

Approaches to Identifying
Potential Candidate Chemicals
for Prioritization:
**Functional Category Approach Based on
Use and Exposure Potential**

Joel Wolf and Ana Corado
U.S. EPA, Office of Pollution Prevention and Toxics
December 11, 2017



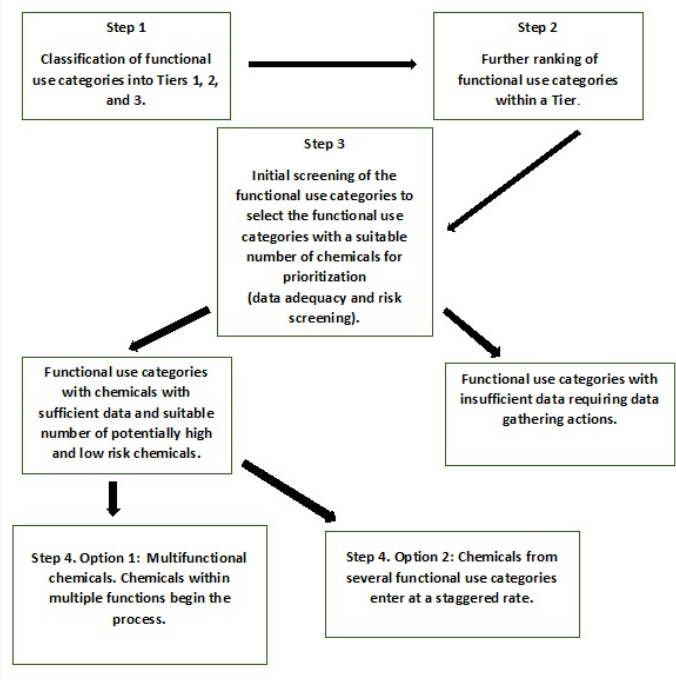
Functional Category Approach Based on Use and Exposure Potential

A functional use category approach could be used to identify groups of candidate chemicals with similar functional uses for prioritization.

- Functional use categories: defined by CDR and OECD.
- Exposure potential: overall understanding of the potential exposure of a particular use category (e.g. consumer, commercial and industrial use; releases, including to water; number of workers; volume of chemical used; etc.)



Identifying Candidates for Prioritization Based on Functional Use Categories





Identifying Candidates for Prioritization Based on Functional Use Categories

- **Step 1: Classification of functional use categories.**
 - based on their exposure potential;
 - made without a specific high-priority chemical in mind;
 - based on information reported under the 2016 CDR, Toxics Release Inventory, or Consumer Product Safety Commission Product Evaluations, and previous experience.
 - Tier 1 functional use categories include consumer (including children) products widely used and with a high likelihood of exposure.
 - Tier 2 functional use categories include other consumer, commercial and industrial uses with a high likelihood of exposure.
 - Tier 3 are the remaining functional use categories.



Identifying Candidates for Prioritization Based on Functional Use Categories

- **Step 2. Further ranking of functional use categories.** Tiering would be further refined by considering other exposure-related factors.
- Factors could include:
 - number of workers (e.g. > 1,000) using the chemicals;
 - total volume (e.g. > 100,000 lbs/yr) of chemical used;
 - uses that will result in discharge down the drain through residential or commercial use, or in commercial settings;
 - uses with other likely water releases or with potential to contaminate drinking water sources;
 - functional uses involving spray application or emissive uses associated with volatile chemicals in indoor settings where susceptible subpopulation, such as children, could be exposed;
 - other considerations such as continuous use of a chemical or the chemical is actively transported; etc.

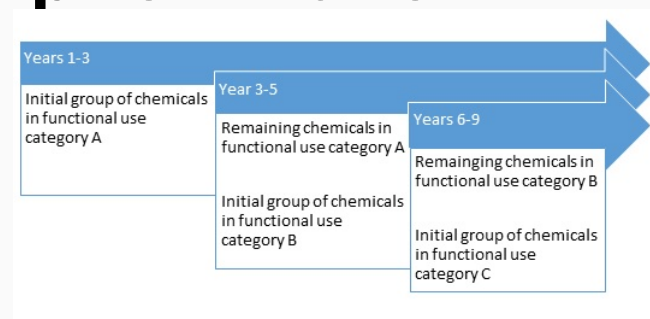
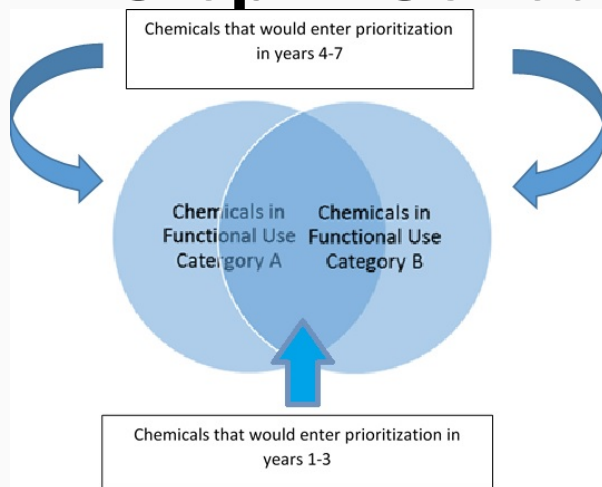


Identifying Candidates for Prioritization Based on Functional Use Categories

- **Step 3. Initial screening of the functional use categories to select the functional use categories with adequate data and a suitable number of chemicals for prioritization.**
 - to identify if the chemicals within a given functional use category have sufficient data and if the functional category has a suitable number of chemicals with possible high and low risk.
 - screening using tools such as the High-throughput Screening and Computational Model (Approach 6).
 - functional use categories consisting of chemicals lacking sufficient data would be put in a queue for data gathering actions.

Identifying Candidates for Prioritization Based on Functional Use Categories

- Step 4. Scheduling of prioritization.**





Identifying Candidates for Prioritization Based on Functional Use Categories

Benefits

- Grouping chemicals with similar functional uses can lead to:
 - Efficiencies in chemical assessment where chemicals have similar use and exposure patterns.
 - A smoother substitutes transition for industry given that EPA would be assessing all the chemicals within the same functional use.
 - Identifying low-priority designations to help ensure the availability of alternative chemicals, prevent unfortunate substitution and address uncertainty in the marketplace.
- For downstream risk management: EPA may have more complete information on which to base eventual risk management decisions.

Caveats

- The process outlined focuses on exposure potential related to the functional use category.
- Selection of a chemical based on consumer exposures or a chemical within the Tier 1 functional use category will not preclude the chemical from being evaluated under all conditions of use.



Identifying Candidates for Prioritization Based on Functional Use Categories

Maximizing stakeholder involvement will be important.

- Ensure a solid understanding of the functional use categories and the use patterns of chemicals within the category.
- Focus opportunities to gather additional information to classify a particular functional use category as Tier 1, 2, or 3.
- Identify additional data/criteria to further group the functional use categories within each Tier; and gather additional information to identify a broad range of chemicals for each functional use category.