

Chemical Footprint Project

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For a Planet Free of Chemicals and Waste

“Target D6 – By 2030, sustainable chemical and waste management strategies have been developed and implemented for major economic and industry sectors that identify priority chemicals of concern and standards and measures, such as **the chemical footprint approach [emphasis added]**, to reduce their impact and, where feasible, their input along the value chain”

Set of Principles

- precautionary principle – In line with **Rio Declaration (1992)** / European Union law
- hazard based approach – In line with Stockholm Convention on Persistent Organic Pollutants (POPs); Rotterdam Convention on Prior Informed Consent Globally Harmonized System of Classification and Labelling of Chemicals (GHS); EU REACH Regulation; the hierarchy of hazard controls (OSHA)

Set of Principles

- know and disclose product chemistry
- assess and avoid hazards
- measure a chemical footprint (mass)
- commit to continuous improvement
- implement safer chemicals

Key tenants of the chemical footprint approach



Set of 102 Key Performance Indicators



CHEMICAL INVENTORY (I) 30 points

#	Topic	Points
I 1	Restricted Substances List (RSL) / Manufacturing RSL	5
I 2	RSL/MRSL Compliance	5
I 3	Data collection	5
I 4	Full chemical ingredient information	5
I 5	Data management	5
I 6	Supplier conformance	5



MANAGEMENT STRATEGY (M) 20 points

#	Topic	Points
M 1	Chemicals policy	8
M 2	Business strategy	4
M 3	External engagement	4
M 4	Accountability	4



FOOTPRINT MEASUREMENT (F) 33 points

#	Topic	Points
F 1	Footprint reduction goal	6
F 2	Footprint measurement	8
F 3	Footprint change	10
F 4	Hazard assessment	3
F 5	Safer alternatives	6



DISCLOSURE & VERIFICATION (D) 20 points

#	Topic	Points
D 1	Chemical ingredients	8
D 2	CFP responses	3
D 3	CFP score	5
D 4	Verification	4

Key Performance Indicator- Chemical Footprint (Mass)



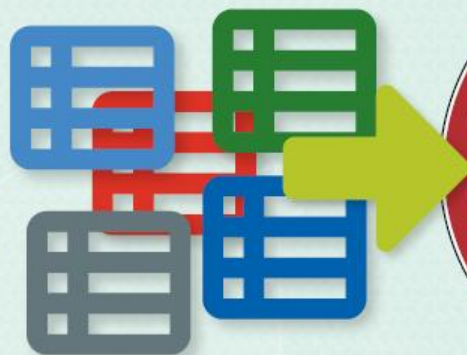
measures the production and use of chemicals of high concern to people and the planet.

Core definitions critical to measuring a chemical footprint is the definitions of: 1) “chemical of high concern (CoHC);” 2) “chemical footprint;” and 3) “chemical footprint of an organization”

**AUTHORITATIVE
LISTS**

**GREENSCREEN
BENCHMARK-1 CRITERIA**

**CFP CoHC
REFERENCE LIST**



e.g., EU REACH Substances of Very High Concern (SVHCs), California Proposition 65, International Agency for Research on Cancer (IARC)

Benchmark-1 Criteria - GreenScreen™ for Safer Chemicals (GreenScreen) – Recognized standard

Triclosan scored a GreenScreen Benchmark 1 – Avoid: Chemical of High concern

Group I Human						Group II and II* Human								Ecotox		Fate		Physical	
C	M	R	D	E	AT	ST		N	SnS*	SnR*	IrS	IrE	AA	CA	P	B	Rx	F	
						single	repeated*	single	repeated*										
L	L	M	M	M	vH	vH	M	DG	M	L	DG	H	H	vH	vH	H	H	L	L

C = carcinogen

SnR = respiratory sensitizer

M = mutagen

IrS = skin irritant

R = toxic to reproduction

IrE = eye irritant

D = developmental toxicant

AA = acute aquatic toxicity

E = endocrine disruptor

CA = chronic aquatic toxicity

AT = acute toxicity to humans

P = persistence in the environment

ST = systemic toxicity to humans

B = bioaccumulation

N = toxic to nervous system

Rx = reactive

SnS = skin sensitizer

F = flammability

Benchmark key		
Benchmark 4	Few concerns, i.e. safer chemical	Preferable
Benchmark 3	Slight concern	Improvement possible
Benchmark 2	Moderate concern	Use but search for safer substitutes
Benchmark 1	High concern	Avoid
Unspecified (U)	Insufficient data to assign a benchmark	

Table 1 – GreenScreen Benchmarks

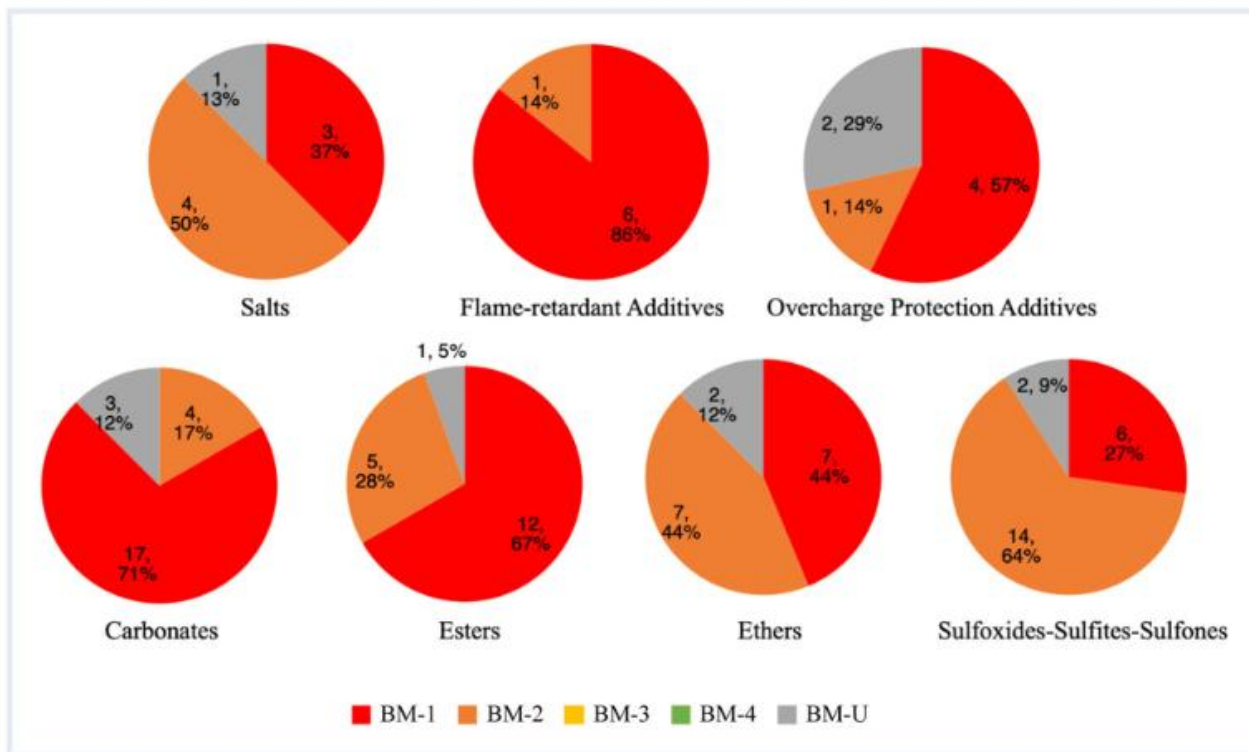


FIGURE 1 The GreenScreen-based benchmark results for the 103 electrolyte chemicals used in lithium-ion (Li-ion) batteries aggregated into seven chemical groups: salts, carbonates, esters, ethers, sulfoxides-sulfites-sulfones, overcharge protection additives, and flame-retardant additives

Chemical hazard assessment toward safer electrolytes for lithium-ion batteries (2025)
SETAC Journal – Integrated Environmental Assessment and Management

- The risk of a chemical is dependent on the hazard properties of that chemical and the probability of exposure to humans or environment;
- The probability is, however small, never zero;
- The safest alternative is therefore to minimize the hazard
- **No hazard means no risk.**

Chemical Footprint

2) a measure of the total mass of chemicals of high concern (CoHCs), used by an organization in its products, manufacturing processes, supply chains, or packaging.

3) It evaluates progress toward reducing these CoHC and replacing them with safer alternatives.

The concept is analogous to a carbon footprint but focuses on chemical toxicity and its impact on human health and the environment



Alignments KPIs

- Double materiality
- SASB Materiality metrics / Chemicals on the CFP CoHC Reference list are material
- GRI metrics and stakeholder centered approach
- Corporate Sustainability Reporting Directive's hazard based approach (EU)
- Advocate for integrating chemical material metrics with other critical concerns at corporate governance level (Biodiversity and Climate change)
- Alignment with the CSRD mandate for independent assurance on material chemical accounts

KPIs specific to Chemicals

- Existence of a comprehensive chemicals policy
- Materiality Assessment integration
- Integration of chemical safety into business strategy
- Setting of clear goals for reducing chemicals of high concern (CoHCs)
- Measuring the journey from reducing chemical footprints (mass) (to zero) and moving to safer chemicals

IN PRACTICE:

Our approach integrates assessments of transformation products, environmental fate, and persistence into a hazard assessment process.

This ensures a holistic understanding of a chemical's impact from production to disposal, reducing long-term risks to human health and the environment.



7th CFP REPORT

SIX KEY TAKEAWAYS

THE COMBINATION OF EMERGING TRENDS IN THE CHEMICAL FOOTPRINT APPROACH WITH DATA RESULTS FROM THE CFP 2023 SURVEY REVEALED SIX KEY TAKEAWAYS IN CHEMICALS MANAGEMENT LEADERSHIP.



USE THE
CHEMICAL
FOOTPRINT
APPROACH
TO ADDRESS
CHEMICAL
POLLUTION.



KNOW YOUR
CHEMICAL
FOOTPRINT.



BE A
FRONTRUNNER.



REDUCE
YOUR
CHEMICAL
FOOTPRINT.



GROW
SAFER
SOLUTIONS.



SHARE
YOUR
JOURNEY.



CHEMICAL
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