



Managing the Chemical Risks
of Regulation, Reputation and Redesign

CHAPTER 5

Managing the Chemical Risks of Regulation, Reputation, & Redesign

The Chemical Footprint Project results provide a window into how companies manage the “chemical risks”—the financial liabilities—of regulation, reputation, and redesign. To gain a preliminary understanding of how well companies manage these risks, we categorized the 20 indicators in the survey by risk type and assessed how companies performed.

Regulatory Risks: Current & Future Regulations

Seven indicators in the Chemical Footprint Project survey relate to how well companies manage for current and future regulatory risks.

Two indicators in the survey directly relate to managing current regulatory risks, such as

Regulatory Risks

Current Regulations: Meeting Global Requirements

- I1. Managing legally restricted substances, including contracting requirements for suppliers
- I6. Assuring conformance with policies, especially among suppliers

Future Regulations: Anticipating Change

- M1. Creating a policy to avoid CoHCs beyond legal restrictions
- M4. Engaging in public policies to promote the use of safer alternatives
- I2. Developing a beyond restricted substances list (RSL)

Future Regulations: Acting Ahead of Government

- F1. Setting goals for reducing CoHCs & measuring progress
- F3. Measuring reduced use of CoHCs



TABLE 4 **Regulatory Risks: Relevant Indicators and Average Score as Percent of Possible Points**

Regulatory Risks: Chemical Footprint Project Indicator	Average score as percent of possible points
I1: Manage restricted substances	57 percent
M1: Have policy to avoid CoHCs	47 percent
I2: Manage beyond restricted substances	44 percent
F1: Set goals for reducing chemicals of high concern (CoHCs)	46 percent
I6: Assure supplier conformance	36 percent
M4: Engage in public policies	26 percent
F3: Reduce use of CoHCs	24 percent
All regulatory risk indicators	41 percent

product recalls and government fines. Companies that do not track the chemicals governments restrict globally (I1), do not include RSLs in supplier contracts (I1), and do not audit suppliers or routinely test supplier parts for compliance (I6) are vulnerable to hazardous chemicals in products

and supply chains, and therefore to product recalls and government fines for non-compliance with regulations. Indicators I1 and I6 are indicative of active strategies for managing chemicals in products and supply chains. Companies scored above average (note average for all indicators is 41 percent) for I1 and below average for I6 (see Table 4).

The five indicators that relate to future risks divide into two themes: anticipating new regulations and planned and actual reductions.

Companies anticipate future chemical restrictions by creating corporate policies (M1) and restricted substances lists (I2) that go beyond current regulations. Chapter 2 notes examples of beyond legally restricted substances lists developed by governments and NGOs that identify known and potential CoHCs. Companies scored above average for M1 and I2.

Companies also “anticipate” regulations by actively engaging in their creation (M5). Prior research indicated that companies that use chemicals in manufacturing rarely support public policies that restrict CoHCs, require labeling of chemical ingredients, and/or prefer safer alternatives.³⁵ Results from the survey confirmed this finding, with companies scoring far below





average for proactive public policy engagement for M4.

Setting goals (F1) and measuring progress away from CoHCs (F3) are additional actions companies can take to reduce their regulatory risks. Companies struggled with answering F3, scoring far below average as compared with the other regulatory risk indicators. This is in part due to the fact that many companies lack the baseline data to evaluate their chemical footprint.

Opportunities for Improvement: Companies can readily reduce risks from current regulations—such as product recalls and non-compliance fines—by: tracking global chemical restrictions (I1), including RSLs in supplier contracts (I1), and auditing suppliers or routinely testing supplier parts for compliance (I6). Companies can also reduce risks from future regulations by creating corporate policies and RSLs that go beyond current regulations (M1 and I2).

Reputation Risks: Trust & Transparency

“It takes 20 years to build a reputation and five minutes to ruin it.” —Warren Buffett³⁶

Reputation risks are the potential costs of being exposed publicly with hazardous chemicals in products or supply chains. The perceptions of employees, suppliers, customers, and other stakeholders, including investors, the media, NGOs, and communities all affect corporate reputation.³⁷ The revelation of hazardous chemicals in products and supply chains can quickly affect relationships with these constituencies. As highlighted in Chapter 2, hazardous chemicals pose potentially significant risks to brand reputation—witness the impacts on Sigg USA³⁸ and Lumber Liquidators.³⁹ Lower sales, reduced market valuation, reduced customer loyalty, and lawsuits are among the costs related to reputation risks.

Trust and transparency are important contributors to a positive corporate reputation. Companies generate trust through a variety of means including vision and leadership, social and environmental responsibility, products and services, workplace environment, and financial

Reputation Risks

Trust

- M3. Integrating chemicals policies into business strategy
- M5. Creating incentives to ensure implementation of chemicals policies
- D4. Providing third party verification of responses to the Chemical Footprint Project questions

Transparency

- D1. Publicly disclosing chemicals in products
- D2. Publicly disclosing participation in the Chemical Footprint Project
- D3. Publicly disclosing responses to the Chemical Footprint Project questions

Trust & Transparency

- F2. Measuring baseline chemical footprint

TABLE 5 Reputation Risks: Relevant Indicators and Average Score

Reputation Risks: Chemical Footprint Project Indicator	Average score as percent of possible points
D2: Disclose participation in Chemical Footprint Project (CFP)	92 percent
M3: Integrate policies into strategy	37 percent
M5: Develop incentives for policies	37 percent
F2: Measure baseline footprint	27 percent
D1: Disclose chemical ingredients	19 percent
D3: Disclose CFP responses	13 percent
D4: Verify CFP responses with 3rd party	4 percent
All reputation risk indicators	29 percent

performance.⁴⁰ Transparency, in turn, generates trust and enhances a company’s reputation.⁴¹ The Chemical Footprint Project indicators provide a window into reputation risk from chemicals by assessing the depth to which companies integrate chemicals management into their strategies and incentives, and are public about their efforts.

Companies that successfully embed safer chemicals into business strategy will engender the loyalty and trust of their key constituencies, especially employees, customers, and NGOs (M3). Indicator M5 is the only question in the

Chemical Footprint Project that directly addresses employee incentives and responsibilities—providing the most direct question related to workplace environment. Indicator D4, third party verification, addresses the concern by some stakeholders that self-assessments by companies cannot be trusted unless reviewed by a third party.

Companies scored below average (note average is 41 percent for all indicators) for all three indicators. For both M3 and M5 companies scored 37 percent and for D4 companies scored four percent of total possible points (see Table 5). Indicator D4 is a particular challenge because companies have yet to establish the necessary processes and procedures for verifying answers to the survey.

Transparency can reduce reputation risks for companies. Customers, NGOs, the media, and investors want greater transparency, and generally are more trusting of corporations that are more transparent. The Chemical Footprint Project encourages companies to be transparent about their chemicals management systems. Indicators in the survey either give partial credit (for example, M1) or full credit (D1, D2, or D3) for publicly disclosing answers. Indicators D1, D2, and D3 ask directly about disclosure, including whether a company discloses its chemical ingredients beyond what is legally required (D1), and whether the company discloses participation in the Chemical Footprint Project (D2) and its responses to the Chemical Footprint Project survey (D3).

Companies scored far above average for D2, 92 percent of possible points, with 22 of 24 companies disclosing participation in the Chemical Footprint Project. For D1 and D3, companies were far below average, scoring 19 percent of possible points for D1 and 13 percent of possible points for D3.

Trust & Transparency: Indicator F2—measure baseline chemical footprint—is a fundamental indicator because it relates to regulatory and redesign risks, as well as reputation risk. To quantitatively measure its chemical footprint a company must know the chemicals in its products and assess these chemicals for hazards, and must have a system for calculating the mass of CoHCs sold in products (unless the company employs a Design for Health strategy). A company that



calculates its chemical footprint is likely to generate trust among NGOs and investors, and is prepared to be transparent concerning its enterprise-wide chemical footprint. Indicator F2 is relevant to Regulatory and Redesign Risks because companies with a low or zero chemical footprint will have low Regulatory and Redesign Risks as well; conversely, companies with a high chemical footprint might have high Regulatory and Redesign Risks. We include Indicator F2 in Reputation Risk as it encompasses the largest challenge, that of making the company's chemical footprint public. Companies scored 27 percent of possible points for F2.

Companies scored far below average, 29 percent, for Reputation Risks, reflecting limited transparency related to chemicals management (see Table 5). For the Reputation Risk indicators, companies scored above average only for D2 (92 percent)—disclosing participation in the Chemical Footprint Project. The other Disclosure indicators, D1 (19 percent), D3 (13 percent), and D4 (4 percent) were among the lowest scoring indicators in the entire survey.

Opportunities for Improvement: Addressing Reputation Risk is challenging because many actions require senior management buy-in, including: public disclosure (D1, D2, D3), investing in verification (D4) and/or employees (M5), and



business strategy integration (M3). Beyond publicly disclosing participation in the Chemical Footprint Project (D2), an important step forward to build and improve reputation is to begin measuring a baseline chemical footprint (F2). As more investors and purchasers engage in the Chemical Footprint Project, disclosure and verification questions will likely become of greater interest (D1-D4).

Redesign Risks: Chemical Knowledge & Safer Alternatives

Redesign risks are the potential costs related to the continued use of hazardous chemicals in products and manufacturing processes, and not redesigning or reformulating products before regulations change or markets shift. Typically redesign is a positive opportunity for a company as substituting hazardous chemicals with safer alternatives can offer new business prospects. The Chemical Footprint Project indicators address redesign risks by evaluating the preparations companies take to move from CoHCs to safer alternatives.

Redesign risks emerge in two forms. First, redesign may occur too slowly. In the “too slow to redesign” risk scenario, a company does not select a safer alternative (either because it does not know a CoHC is in the product or because it deems the CoHC not worth removing). Over time regulations and/or markets shift, sometimes suddenly. The bankruptcy of Sigg AG USA noted in Chapter 2 provides an example of a company that knew its product contained a CoHC (BPA), did not remove it, and made the reputation mistake of not stating its product contained it. When markets shift and regulations change, companies with CoHCs then must make substitutions—they are at risk of lost sales and market share, higher costs of reformulation under crisis conditions, and regrettable substitutes.

Regrettable substitutes are a second form of redesign risks. A “regrettable substitute” is an alternative to a CoHC that is equally hazardous to, or more hazardous than, the existing CoHC. A typical scenario for selecting an alternative to a CoHCs in a product, especially in an article, is as follows. Government regulations or market forces drive a company to seek an alternative to a CoHC. The company evaluates alternative(s)

TABLE 6 **Redesign Risks: Relevant Indicators and Average Score**

Redesign Risks: Chemical Footprint Project Indicator	Average score as percent of possible points
F4: Assess hazards	73 percent
I5: Manage chemical data	52 percent
I4: Know chemicals in products	52 percent
I3: Collect data from suppliers	48 percent
M2: Have policy for safer alternatives	36 percent
F5: Encourage safer alternatives	34 percent
All redesign risk indicators	52 percent

Redesign Risks

Chemical Knowledge

- I3. Collecting data from suppliers
- I4. Knowing chemical ingredients in products
- I5. Managing chemical ingredient information
- F4. Assessing the hazards of chemicals

Safer Alternatives

- M2. Including a preference in corporate policy for the use of safer alternatives
- F5. Encouraging the use of safer alternatives

based on price and performance requirements, and reviews Safety Data Sheets (SDSs) to learn if any major health and safety concerns exist with the alternative. Companies may also determine whether the alternative is on a list of regulated CoHCs.

In researching only SDSs or regulatory lists, companies risk making regrettable substitutions. Some examples of regrettable substitutes include: substituting Bisphenol S (BPS) for BPA in receipt papers;⁴² substituting 2,3-pentanedione for diacetyl in butter flavoring for microwavable popcorn;⁴³ and substituting n-hexane for chloro-fluorocarbons (CFCs) in brake cleaners.⁴⁴ Hewlett-Packard estimates the cost of a chemical substitution to be at least \$6 million.⁴⁵ Companies want to avoid making regrettable substitutions because of the high costs of substitution and the potential impacts to their reputation.

The Chemical Footprint Project provides a window into how well companies prepare for redesign risks. Two types of indicators are important to anticipating redesign risks—those that assess a company’s chemical knowledge and those that consider its investment in safer alternatives.

Companies ahead of the curve in avoiding CoHCs in their products embed into their organizations two important types of chemical knowledge: ingredient knowledge and hazard knowledge. “Chemical ingredient knowledge” reflects how much a company knows about the chemical substances in its products, including intentionally added substances and impurities that are CoHCs. Indicators I3, I4, and I5 assess a company’s chemical ingredient knowledge. Companies performed above average for all three of these indicators. Companies scored above average (41 percent of possible points for all indicators) for these three indicators (see Table 6). For indicator I3 (assess the scope of chemical ingredient information collected from suppliers, from RSL to all chemical ingredients) companies averaged 48 percent. For indicator I4 (percentage of products collecting chemical ingredient information beyond CoHCs) companies averaged 52 percent. For indicator I5 (managing chemical ingredient data) companies averaged 52 percent. Note that the Chemical Footprint Project gives credit for both internal and outsourced data management systems.

“Chemical hazard knowledge” reflects how much a company knows about the hazards of the chemical ingredients in its products. Some companies in-source hazard knowledge whereas other companies outsource it—the Chemical Footprint Project gives credit for either approach. For indicator F4 (using systems or tools to assess hazards) companies averaged 73 percent.

Overall the responses to chemical knowledge-specific questions (beyond RSLs and CoHCs) indicate a positive pattern: respondent companies are taking steps to collect chemical ingredient information and assess the hazards of those ingredients.

Companies reduce their redesign risks by investing in safer alternatives. The Chemical Footprint Project assesses progress towards

safer alternatives with two indicators. Indicator M2 assesses whether corporate policies specify a preference for safer alternatives and Indicator F5 assesses the practices a company implements to encourage safer alternatives internally as well as with suppliers. For both of these indicators, companies scored below average. For Indicator M2 companies averaged 36 percent and for Indicator F5 companies averaged 34 percent.⁴⁶ Implementing F5 will require that companies have systems in place to assess and identify safer alternatives, and work with suppliers to implement alternatives that are safer and meet price and performance requirements.

Overall companies performed above average, scoring 52 percent of total potential points, for indicators relating to Redesign Risks. Companies performed better than average in knowing chemicals in products, managing chemical ingredient data, and assessing the hazards of those chemicals. Yet they performed below average in having a corporate policy to prefer safer alternatives and in encouraging suppliers to develop and use safer alternatives (see Table 6).

Opportunities for Improvement: Companies can reduce their redesign risks by investing in systems to improve their knowledge of chemical ingredients and hazards, and selecting safer alternatives. The pathway to increasing chemical knowledge is fairly straightforward and includes: a) engaging suppliers in providing chemical ingredient information beyond RSLs and CoHCs (I3); b) collecting ingredient information for all products (I4); and c) having a data system—either internal or external—for managing chemical ingredient information.⁴⁷ An array of tools, resources, and service providers are available to support companies in reducing redesign risks by helping to increase chemical knowledge and identify safer alternatives. Compilations of tools and resources can be found in: Chemical Footprint Project Guidance document,⁴⁸ BizNGO Guide to Safer Chemicals,⁴⁹ and publications of the Green Chemistry and Commerce Council such as Measuring Progress to Safer Chemicals.⁵⁰

Summary

The Chemical Footprint Project indicators provide a new window into the chemical risks that companies face and a roadmap for mitigating

these risks. Key findings and opportunities from this initial analysis include:

- **Regulatory risks: managed but opportunities for improvement** exist by adopting more wide-reaching chemicals policies and RSLs, and by working more closely with suppliers to ensure that CoHCs are not in products.
- **Reputation risks: limited transparency** among respondents means companies have ample opportunities for increasing engagement with their stakeholders through greater disclosure of their chemicals management practices.
- **Redesign risks: mixed results** with most respondents appearing to have good knowledge of the chemicals in their products, but needing to build and improve their programs for identifying and implementing safer alternatives.

Companies ahead of the curve in avoiding CoHCs in their products embed into their organizations two important types of chemical knowledge: ingredient knowledge and hazard knowledge.

Reducing chemical risk is challenging and requires leadership, training and incentives for employees and suppliers, and investment in data management systems. While these changes may initially be resource-intensive, they can significantly increase customer trust and loyalty and open up new business opportunities, especially for companies selling directly to consumers.

