

# Alternatives Assessment Evaluation Tools

## Hazard Assessment



# Hazard Assessment

- Green Screen for Safer Chemicals – Clean Production Action
- Globally Harmonized System (GHS) – UNECE
- EPA Use Cluster Scoring System (UCSS) – US EPA
- OECD Screening Information Data Set (SIDS) High Production Volume (HPV) Chemicals ReachScan – IPCS
- EPA Source Ranking Database (SRD) – US EPA

# Hazard Assessment – Chemical Lists

- California Proposition 65 - OEHHA
- Canada, Domestic Substances List (DSL)
- EPA Integrated Risk Information System (IRIS) - US EPA
- International Agency for Research on Cancer (IARC)



# Questions

- Which hazard assessment tools do you use?
- What other tools/methods do you use for hazard assessment?
- Are the characteristics listed in the descriptions adequate?
- What additional descriptions would be beneficial in aiding to choose a tool/method?
- Format preference? Narrative, table, case studies or examples?



# Green Screen

- Comparative Chemical Hazard Assessment approach
- Considers 18 environmental and human health endpoints
- Addresses constituents and breakdown products
- Evaluates chemical hazards for an overall chemical score (Benchmark 1 - 4)
- GreenScreen™ v 1.2 launched October 2011



# Globally Harmonized System (GHS)

- Classification of chemicals by types of hazard
- Includes criteria for classifying substances and mixtures according to their health, environmental and physical hazards
- Incorporates requirements for labeling and safety data



# EPA Use Cluster Scoring System

- Computer-based, risk-screening system with information about nearly 3,200 chemicals and the 380 clusters
- Uses a simple system to score and rank chemicals and their respective use clusters
- Identifies clusters of potential concern and ranks chemicals using human health, environmental hazard and exposure data
- Users may use the system to compare the toxicity of similar chemicals used to perform a particular task



# OECD Screening Information Data Set High Production Volume Chemicals

- Publishes publicly available assessment reports for international HPV chemicals
- Indexed by CAS numbers and chemical names
- Includes existing information on:
  - Chemical identity
  - Physical characteristics
  - Sources and levels of exposure
  - Environmental fate and pathways of exposure
  - Toxicological and ecotoxicological data

# OECD Cooperative Chemicals Assessment Programme

- Evolving to encompass a wider scope of assessments than HPV chemicals and to include a variety of new projects
- Manual for the Assessment of Chemicals
  - Describes process for gathering data
  - Guidance for evaluating the quality of data as well as guidance for grouping of substances and the use of structure-activity relationships
  - Guidance for assessing the hazards of chemical substances to man and the environment
  - Guidance on exposure assessment



# EPA Source Ranking Database

- Screening level review of 12,000 potential indoor pollution sources
- Identifies high priority product and material categories
- Identifies products that contain specific chemicals
- Users can rank products or product categories that contribute to indoor air pollution and identify the relative contribution of each constituent chemical to a consumer product's score



# Canada's Domestic Substances List

- Identifies substances that must be assessed to determine if they are toxic or capable of becoming toxic
- contains 23,000 substances
- Includes substances used in Canadian commerce above 100 kg/year, either for manufacturing purposes or imported into Canada from 1984 through 1986
- Substances on the DSL are categorized and screened separately from “new substances”



# EPA Integrated Risk Information System

- Web-accessible database
- Contains information on health effects that may result from exposure to environmental contaminants.
- Has information for more than 550 chemical substances
- Contains searchable documents that describe health effects and includes qualitative and quantitative information for both cancer and non-cancer effects



# IARC Monographs

- Developed criteria to evaluate carcinogenic risks to humans
- Publishes monographs describing these evaluations
- Maintains a summary list of agents classified by IARC monographs
  - Recommends consulting the monograph itself for any particular agent to fully interpret the classification



# California Proposition 65

- List of chemicals known to the state to cause cancer or reproductive toxicity
- Contains approximately 800 chemicals
- Adopts safe harbor levels for the chemicals
- Requires businesses to notify consumers of exposure to listed chemicals of concentrations greater than the safe harbor levels

