Enabling innovation in automotive supply chain products through a common chemical assessment and management strategy

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Suppliers Partnership for the Environment

Suppliers Partnership Overview

- 2002---Formation of the Suppliers Partnership for the Environment (SP)
  - Bring auto manufacturers (OEMs) and suppliers together, in partnership with the US EPA to focus on environmental opportunities
- 2007---SP launches the development of a Material Assessment Strategy (MAS)
  - Goal - to develop a common screening process for assessing and prioritizing potential health and environmental impacts of chemicals in parts

SP MAS Development Team

HONDA

HYUNDAI KIA MOTORS

SUBARU

Unmet Need

Companies have a growing need to make proactive decisions about the materials in their products based on better chemical assessment information.

Key Requirements

(1) Address chemicals in vehicle materials
(2) Reliable, understandable and actionable output
(3) Cost-effective
(4) Solid science using accepted methodologies
(5) Protect proprietary business information

Drivers of the Need

Regulations
UNEP/CEPA/REACH/
RoHS/TSCA/States

Stakeholders
Advocacy groups, investor groups, etc.

Globalization
Distributed supplier networks
Complex ingredient info

Customers
Concerns about chemicals in products

Competition
Stewardship, innovation, “green” product lines

- New pressures toward chemical risk assessment
- Ongoing trends that underscore business risk
- Urgent need for robust chemical tracking
- Clearer metrics and communication
- Unified framework for efficiency of review

Current Chemical Assessment Options

Existing manual and automated services do not meet needs for affordability, scalability or flexibility.

MANUAL - In-house Staff or Consultants

- Skilled labor-intensive
- Inconsistent
- Expensive
- Inefficient

SOFTWARE - Compliance-based Applications

- List-driven
- Compliance derived
- Less-flexible
- Hazard-based (not in context of use)
- Worker safety orientation (vs. consumer orientation)

Auto Industry Background

International Material Data System (IMDS)

- 71,070 registered companies
- Approximately 178,000 registered users
- > 25,000,000 Material Data Sheets (MDS)
  - Each MDS represents an assembly
  - Includes material and substance information for complete assembly, including sub-assemblies and parts

Challenges

Assessment of articles* represents a new paradigm for most companies in the auto sector and elsewhere.

- Manufacturers of articles are not chemical companies
- Limited or no toxicological expertise
- They are used to considering chemicals in formulations, but not articles
- Outside of the auto sector - they generally do not receive information on the chemical substances used in the materials

*OSHA and US EPA define “articles” as an object that during production is given a special shape, surface or design which determines its function to a greater degree than its chemical composition.

Key Process Characteristics

- Be practical and scientifically valid, yet easy to use - enabling all suppliers to participate
- Protect confidential data, yet share relevant risk assessment information
- Based on existing tools, systems and frameworks
  - US EPA Sustainable Futures Tools, etc.
- Allow for flexibility - type of product, level of expertise, etc.
- Consider both toxicity and potential for exposure in the particular application (risk)
- Could/would be overseen by a neutral, third party
    - For credibility
    - For protection of Confidential Business Information
- Accepted by NGOs and governments

Current Status

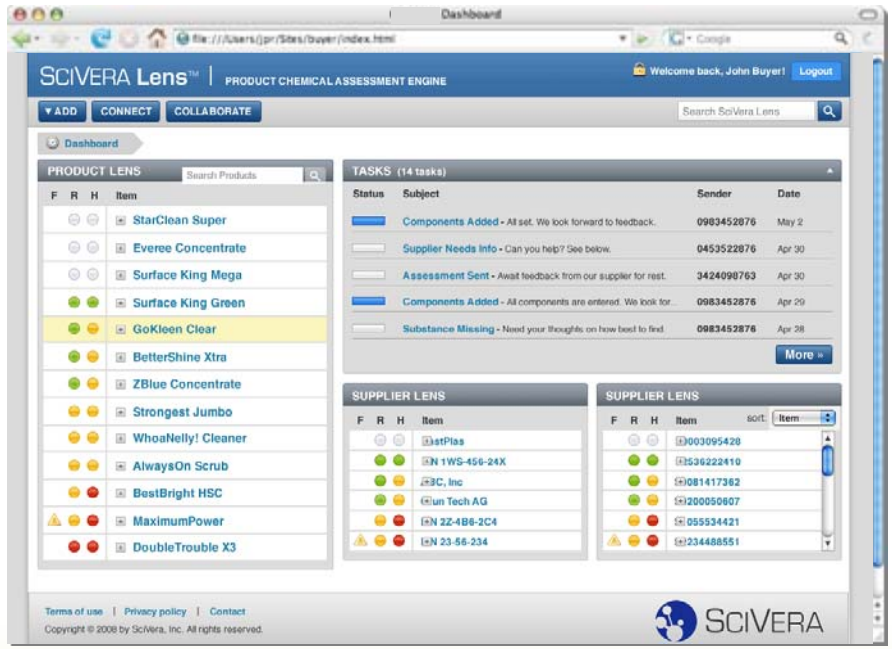
- MAS Program Guidelines complete
  - Hazard & Dose Response Assessment Guidelines
  - Exposure Assessment Guidelines
  - Risk Assessment Guidelines
  - Business Process Management Guidelines
- Separate effort underway to automate process
  - Subset of companies working with Science Strategies, LLC & SciVera, Inc.
  - Piloting and optimization
- Implementation
  - Voluntary - company-specific approach
- www.supplierspartnership.org

Risk Assessment Automation

Automated product chemical risk assessment changes the landscape of how and when companies can review product chemical toxicology for prioritizing action.

Key Functions

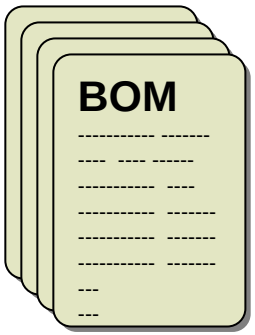
- Web-based, cost-effective, actionable review of product ingredients
- Scaled access to expert judgment on chemical data
- Automated risk assessment prioritizes product action



SciVera Lens™ Information Flow

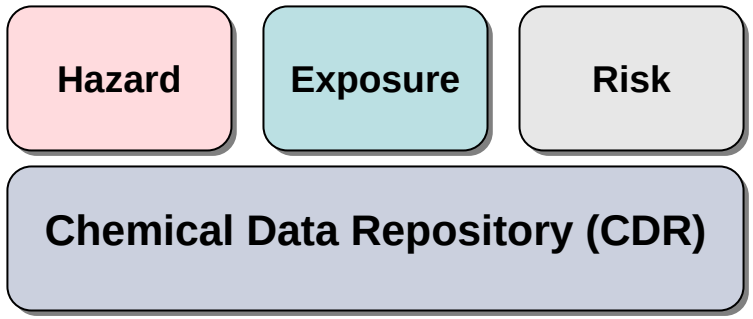
SciVera Lens™ processes an innovative combination of subscriber product data, aggregated chemical knowledge and assessment algorithms.

Subscriber Product Data



- Secure FTP import
- Supplier connectivity
- Proprietary info protection

SciVera Lens™ Data Integration and Algorithm Processing



- Product ingredients matched w/CDR data
- Risk assessment processed via SciVera exposure scenarios
- Unique and valuable product insight

SciVera Lens™ Dashboard

- Hazard score
- Risk score
- Supplier/Product Map
- “What if” planning

Importance of MAS to GM

It is all about improving Product Stewardship and Sustainability of our vehicles, increasing customer satisfaction.

If the MAS process and SciVera Lens™ is expanded to all of our suppliers, it will:

- Level the playing field thru-out the supply base
- Allow for a more proactive and comprehensive assessment of chemicals
- Provide much more valuable assessment information to supplement basic lists of constituent chemicals

Importance of MAS Program to Lear

- **INNOVATION --** We are interested in innovative ways to identify opportunity to improve the health, safety and ecological impact of our products.

- **INFORMATION PROTECTION --** The MAS process and SciVera tool provides a means to engage our supply base more effectively in an assessment of chemicals in a format that is revealing yet protects formulation propriety.

- **COLLABORATION --** The process creates an improved environment for collaborative efforts to minimize or eliminate potential hazards and contribute to market-driven competitive momentum toward environmentally friendly material implementation.

Summary & Proposal

(1) Sector approach to Sound Management of Chemicals is possible and critical
(2) North American auto industry is well-positioned for innovation in chemicals management
(3) Work can build on existing achievement (SP MAS)
(4) Support from CEC is critical to broad implementation of MAS

Thank you

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