematic Review Approach, June 19, 2020 Webinar

