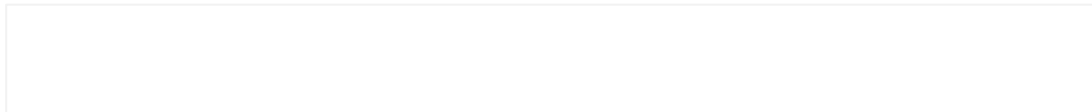


TOOLS & RESOURCES FOR SAFER CHEMICALS





pure|STRATEGIES

Sustainable Chemicals Management Software
A Pure Strategies review of tools for managing chemicals in products

Sustainable Chemicals Management:

involves strategy, product design & supply chain management

Chemicals Strategy	Safer Product Design	Sustainable Chemicals Supply
<ul style="list-style-type: none">• Create aspirations/goals/policies• Develop business case• Establish priority chemicals• Enhance transparency and communication	<ul style="list-style-type: none">• Assess hazards and alternatives• Create product design guidelines• Verification and assurance	<ul style="list-style-type: none">• Assess supplier risks• Engage and align suppliers• Collaborate with suppliers and stakeholders

Sustainable Chemicals Management Software: set goals, understand requirements, and evaluate vendors

Sustainable Chemicals Management Software Selection Process



What are the business priorities?

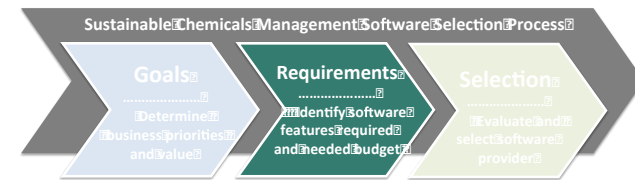
Setting company sustainable chemicals management goals an essential 1st step

What are the key features you should look for?

Focus on software features essential for meeting company goals

What criteria matter to select software and services to meet meet your needs?

Assess quality of key software features, performance and extent of experience with companies with similar business needs



1. Inventory Chemical Data

involves collecting detailed data on each chemical

Inventory materials/chemical ingredients

- *Composition*
- *CAS#/EC#*
- *% Concentration*
- *Ingredient function or residuals and/contaminants*

Identify articles & homogenous materials by

- *Weight*
- *Composition*

Generate data gap information

- *Ingredients/materials less than 100%*
- *Ingredients characterized only by % ranges*
- *CAS #s unknown/identified only by class/withheld for CBI*



Goals

Determine
business priorities
and value

Requirements

Identify software
features required
and needed budget

Selections

Evaluate and
select software
provider

1. Inventory Chemical Data

Barriers include data gaps and CBI

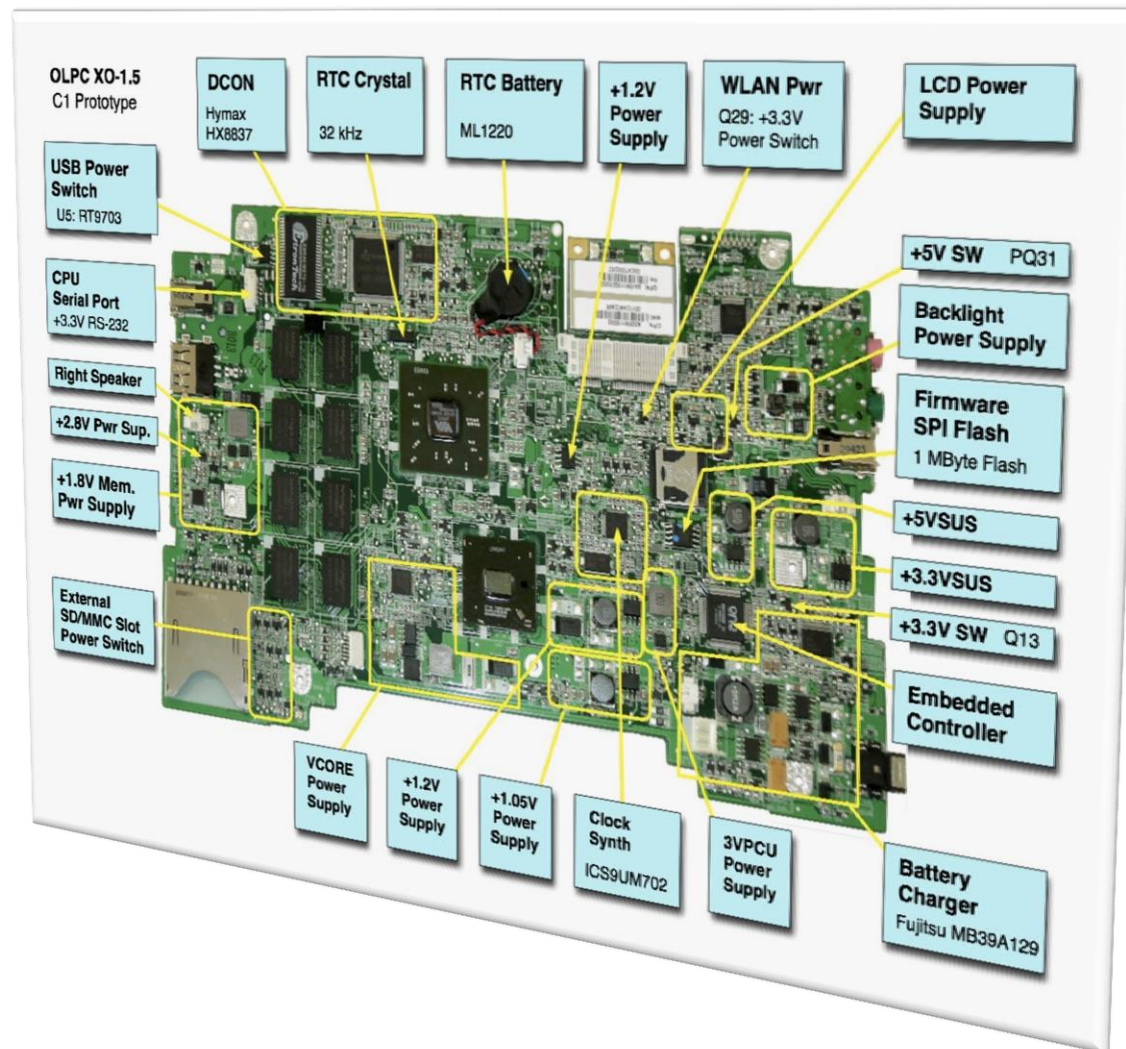
BOMs Gaps

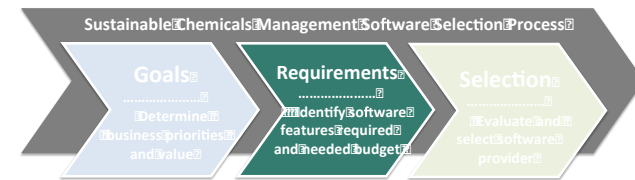
- ID missing components
- ID missing amounts
- ID improbable combinations
- Routine suppliers queries
- Manage CBI
- Tier 2 & beyond

Economies/Expertise

- Retailers
- Textiles
- Toys

Vendor expertise crucial





2. RSL Inventories

Are important but have limitations

Scope of coverage of RSLs

- National regulations
- Regional/local regulations
- Industry sector - e.g., AAFA, BIFMA)
- Customized RSLs

System for updating

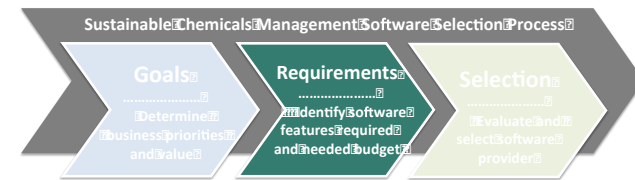
- System for routine updates
- Frequency of updates (daily, weekly, etc.)

RSL Limitations

- Regulatory lists often lag scientific knowledge of chemical hazards
- Sole reliance on regulatory RSLs may lead to regrettable substitutions



“Bisphenol-A free” products using
equally hazardous BPS



3. Hazard Assessment

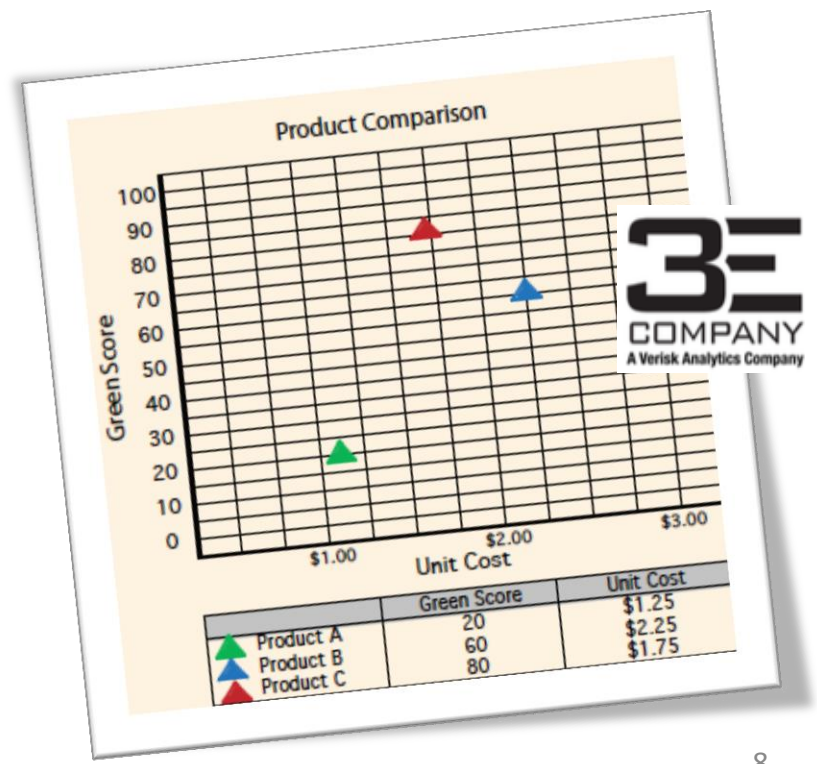
Can be automated and individualized

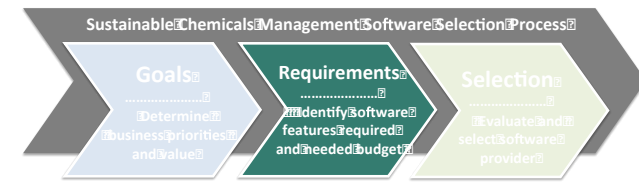
- ### Endpoints commonly based
- Globally Harmonized System (GHS)
 - EPA Design for the Environment
 - Human health
 - Environment
 - Physical

- ### Weighing Hazards
- Value-based weighing of different hazards

- ### Automated Hazards
- E.g., CPA's GreenScreen List Translator automates search of >850 authoritative/screening lists.

- ### Vendor Assessments
- Based on scientific research/literature build into the software
 - Provide individualized hazard assessments for chemical ingredients





4. Exposure Assessment

Comes from a variety of sources

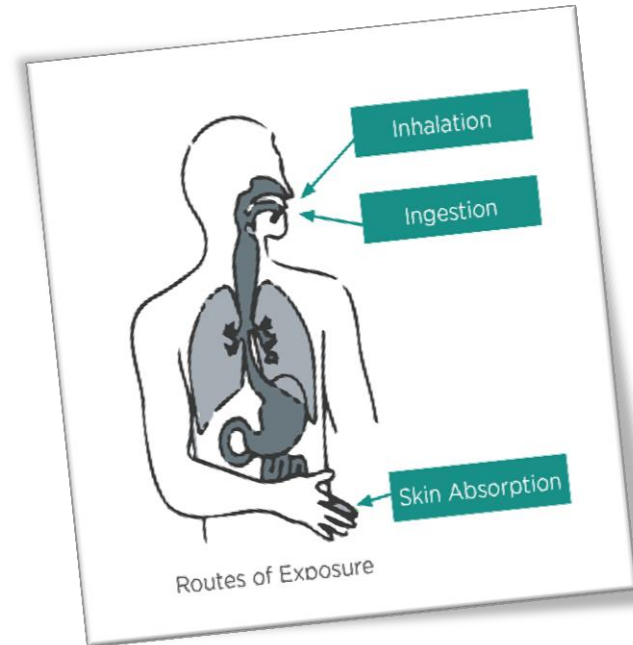
- Assessments evaluate
 - Intrinsic physicochemical characteristics
 - Life cycle & product factors
 - Exposure scenarios derived from public or proprietary databases

Regrettable Substitution

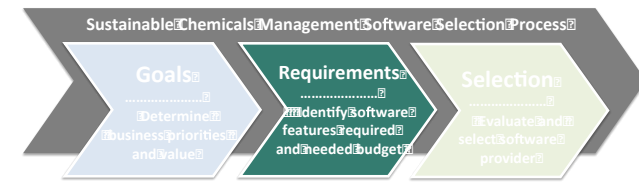
- Perchloroethylene replaced with n-propyl bromide

Exposure Data

- Proprietary data from customers
- Data on consumer exposure to chemicals in consumer products being aggregated by the Dutch research agency, RIVM.



SciVera and Chemical Compliance Systems (CCS)



5. Identify Alternatives

Tools use different schemes

Comparative scoring

- Value based scoring of the relative hazard endpoint scores

Toolboxes of alternatives

- Vendor proprietary
- Sector specific – e.g., Safer Choice/DfE

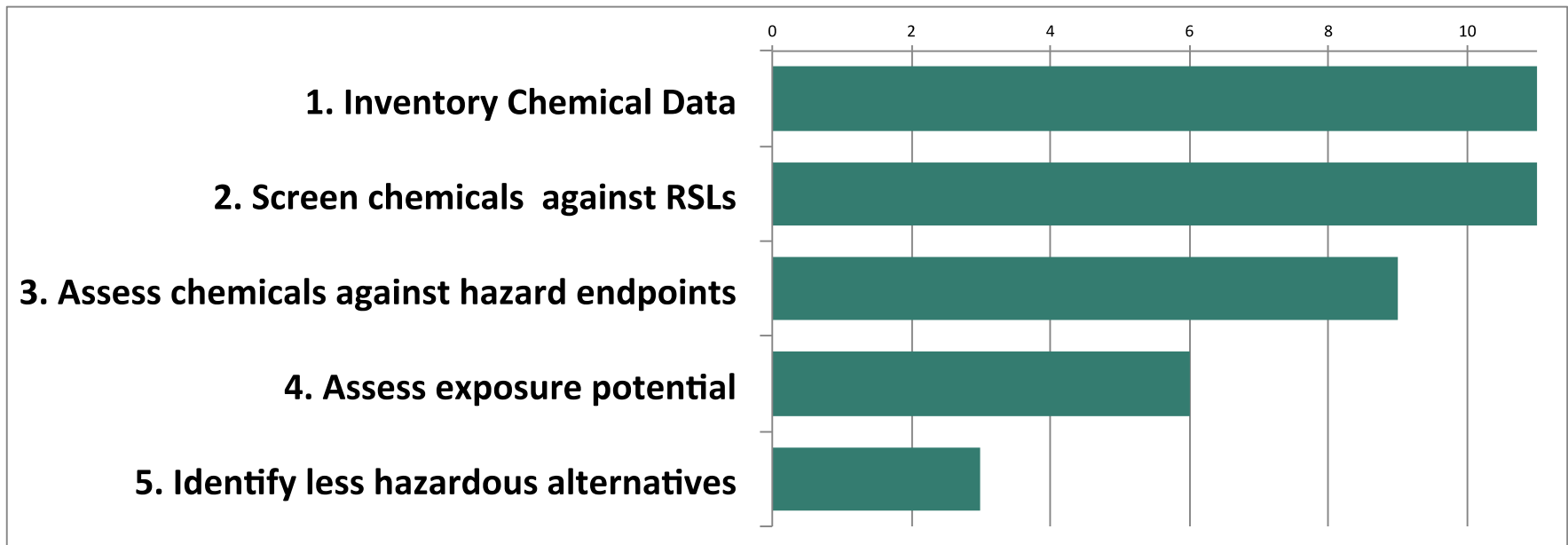
Chemical Compliance Systems (CCS) has list of “potentially greener chemicals” organized by ~ 65 categories

DfE’s Safer Chemical Ingredients List: Functional Categories

- Antimicrobial actives
- Chelating actives
- Colorants
- Defoamers
- Enzymes & enzyme stabilizers
- Fragrances
- Oxidants & oxidant stabilizers
- Polymers
- Preservatives & anti-oxidants
- Processing aids & additives
- Solvents
- Specialized industrial chemicals
- Surfactants
- Uncategorized



Five Software Capabilities are key to sustainable chemicals management software



- Not all software tools include all capabilities
- Inventory & some RSL screens essential
- Assess features against chemical management goals

Software Selection: *influence your selection*

Your goals, budget, and sector will

Sustainable Chemicals Management Software Selection Process



What criteria matter to select software and services to meet meet your needs?

Assess quality of key software features, performance and extent of experience with companies with similar business needs

Sustainable Chemicals Management Software Capabilities and Vendor Services	YES	NO	Need more information	Importance for your business (H,M,L)
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Depth/detail of chemical data provided by vendor software system & additional services

Does the software provide sufficient detail in inventory and tracking of relevant chemical ingredient information to meet your company's needs in supply chain transactions and internal management (e.g., ingredient CAS numbers, concentrations, identity & weight of homogeneous materials)?				
Is a wide enough array of regulatory, industry sector or major customer chemical RSLs routinely available as part of the vendor's software offerings to meet most of your company's business requirements?				
Does the vendor regularly update changes in included regulatory and/or industry RSLs?				
If vendor regularly updates changes in included RSLs, is frequency of updating at least	Daily?			
	Weekly?			
	Monthly?			
	Quarterly?			

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