

B-2-B Communication of Chemical Data Along Supply Chains



TUR Planner Continuing Education Conference
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www.monicabecker.com



Overview of Presentation:

1. Issues in B-2-B communication of chemical data along supply chains
2. Projects in the Green Chemistry & Commerce Council (GC3) to advance chemical data availability in supply chains



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“For companies in a supply chain, supply chain security is a constant concern. When a manufacturer has confidence in a particular supply chain, it can grow its business around it.”

Homer Swei, Johnson & Johnson

Chemical Data & Supply Chain Management

As a manufacturer/brand, a critical element of good supply chain management is having reliable information about the chemicals in the formulations, materials and products that you purchase from your suppliers.

Companies in supply chains need this “**chemical information**” for a variety of reasons, including:

- regulatory compliance
- responding to customer requests
- green product design efforts (DfE or TUR)
- green product certification
- chemical disclosure initiatives

Types of Chemical data - At least 4 categories:

1. Chemical identification

Chemical name, trade name, and CAS number of chemical ingredients in an article or chemical mixture, which may include known impurities.

2. Chemical function

Function of a chemical ingredient in an article or chemical mixture (e.g. plasticizer, anti-bacterial agent, residual monomer, etc.).

3. Human/Ecological hazard

Human health and ecotoxicological characteristics of chemical ingredients , as well as their physical safety properties such as flammability.

4. Exposure potential

Potential for human or environmental exposure to chemical ingredients in an article or chemical mixture.

Q. Why do companies need chemical data from their suppliers?

A. For regulatory compliance

Example: HP's Supplier Questionnaire for REACH SVHC Data



Supplier Data Request Form
Version 6.0 (SVHC Candidate List #5)
* required

Substances of Interest	CAS # (where available)	Alternate ID (EC #) (where available)	Weight (grams) * (up to 3 decimal places)	Description of Use (max field length=65)	ECHA Substance List	Other HP Req'd
1,2,3-trichloropropane	96-18-4	202-486-1			X	
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	276-158-1			X	
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	271-084-6			X	
2-Ethoxyethyl acetate; ethylglycol acetate	111-15-9	203-839-2			X	
Hydrazine, anhydrate	302-01-2	206-114-9			X	
Hydrazine, hydrate(s)	7803-57-8				X	
N-methyl-2-pyrrolidone; 1-methyl-2-pyrrolidone	872-50-4	212-828-1			X	
Strontium chromate	7789-06-2	232-142-6			X	

Q. Why do companies need chemical data from their suppliers?

A. To respond to customer requests for chemical information



Quality - Eco-Info & Lead-free (Pb-free):Materials Declaration

This search tool will help you quickly locate Pb-Free (RoHS) and Green material content details as well as conversion dates and available supply dates. The results can be downloaded to an Excel file and will include TI's signed Material Declaration Certificate.

[Disclaimer](#)

Single Part Number Search

1. TI Part Number
Partial part numbers allowed

2. Limit Results to

Example: Texas Instrument's Chemical Data Portal for Customers

Component Information						
Component	Substance	CAS Number	Amount (mg)	Homogeneous Material Level		
				Percentage %	ppm	
Bond Wire						
Other Nonferrous Metals and Alloys	Calcium	7440-70-2	0.000003	0.0023	22	
Other Nonferrous Metals and Alloys	Copper	7440-50-8	0.000922	0.7000	6999	
Precious Metals	Gold	7440-57-5	0.130462	99.0472	990471	
Precious Metals	Platinum		0.000329	0.2498	2497	
Precious Metals	Silver	7440-22-4	0.000001	0.0008	7	
Sub-Total			0.131717	100	1000000	
Die Attach Adhesive						
Precious Metals	Silver	7440-22-4	0.156339	79.0002	790001	
Thermosets	Epoxy		0.041558	20.9998	209998	
Sub-Total			0.197897	100	1000000	
Lead Frame						
Copper & Its Alloys	Copper	7440-50-8	40.174173	97.4250	974250	
Copper & Its Alloys	Iron	7439-89-6	0.989664	2.4000	24000	
Copper & Its Alloys	Phosphorus	7723-14-0	0.006185	0.0150	149	

Q. Why do companies need chemical data from their suppliers?

A. To evaluate chemical content & EH&S attributes for product design and formulation

SUPPLIER QUESTIONNAIRE

EPEA

Example: Method's Supplier Questionnaire



INGREDIENT AND COMPONENT DETAIL
Specific information about the material input

6) INGREDIENT / COMPONENT / CHEMICAL DETAIL

INGREDIENTS
(INCL. ADDITIVES AND PIGMENTS, RESIDUAL MONOMERS)

CAS No¹ / C.I.² / EC No³ %

a) <input type="text"/>	<input type="text"/>	<input type="text"/>
b) <input type="text"/>	<input type="text"/>	<input type="text"/>
c) <input type="text"/>	<input type="text"/>	<input type="text"/>
d) <input type="text"/>	<input type="text"/>	<input type="text"/>
e) <input type="text"/>	<input type="text"/>	<input type="text"/>
f) <input type="text"/>	<input type="text"/>	<input type="text"/>
g) <input type="text"/>	<input type="text"/>	<input type="text"/>
h) <input type="text"/>	<input type="text"/>	<input type="text"/>
i) <input type="text"/>	<input type="text"/>	<input type="text"/>
j) <input type="text"/>	<input type="text"/>	<input type="text"/>
k) <input type="text"/>	<input type="text"/>	<input type="text"/>

Composition completely listed
(including all additives, pigments, etc)

Composition not completely listed.

Please list reason:

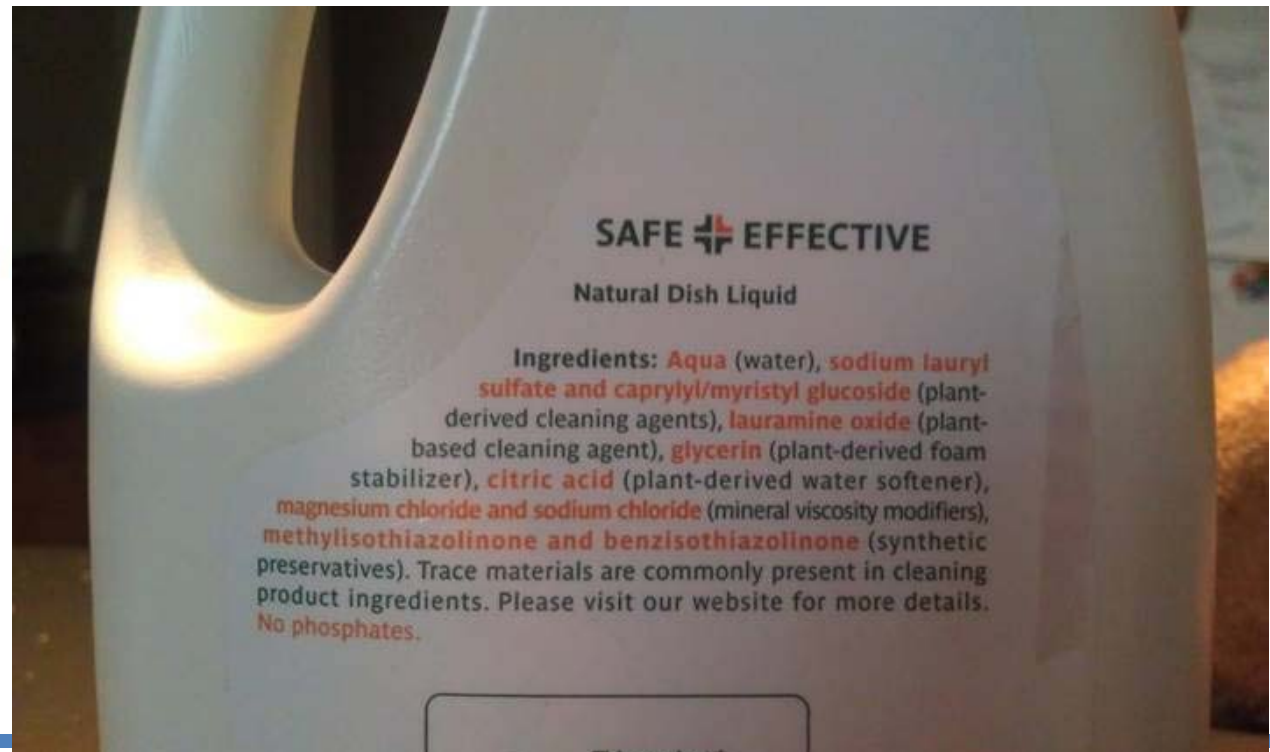
8) TOXICOLOGICAL DATA (ONLY IF AVAILABLE)

CARCINOGENICITY	<input type="text"/>
MUTAGENICITY	<input type="text"/>
REPRODUCTIVE TOXICITY	<input type="text"/>
DEVELOPMENTAL TOXICITY	<input type="text"/>
ENDOCRINE DISRUPTION POTENTIAL	<input type="text"/>
ACUTE TOXICITY	<input type="text"/>
CHRONIC TOXICITY	<input type="text"/>
IRRITATION POTENTIAL	<input type="text"/>
SENSITIZATION POTENTIAL	<input type="text"/>

Q. Why do companies need chemical data from their suppliers?

A. Voluntary efforts to disclose chemical ingredients to customers.

Example: Seventh Generation's Full Ingredient Disclosure



Why aren't MSDSs sufficient?

Shortcomings of MSDSs:

- Insufficient ingredient information
- Insufficient hazard and toxicity information

SECTION 2 – COMPOSITION / HAZARDOUS INGREDIENTS	%	TLV	PEL	UNITS
PRODUCT CONSISTS OF:				
Calcium Carbonate ** (1317-65-3)	< 50	10	15	mg/m3
Acrylic Emulsion (mixture)	< 35	NE	NE	
Benzoate Ester (proprietary)	< 5	NE	NE	
Ammonium Hydroxide (7664-41-7)	< 0.25	25	50	ppm

SECTION 12 – ECOLOGICAL INFORMATION

Non-hazardous ingred **AQUATIC TOXICITY** Not known or expected under normal use.

*Unlisted ingredients

1910.1200). **Inhalation not likely due to products physical state.

Calculated VOC: < 0.5%/wt (< 7 g/L). CARB Compliance: Yes. Prop 65 Ingredients: Yes (See Section 16)

Why aren't MSDSs sufficient?

Shortcomings of MSDSs (cont.)

- MSDSs are designed to provide information to protect the health and safety of workers. Doesn't satisfy all needs for chemical data.**
- MSDSs not written or reviewed by government agencies and may have inaccuracies**
- MSDSs are typically not provided for articles**
- When a manufacturer/brand is dealing with thousands of products, materials, chemicals, MSDSs do not support a system of that scale.**

What if a supplier doesn't want to disclose their chemical content information?

There are mechanisms that can be used to protect IP and share data:

- Provide data under a non-disclosure agreement (NDA)
- Provide data to a third party under an NDA. The third party can evaluate the data and provide sanitized information to the customer to verify that the chemical or product meets regulatory or other requirements specified by the customer.

Mechanisms that can be used to protect IP and share data

Example:

method.

Method uses a third party reviewer to evaluate all chemical ingredients for safety prior to their selection. For a product formulation. In cases when the supplier does not want to reveal the formulation, the supplier sends the data directly to the third party under an NDA.



Mechanisms that can be used to protect IP and share data

Example:



Seagate requires that its suppliers provide full chemical content data on all parts and products supplied. Seagate enters into NDAs with suppliers and keeps data confidential within Seagate data systems.



Association Connecting Electronics Industries

+I	-I	Item/Subitem Name	+M	-M	Homogeneous Material	Weight	Unit of Measure	Level	Substance Category	Substance	CAS	Exempt	Weight	Unit of Measure	Tolerance		PPM
															-	+	
		1 Euro Coin			Ring	3.79	kg	+C -C B	Nickel (external app)	Nickel	7440-02-0		0.1895	g			
								+C -C Supplier	Zinc	Zn	7440-66-6		0.758	g			
								+C -C Supplier	Copper	Cu	7440-50-8		2.8425	g			
					Centre Core	3.71	g	+C -C B	Nickel (external app)	Nickel	7440-02-0		3.71	g			
		2 Euro Coin			Ring	4.4	g	+C -C B	Nickel (external app)	Nickel	7440-02-0		0.22	g			
								+C -C Supplier	Zinc	Zn	7440-66-6		0.88	g			
								+C -C Supplier	Copper	Cu	7440-50-8		3.3	g			
					Centre Core	4.1	g	+C -C B	Nickel (external app)	Nickel	7440-02-0		4	g			



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 - Overview of the GC3
 - Projects on chemical data



What is the GC3?

A cross sectoral, B-2-B network of more than 60 companies and other organizations formed in 2005 with a mission to promote green chemistry and design for environment (DfE), nationally and internationally





What is the GC3? (cont.)

A dynamic forum for leading edge companies to:

- **Share best practices and push the frontier of business practices that promote green chemistry**
- **Work collaboratively on projects to develop new business strategies, technologies, tools and information**





Who Runs the GC3?

- The Lowell Center for Sustainable Production (LCSP) at the University of Mass. Lowell
- Executive Director – Dr. Joel Tickner
- 2 Full-time Staff and Contractors





How does the GC3 Work?

- Advisory Board
- Membership dues
- Project groups that meet by teleconference to work on projects that further the mission of the GC3
- Annual Meeting

2012 @ NSF International, Ann Arbor, MI

May 9 – 11!



GC3 Members

Chemical/Specialty Chemicals

Alpha Chemical Service, Inc.
BASF Corporation
Bayer MaterialScience LLC
The Dow Chemical Company
Kluber Lubrication
The HallStar Company
Hubbard Hall
ACS Green Chemistry Institute
Diversey
DuPont
ecoSolv Technologies, Inc.
Rivertop Renewables

Apparel & Footwear

Anvil Knitwear
Nike, Inc.

Retail

Walmart
Staples
Target
Green Depot

Outdoor Industry

REI

Consumer Products

Avon Products, Inc.
Johnson & Johnson
Henkel/Dial
Method Products, Inc.
Seventh Generation, Inc
Colgate-Palmolive Company

Office Furniture

Steelcase
Herman Miller
Designtex

Building Products

Construction Specialties

Aerospace

Lockheed Martin

Electronics

Bose Corporation
HP
Intel
Dell
EMC Corporation

Pharmaceutical

BWC Pharma Consulting



GC3 Members

Software

Actio Software
The Wercs

Product Standards & Certification

Bureau Veritas
Green Seal
EPEAT, Inc.
NSF International

Consulting

Inside Matters
Pure Strategies
ToxServices, LLC
Environmental and Public Health
Consulting
Daley International
Sustainable Research Group

Government

Minnesota Pollution Control Agency
Environmental Protection Agency
German Federal Environment Agency
Mass. Toxics Use Reduction Institute
Washington State Department of Ecology

Non Governmental Organizations

Investor Environmental Health Network
Center for Environmental Health
Clean Production Action
Cradle to Cradle Products Innovation Institute
GreenBlue
Environmental Health Fund
Pacific Northwest Pollution Prevention Resource
Center



Current Projects

- 1. Facilitating Chemical Data Flow Along Supply Chains**
- 2. Retailer engagement to advance safer chemicals and products**
- 3. Business and Academic Partnerships for Safer Chemicals: “The Plasticizer Project”**
- 4. Green Chemistry Higher Education**



Publications & Other Resources

Meeting Customers' Needs for Chemical Data

A guidance document for suppliers

MOVING BUSINESS TOWARD SAFER ALTERNATIVES



GC³ Green Chemistry & Commerce Council

Moving Business Toward Safer Alternatives

Home About GC3 Projects Events Publications Retailer Portal

RETAILER PORTAL DATABASE

Tools to Evaluate Chemical Ingredients in Products

Key: Restricted Substances Lists Standards, Certifications & Labels Third-party Evaluation Tools

Apparel & Footwear

Tools relevant to this product sector	Restricted Substances Lists (RSLs) e.g., AAFA RSL, ETAD	bluesign®	EcoLogo	Global Organic Textile Standard (GOTS)	Oeko-Tex® Standard 100	Outdoor Industry Association (OIA) Eco Index Beta
Tools relevant to all product sectors	Cradle to Cradle® Certification	3E Green Product Analyzer™ (GPA)	Actio Material Disclosure	Chemical Compliance Systems (CCS) Tools	GreenWERCSTM	IHS Chemical Inventory Greening Solutions

Automotive

Tools relevant to this product sector	Restricted Substances Lists (RSLs) e.g., GADSL	EcoLogo	EPA Design for Environment (DfE) Safer Product Labeling Program	Green Seal		
Tools relevant to all product sectors	Cradle to Cradle® Certification	3E Green Product Analyzer™ (GPA)	Actio Material Disclosure	Chemical Compliance Systems (CCS) Tools	GreenWERCSTM	IHS Chemical Inventory Greening Solutions

Building Materials & Products

Tools relevant to this product sector	Restricted Substances Lists (RSLs)	EcoLogo	Greenguard	Green Seal	SMArT® 4.0 Sustainable Product Standard	Pharos Project
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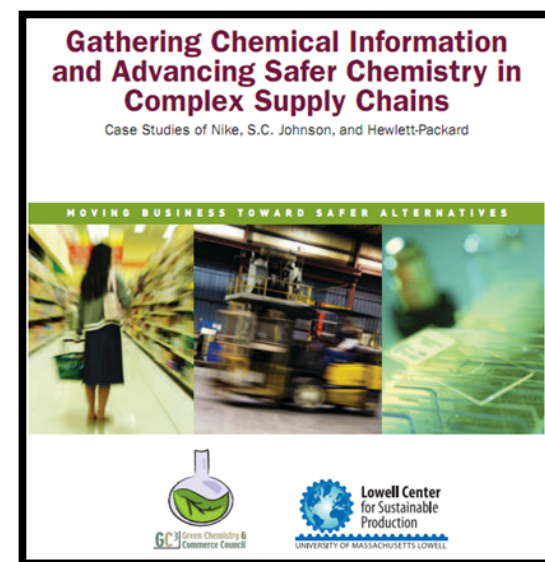


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GC3 Chemical Data Working Group History

- 2007 Tools for chemical assessment
- 2008 Report on Restricted Substances Lists (RSL)
- 2009 In-depth case studies of **Nike, HP and SC Johnson** on:
- Gathering chemical data from supply chains
 - Use of chemical data to develop safer products



Documents available at: <http://www.greenchemistryandcommerce.org/publications.php>

2010

“Meeting Customers’ Needs for Chemical Data: A guidance document for suppliers”

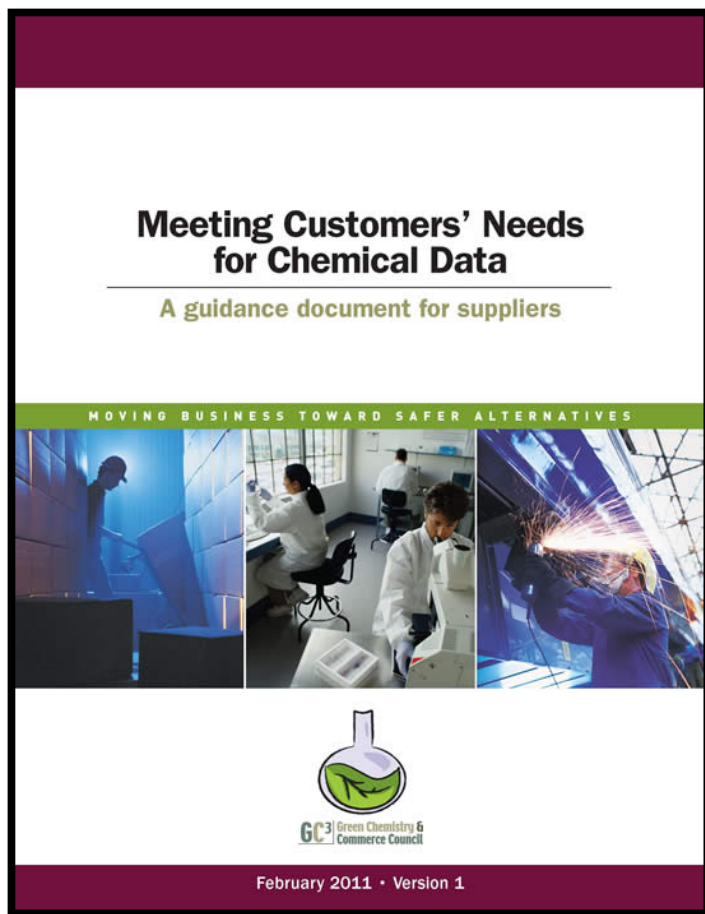
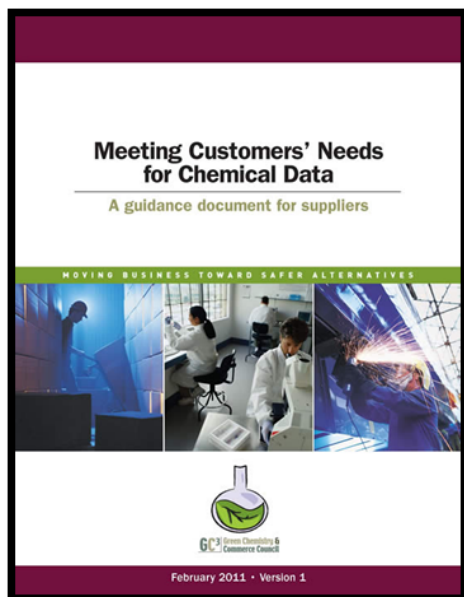


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2010

“Meeting Customers’ Needs for Chemical Data: A guidance document for suppliers”



APPENDIX D-2

Industry Sector Initiatives to Streamline Chemical Data Collection

The following sector-based initiatives are profiled here:

1. Electronics Industry—JIG, IPC-1752
2. Automotive Industry—GADSL, IMDS
3. Personal Care Products Council Supplier Questionnaire
4. American Textile Manufacturers Institute (ATMI) Voluntary Product Environmental Profile (Supplier Questionnaire)
5. Apparel and Footwear—AAFA Restricted Substances List
6. ANSI/BIFMA e3-2010 Furniture Sustainability Standard
7. Global Data Synchronization Network (GDSN)

1. Electronics Industry—JIG, IPC-1752

Joint Industry Guide for Material Composition Declaration for Electronics Products (JIG)

A workgroup composed of electronics industry representatives developed the JIG to promote consistent and standardized material declaration requests across the global supply chain. The JIG contains lists of materials and substances for disclosure; threshold levels for reporting; regulatory requirements establishing reporting thresholds; and recommended data fields. Three criteria determine whether substances need to be declared: Criteria 1—R (Regulated)—substances that are prohibited or restricted by regulation or require labeling; Criteria 2—A (Assessment)—substances that are likely to be subject to enacted legislation; and Criteria 3—I (Information) unregulated substances where there is a recognized market requirement for reporting their content. Thresholds for substance/material reporting are governed either by regulations for regulated substances. When a substance is restricted by law but no threshold is specified, “intentionally added” acts as threshold. For Criteria 3—I substances, the default threshold is 0.1% (1000 ppm) by weight of product. See: http://www.ce.org/PDF/JIG_101_Ed_3_1_final_100913.pdf

IPC-1752

Materials Declaration Management Standard (IPC—Institute for Printed Circuits) established standardized material declaration forms and electronic data exchange formats to facilitate electronic reporting for suppliers and customers along the electronics supply chain. See: http://members.ipc.org/committee/drafts/2-18_d_Materials_DeclarationRequest.asp

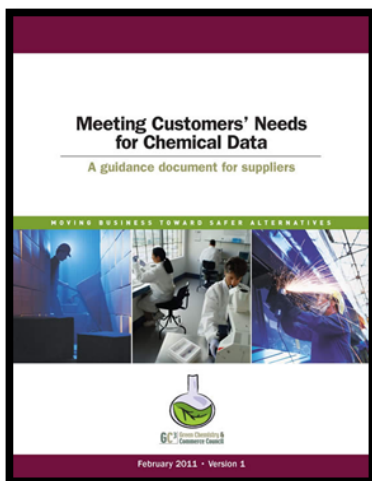
2. Automotive Industry—GADSL, IMDS

Global Automotive Declarable Substances List (GADSL)

GADSL was created by the Global Automotive Stakeholders Group (GASC), comprising automakers, parts suppliers and chemical/plastics industries. The list currently includes 139 “declarable” or “prohibited” substances or families of substances (e.g. lead and its compounds) that are expected to be present in a vehicle at the point of sale. It does not cover substances used during manufacturing processes. There are two categories of substances:

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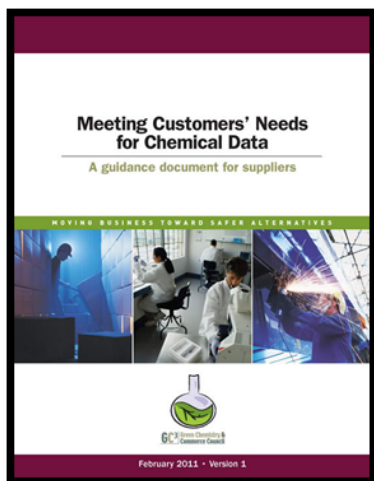
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APPENDIX D-3

Software for Collecting and Reporting Chemical Data to Customers

A chemical data management system can be a valuable tool for handling data collection and reporting requirements. Listed below are examples of commercial software systems.

1. WercsHELP

WercsHELP is a software tool that allows companies to track and assess Ingredients in products, as well as regulatory implications of those Ingredients. Several retailers, such as Sears and Walmart, now require chemical product suppliers to provide information on intentionally added Ingredients to WercsHELP. WercsHELP keeps the formulation data confidential, but lets retailers know whether the products are regulated under federal or state environmental laws, and how they should be handled and disposed of. See www.wercsmart.com/wercs.html

2. Material Disclosure Software from Actio Corporation

Actio Chemical Management software is designed to allow suppliers and manufacturers to automate communications and their chemical-substance data management. Actio software automates supplier efforts and funnels related data into a unique, secure, central database. Both suppliers and manufacturers quickly become compliant with regulations, directives and standards relevant to their needs—such as REACH, RoHS, WEEE, IPC 175x, GADSL, Tier 2, safer chemistry regulations, and HAP/VOC-related emission reductions. See: www.actio.net/default/index.ctm/products/material-disclosure

3. InSight Environmental Compliance Software from PTC

Software company PTC offers a suite of programs aimed at Product Lifecycle Management in the Industrial, High Tech, Aerospace & Defense, Automotive, Consumer, and Medical Device industries. InSight allows users to track the environmental performance of its products, materials, and parts from its suppliers along multiple dimensions. See: www.ptc.com/products/insight/environmental-compliance

4. Comply Plus Software from IHS

Comply Plus from IHS assists firms with data management by automating data collection from MSDSs, regulatory sources, and chemical inventories into a system customized to each firm's needs. This system allows companies to begin where they are and develop more complex data management systems as their needs and experiences change over time. The system allows companies to develop detailed chemicals management systems to identify and reduce chemicals subject to regulatory requirements and others of concern through supply chains. See: www.dolphinmsds.com/default.asp?id=17

5. The SciVera Lens

SciVera Lens is a web-based assessment system able to analyze both final products and their chemical ingredients. The system is designed as a tool for decision-makers of varying levels of familiarity with chemicals management by collecting product ingredient data along supply chains. The program enables data sharing between customers and suppliers while protecting CBI and other supplier information. The Lens is currently available to a limited number of industrial sectors. See: www.scivera.com/products.php

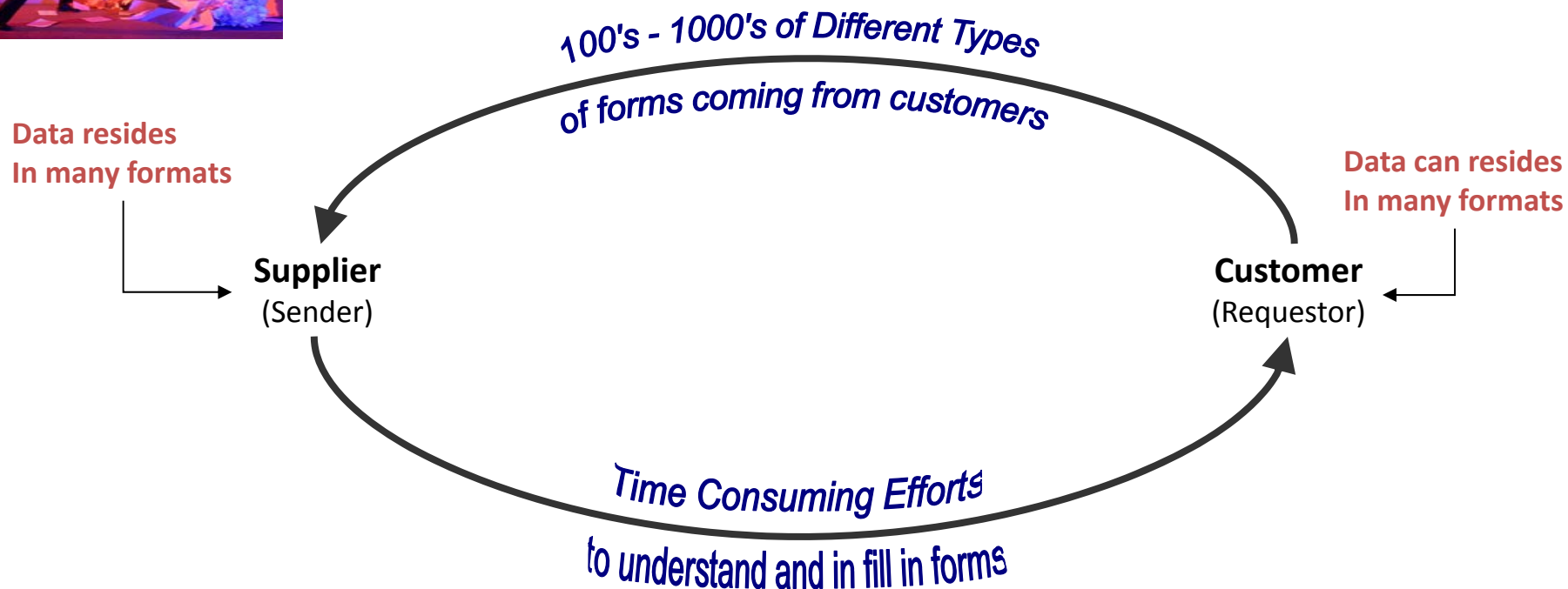
Part Number	Part Mass	UOM	Pre-Consumer Recycled (%)	Post-Consumer Recycled (%)		
28-6910-14	110	g	10	20		
Subpart Name	Material	Supplier	Substance	Class/Category	CAS Number	Material
28-LUBR	HG_20 MAT123	SUPPLY CO		9.2 LUBRICANTS		50
			MERCURY	MERCURY COMPOUNDS	7439-97-6	50
				Total Unspecified		0
28-6910-47	PB_43 MAT123	SUPPLY CO		3.2 COPPER ALLOYS		50
			LEAD	LEAD AND LEAD COMPOUNDS	7439-92-1	25
			FE	OTHER	7439-89-6	25
				Total Unspecified		0
28-6910-PCB	PB_17 MAT123	N/A		8.1 ELECTRONICS		100
			LEAD	LEAD AND LEAD COMPOUNDS	7439-92-1	5
			FE	OTHER	7439-89-6	5
				Total Unspecified		0

2011/2012

GC3 Chemical Data Standardization Project



The Problem: Lack of Standardization*



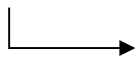
*Adapted from Mark Frimann, TI

Current methods for data requests:

- There are almost as many different types of forms as there are customers needing data
- Works against efforts to communicate chemical data in supply chains

Solution: Standardization*

Data can still
reside
in ANY format



Supplier
(Sender)



Customer
(Requestor)

Data can still
reside
in ANY format



*Adapted from
Mark Frimann, TI

***** Using a standardized, XML based format allows 2 ways to exchange data***

- Pull = Customer sends the XML data request with criteria and Supplier sends XML data
- Push = Supplier publishes XML data for download by customers
- Automation possible by using it as a data transfer standard with any required translators feeds from the Supplier database and to the Customer database

The electronic's sector's IPC175X Standard provides a framework for standardization in electronics and other sectors

Potential benefits of standardization

- Increased data availability
- Reduced cost of data gathering/communication
- Improved quality of data

GC3 Project objective:

To evaluate the feasibility & benefits of standardizing chemical data types & formats in supply chains

Project Approach:

- Engage in dialogue with companies in an actual supply chain
- Chose the Electronics Sector
 - Why? We could learn a lot from their experience!!
 - Significant need for, and experience with, collecting/reporting chemical data – to respond to RoHS, WEEE, REACH, etc.
 - Existing standard/data exchange protocol – IPC 1752 (U.S.)
 - New, improved, international standard/data exchange protocol:



International Electrotechnical Commission

IEC 62474 - Material Declaration for Products of and for the Electrotechnical Industry

- Standardized protocol for companies in electronics supply chain to track, exchange and declare information about the chemical and material composition of their products
- Provides software developers, specifications on the data format for the exchange of material declaration data (in XML)

Electronics Supply Chain Pilot



Pilot Team Members

Mark Frimann, Texas Instruments

Brian Martin & Bill Haas, Seagate

Lyndsey Ridgeway, HP

Roger McFadden, Staples

Chemical data “superset” = Universe of Data that Will Satisfy the Needs of the Companies in Our Supply Chain

1. Requestor (Customer) Information**

Company Unique ID (DUNS or equivalent)
Company Name
Company Address
Contact Name
Contact Title
Contact Email
Contact Phone Number
Division Name
Business Unit

2. Supplier (Sender) Information

Company Unique ID (DUNS or equivalent)
Company Name
Company Address
Contact Name
Contact Title
Contact Email
Contact Phone Number
Division Name
Business Unit

3. General Component Information

Request Date
Need Date
Requestor Component Name
Response Date
Supplier Component Name
Component Build Site
Component Mass
Unit of Measure (mg, gram)
Unit Type (each)

4. Component Compliance Declarations

Component/ Device Status - REACH
Component / Device REACH Availability Date
Component / Product Status - RoHS
EU RoHS Exemption (if applies)
Component / Product RoHS Availability Date

5. Chemical Substance Information

CAS Number or Other Unique Chemical ID No.
Substance Name
Amount in Component (mg, grams or kg)
Substance Concentration in component – ppm and/or %
[calculated from Component Mass and Amount in Component above]
Description of Chemical Use
Function of Chemical

6. Substance & Material Group Information*

EU RoHS Substance Category
From IPC 1752 Class B (when updated from IEC 62474)
Material Class ID (Number)
Material Class (Name)
IPC 1752 Class C
JIG 101 threshold for substance [taken from JIG]
Below threshold?
REACH
Substance on ECHA Substance List?
(released and proposed Candidate List)
JAMP**
Material Name
Material Group ID
Material Group
Use Category

**Staples is seeking
additional information**

Our Group's Operating Principles for a Standardized System for Chemical Data Communication:

- No de minimis level for reporting – if you know the chemical is in the component, it should be reported (and you should know!).
- No zeros – zeros cause problems. If a chemical is present, report it and carry the number through no matter how low the concentration.
- Report any impurity (i.e., chemical that was not intentionally added) that you know about, particularly if it's on a restricted substances list.

Data Modules for Electronics Sector

Q: Can some of these modules be harmonized with modules for other product sectors???

Modules Not Specific to
Electronics Sector???

1. Requestor (i.e., Customer) Info
2. Supplier (i.e., Sender) Info
5. Chemical Substance Info

Modules Specific Only to
Electronics Sector???

3. General Component Info.
4. Component Compliance Declarations
6. Substance & Material Group Info.

Some lessons learned

1. Companies in our electronics supply chain see strong benefit of standardizing and automating chemical data flow, and some (TI & Seagate) are leading efforts to develop the new, global IEC Material Declaration Standard;
2. This standard is a first step, but need the software to enable automated data exchange - key for large companies with thousands of complex products;
3. Third party software providers are jumping in to develop software;
4. Despite the standard and software, still not easy for large companies to change over their IT systems to accommodate a new approach – time, cost, and organizational inertia;

Some lessons learned

5. There is an existing third party central repository for chemical data for companies in the electronics supply chain – BOMCheck – but companies in our group do not want to use external systems that “hold” their data;
6. There can be a core set of common data, but must expect that companies may want some additional data to support their internal programs. Need to accommodate this with open text fields, etc.
7. Gap: Lack of robust unique chemical identifiers (i.e., numbers) for chemicals and materials (a key enabler of data standardization);
8. Useful for companies in a supply chain to meet on calls to learn about each companies’ data needs, why they do things the way they do, obstacles to change;

Possible Next Frontier: Explore Tools for Data Exchange to Support Nike Zero Discharge Initiative/ Joint Roadmap

NIKE, INC.

ABOUT
CAREERS
RESPONSIBILITY
INVESTORS

– November 2011

**NIKE ROADMAP
TOWARD ZERO
DISCHARGE OF
HAZARDOUS CHEMICALS**

NIKE, Inc. outlines specific actions being taken as a Company toward the goal of zero discharge of hazardous chemicals.

ABOUT
CAREERS
RESPONSIBILITY
INVESTORS

– November 2011

NIKE, Inc. Commitment
NIKE, Inc. (Nike) has long been committed to a more sustainable supply chain that are decoupled from construction process changes, we believe we will increase renewable energy consumption

This roadmap outlines specific actions toward zero discharge of hazardous chemicals. The roadmap is a tool to help Nike and its suppliers achieve the goal of zero discharge of hazardous chemicals by 2020. We are committed to this goal and will continue to work with our suppliers to achieve this goal.

NOVEMBER 18, 2011

**ADIDAS GROUP, C&A,
H&M, LI NING, NIKE
AND PUMA PARTNER TO
REACH ZERO
DISCHARGE BY 2020**

Participate in GC3 Data Exchange Pilot Project

Disclosure and chemical inventories are among the most challenging of issues toward the zero discharge of hazardous chemicals by 2020. Although we see progress with disclosure, we also believe that the strategy will require tools for data exchange in a decentralized structure and legal and regulatory conditions of the industry's supply chain.

As a member of the GC3 (Green Chemistry and Commerce Council), Nike will participate in a pilot project to evaluate the feasibility and benefits of standardizing chemical data exchange systems across supply chains. The pilot project will utilize a simple consumer-friendly data exchange system.

<http://nikeinc.com/news/nike-roadmap-toward-zero-discharge-of-hazardous-chemicals>