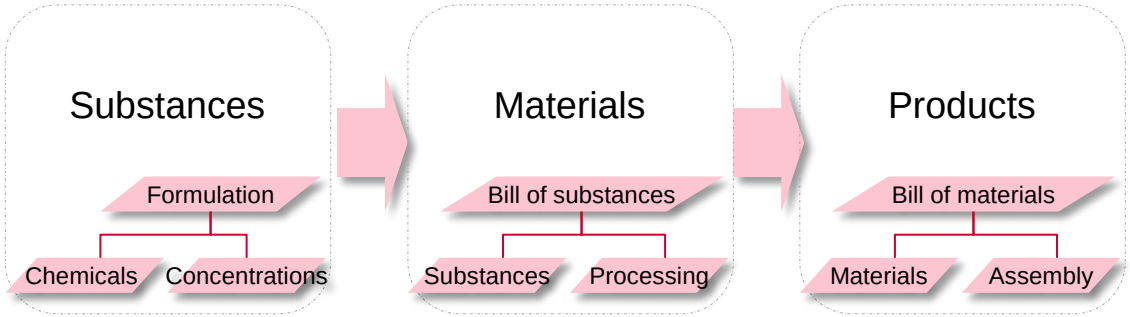
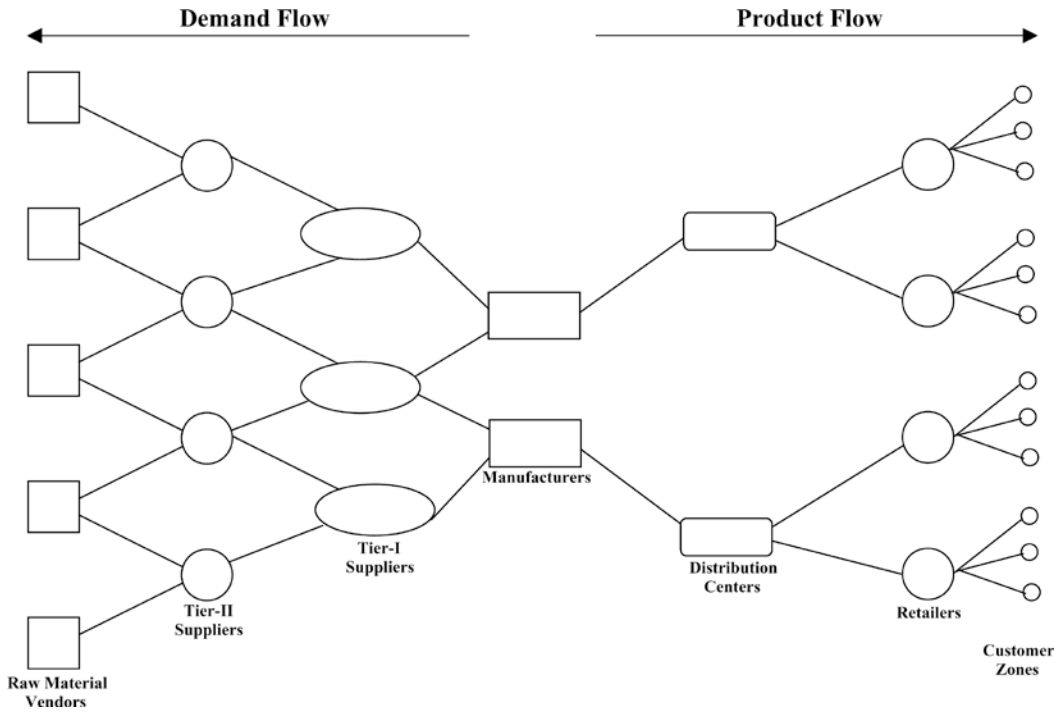
Measuring Progress: Tracking Chemical Use Through a Supply Chain

May 2013

The Challenges – Tracking Use

- Acquiring and integrating chemical use data
  - Most products are composites of materials manufactured by multiple companies
  - Most supply chains are multi-layered networks
  - End users typically lack visibility or direct business relationships with the source of materials used in their products

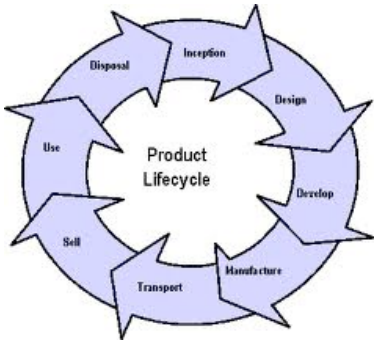




The Challenges – Defining Benchmarks

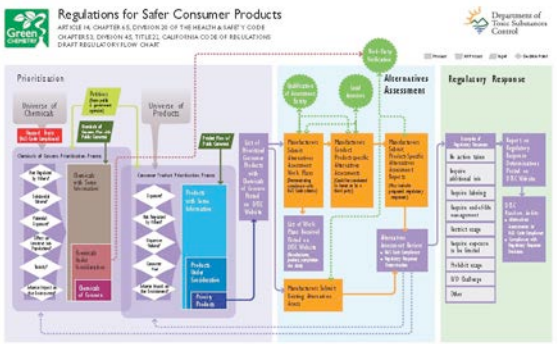
- Global supply chains require global regulatory data management

- Safe use is defined differently across the phases in a product's life cycle



- Constantly changing requirements

- Regulatory compliance alone is insufficient to avoid chemical surprises that damage a brand's reputation



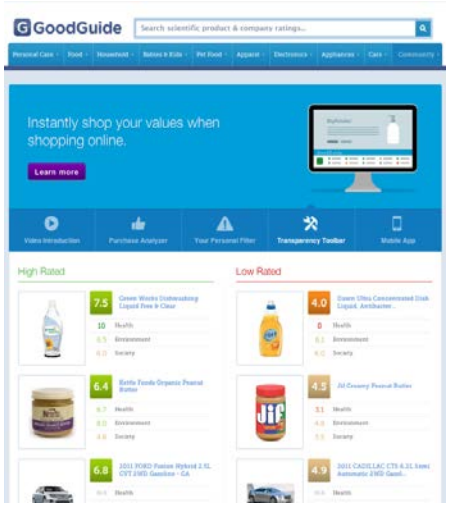
The Challenges – Ensuring Data Quality

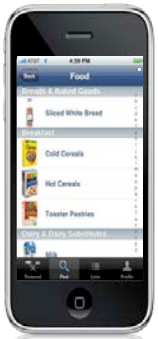
- Most chemical use data is self-reported by suppliers without verification
- Data quality largely “controlled” by business trust
- Testing to verify reported chemical compositions occurs infrequently
- Limited reliance on trusted third-parties to certify compliance with product quality standards
- End users in some markets are demanding that inputs only come from qualified materials lists in order to control supply chain risks

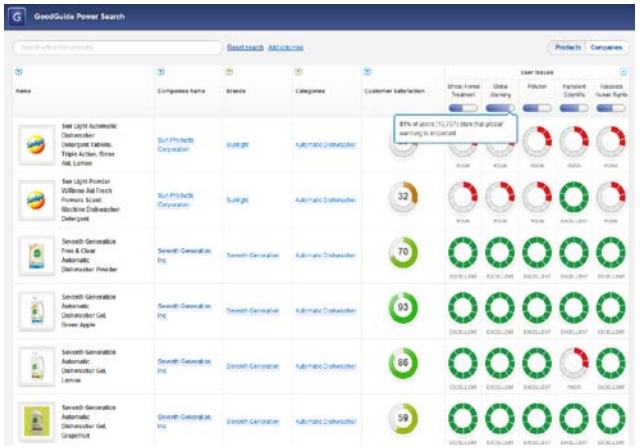
UL's Solution – The GoodGuide Supply Chain Transparency Platform

Consumer Services

Business-to-Business Services







Applications

APIs

Company, Product and Attribute Database

Informatics Tools: Entity Resolution & Data Acquisition

Science Tools: Evaluative Frameworks & Ratings Engine

Example: Public-Facing Scorecards

Do Specific Products Meet a Consumer's Preferences?

Example: Private Scorecards

Do Specific Products Meet a Retailer's Quality Standards?

GoodGuide Platform | CPG Retail Buyer | Bill

CPG RETAIL BUYER

Search

Filter | Import / Export

PRODUCTS | INGREDIENTS

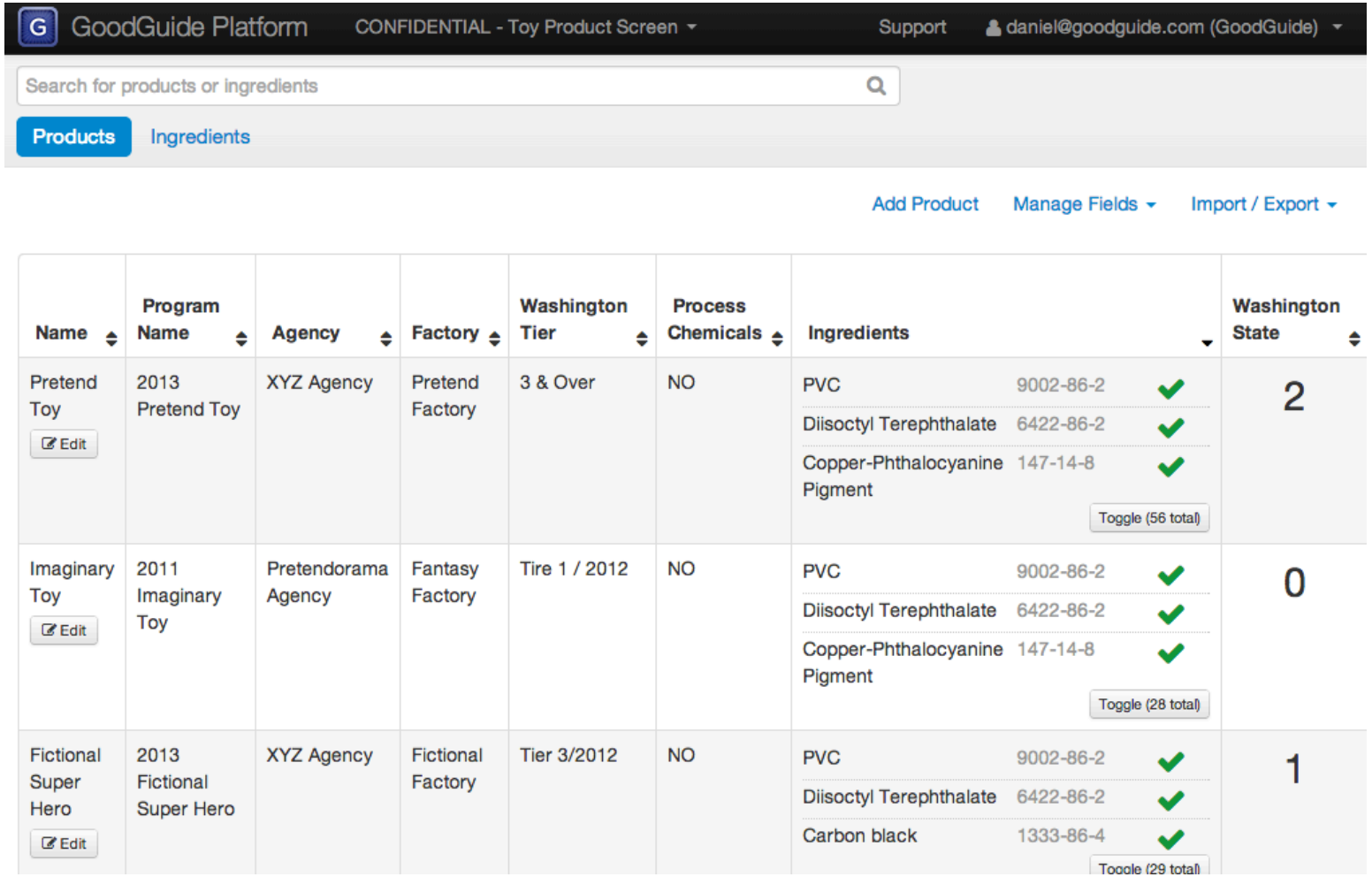
IMAGE	NAME	OVERALL	BRAND	VENDOR	RED INGREDIENTS	GRAY INGREDIENTS	YELLOW INGREDIENTS	HEALTH	PACKAGING	NO ANIMAL TESTING	INGREDIENTS
	Method Dish Soap, Cucumber	✓+	Method	Method Products, Inc.	0	1	0	✓	✓+	✓	Sodium Lauryl Sulfate, fragrance oil blend, alkyl polyglucoside, lauramine oxide, alcohol, vegetable glycerin, citric ac...
	Up & Up Biodegradable Dish Soap, Lavender Scent	✓	Up & Up	Target Corporation	0	2	0	✓	✓	✓	Sodium Lauryl Sulfate, Methylisothiazolinone, Fragrance, Sodium Xylenesulfonate, Lauramidopropylamine Oxide, Alcohol Den...
	Method Lemon Mint Dish Soap 18-oz.	✓+	Method	Method Products, Inc.	0	1	0	✓	✓+	✓	Sodium Lauryl Sulfate, fragrance oil blend, alkyl polyglucoside, lauramine oxide, alcohol, vegetable glycerin, citric ac...
	Ajax Antibacterial Orange Dish Liquid 34-oz	!	Ajax	Colgate-Palmolive Company	0	1	0	✓	✓	!	Fragrance, Ammonium C12-C15 Pareth Sulfate, Lauramidopropylamine Oxide, SD Alcohol 3-A, Sodium Chloride, Dyes, Water, Pr...

Example: Supply Chain Materials Management

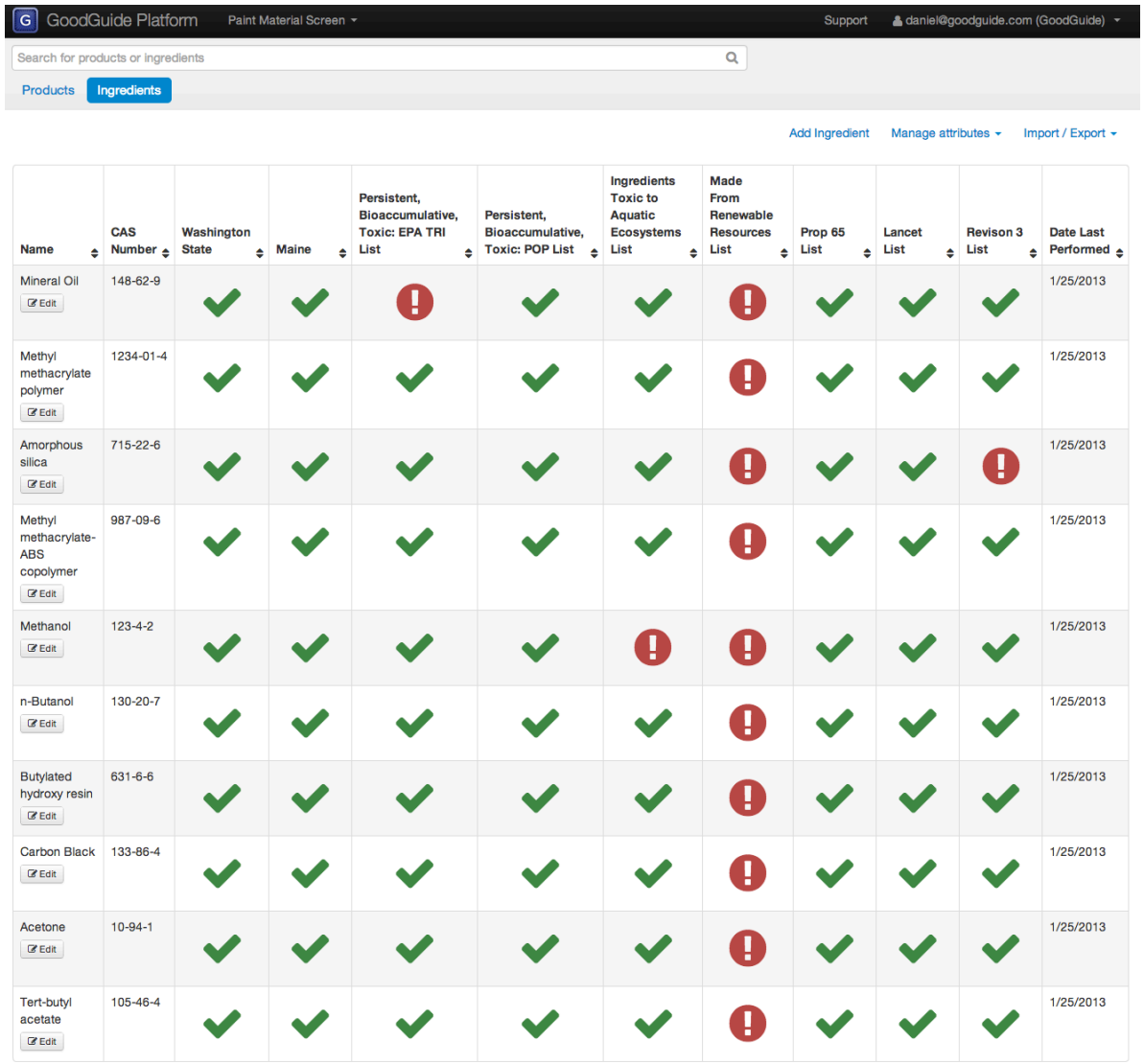
Controlling Whether Suppliers Introduce Chemical Risks

- Platform utilized to gather, analyze, and present chemical-related attributes of products in a decision-support interface
  - Does a product contain chemicals that trigger regulatory or consumer notification requirements?
  - Does the composition of a product comply with a manufacturer's or retailer's Restricted Substances list?
- Support client-customizable screening/rating systems for comparing the chemical / materials performance of products and vendors to inform buying decisions
- Establish a supply chain hub
  - Suppliers contribute data on their products to support evaluation by purchasers
  - Purchaser conveys its materials management policies down into its supply chain

Suppliers Provide Data on Material Composition of a Product

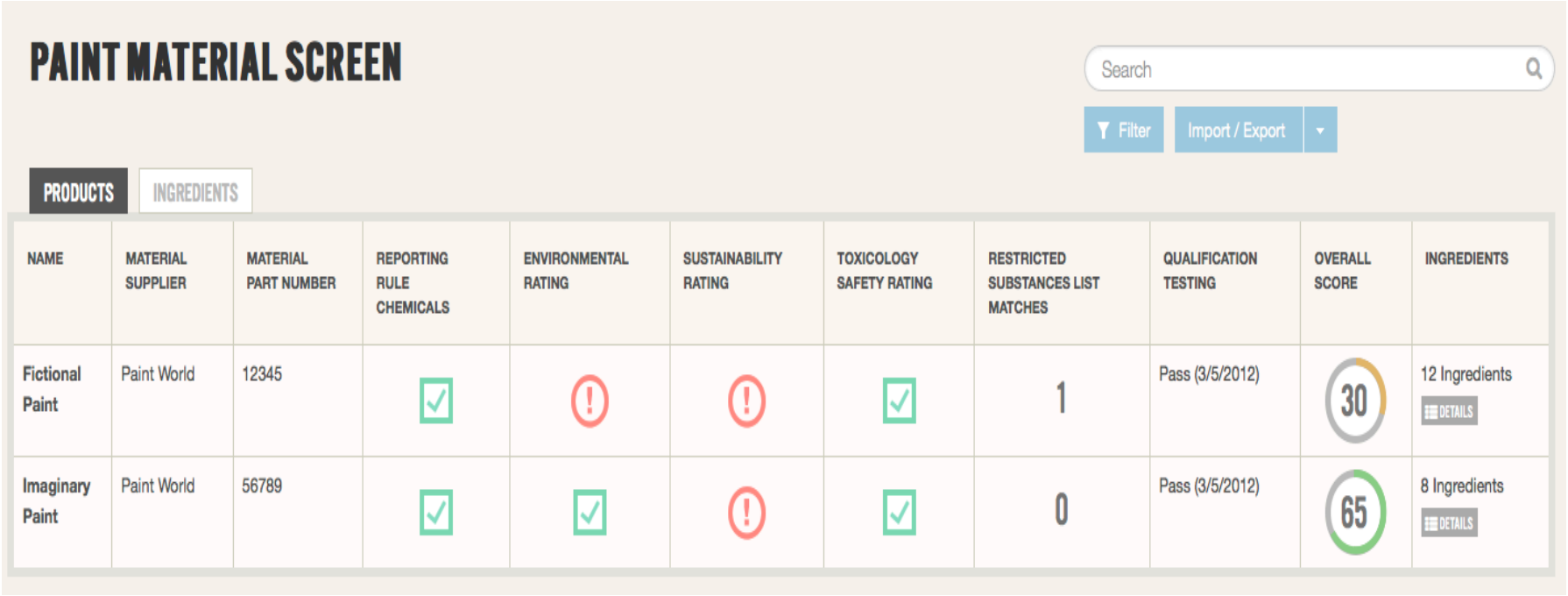


End User Checks Product's Full Ingredient List Against Applicable Chemical Standards



Name	CAS Number	Washington State	Maine	Persistent, Bioaccumulative, Toxic: EPA TRI List	Persistent, Bioaccumulative, Toxic: POP List	Ingredients Toxic to Aquatic Ecosystems List	Made From Renewable Resources List	Prop 65 List	Lancet List	Revison 3 List	Date Last Performed
Mineral Oil Edit	148-62-9	✓	✓	!	✓	✓	!	✓	✓	✓	1/25/2013
Methyl methacrylate polymer Edit	1234-01-4	✓	✓	✓	✓	✓	!	✓	✓	✓	1/25/2013
Amorphous silica Edit	715-22-6	✓	✓	✓	✓	✓	!	✓	✓	!	1/25/2013
Methyl methacrylate-ABS copolymer Edit	987-09-6	✓	✓	✓	✓	✓	!	✓	✓	✓	1/25/2013
Methanol Edit	123-4-2	✓	✓	✓	✓	!	!	✓	✓	✓	1/25/2013
n-Butanol Edit	130-20-7	✓	✓	✓	✓	✓	!	✓	✓	✓	1/25/2013
Butylated hydroxy resin Edit	631-6-6	✓	✓	✓	✓	✓	!	✓	✓	✓	1/25/2013
Carbon Black Edit	133-86-4	✓	✓	✓	✓	✓	!	✓	✓	✓	1/25/2013
Acetone Edit	10-94-1	✓	✓	✓	✓	✓	!	✓	✓	✓	1/25/2013
Tert-butyl acetate Edit	105-46-4	✓	✓	✓	✓	✓	!	✓	✓	✓	1/25/2013

Chemicals Are Only One Dimension of Sustainable Production Platform Is Easily Extensible to Any Product Attribute



The Future of Materials Management and Implications for Green Chemistry

- Emergence of transparency hubs capable of collecting detailed chemical composition data for materials and products along entire supply chain
- Deployment of software systems capable of enforcing purchaser chemical disclosure and use policies on suppliers
- These developments create an infrastructure that enables pursuit of the following opportunities:
  - Eliminating bad actor chemicals down through a supply chain – without needing to rely on regulatory compliance as the driver
  - Integrating preferred chemical/approved materials selection capabilities into the initial phases of a product's life cycle and to the lowest tiers of supply chains

THANK YOU!

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