Example Alternatives Assessment Tools

Assessment Method	Description	Criteria Considered	Comments/Best For	Limitations	Where to find
Column Model	Developed by Institute for Occupational Safety (BIA) of the German Federation of Institutions for Statutory Accident Insurance and Prevention. Developed for company use to identify safer alternatives to chemicals currently being used.	• Acute/chronic toxicity • Environmental aquatic hazards • Physical hazards • Exposure potential (determined using vapor pressure) • Processing related hazards	• Array and compare hazards associated with various chemicals • Requires minimal data • If no data available for CMR, rank as high risk	• Only usable if data available on MSDS/SDS. • Does not address materials	http://www.dguv.de/ifa/en/pra/spalte/index.jsp
The Green Screen for Safer Chemicals	Developed by Clean Production Action as an open source tool to identify substances that are inherently less hazardous for humans and the environment.	• Environmental fate (persistence and bioaccumulation • Acute/chronic human and eco-toxicity (priority effects identified) • Physical hazards • Breakdown products and metabolites	• Provides benchmarks for categorization of chemicals, which defines a path towards safer chemicals • Purely hazard based analysis	• Does not consider exposure • Does not address materials	http://www.cleanproduction.org/Greenscreen.php
Pharos	Developed by the Healthy Building Network to support building materials specifiers and purchasers in choosing safer materials and products.	• Health and pollution (considers use and end-of-life aspects) • Environment and resources (energy, water, materials, waste and habitat impacts) • Social and community (incl. occupational hazards, social responsibility and consumer health and safety impacts)	• Considers multiple attributes associated with the use of building materials • Uses spider diagram approach to displaying results	• Limited to building products • Many of the criteria are difficult to define, with limited data available for comparisons.	http://www.pharosproject.net/

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Pollution Prevention Options Analysis System (P2OASys)	Developed by Massachusetts Toxics Use Reduction Institute for companies to analyze the environmental and worker health and safety impacts of the chemicals they use.	• Acute/chronic toxicity • Physical/ergonomic • Chemical hazards • Persistence • Bioaccumulation • Atmospheric hazards • Aquatic toxicity • Disposal hazard • Energy and Water use • Exposure potential	• Side by side comparisons of current processes.	• Only a limited amount of data has been entered • Research intensive • Expert judgment required for some qualitative criteria	http://www.turi.org/toxics_use_home/hot_topics/cleaner_production/p2oasys_tool_to_compare_materials

Prio	Developed by the Swedish Chemicals Inspectorate (KemI) to help environmental managers, purchasers and product developers reduce risk to human health and the environment from chemical exposures. Designed to support the Swedish parliament's goal of a non-toxic environment.	Database includes two categories:
		• Phase Out Substances
		  o CMR
		  o PBT, vP or vB
		  o Hg, Cd, Pb and their compounds
		  o Endocrine Disrupters
		  o Ozone-depleting substances
		• Risk Reduction Substances
		  o Very high acute toxicity
		  o Allergenic
		  o Mutagenic
		  o High chronic toxicity
		  o Environmentally hazardous long-term effects
		  o Potential to be PBT, vP or vB
			• Best used in prioritizing chemicals for elimination or risk reduction
			• Searches can be done in a variety of ways – such as by product type, hazardous properties, substance group, or using the chemical name or CAS number
				• Incomplete database
				• Many chemicals currently in commercial use are not included in the database
				• Does not consider physical hazards
				• Information on quantities and areas of use are Sweden-specific
					http://www.kemi.se/templates/PRIOEngpage____4159.aspx

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Quick Scan	Developed by the Dutch Ministry of Housing, Spatial Planning and the Environment as a means of prioritizing the management and evaluation of approximately 100,000 substances currently in use.	• Environmental fate (persistence and bioaccumulation • Acute/chronic human and eco-toxicity (priority effects identified, including hormone disrupting effects) • Exposure based on chemical use (industrial use, site-limited intermediate use, open applications/professional use and consumer applications • Availability of alternatives	• This method was developed in part to avoid a large increase in animal testing for toxicity, by evaluating existing data where possible • Five categories of chemicals – very high concern, high concern, concern, low concern, and provisionally very high concern. • Chemicals for which no data exists are placed into the very high concern category • Best for evaluating and comparing human health and environmental risks for substances with sufficient data • Exposure not directly measured – use type is utilized as a proxy for exposure	• No database currently exists	http://international.vrom.nl/pagina.html?id=37626

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