

## **White Paper**

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# **Best Practices for Reducing Risk through Environmental Compliance Data Collection**

## **Generating RoHS/REACH SVHC/Full Disclosure Material Data for Compliance Management**

Complying with environmental compliance regulations and directives is an increasingly challenging task for Electronic OEMs. Proper data collection procedures can help an OEM reduce risk in meeting all challenges for compliance management.

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## **Preface**

Complying with the variety of environmental regulations has become a challenging task for electronics OEMs (Original Equipment Manufacturers). There are frequent changes to RoHS regulations and exemptions; the REACH SVHC list may be revised up to twice a year; large OEMs are developing their own unique requirements.

For these reasons, GreenSoft believes that the best way to manage declarations is to collect, whenever possible, full disclosure material information for all components. Therefore, surveying and collecting the necessary information in the supply chain is critical. This white paper describes GreenSoft's data collection services for RoHS/REACH/Full Disclosure Material Data. This overview illustrates some of the procedures and tools of analysis during data collection process that can help your company reduce risk in the compliance management for all your products.

## **The Challenge of Collecting FMD Data**

The best way to address the wide variety of existing and future regulations, directives and OEM requirements—and their revisions—is to collect Full Material Declaration (FMD) data from suppliers. It is inefficient to collect multiple compliance certificates from the same supplier multiple times. And it makes the most sense to be proactive instead of reactive in managing environmental compliance.

Some suppliers do not have FMD and can only supply partial disclosures or certificates of compliance. Determining the minimum acceptable disclosure data for a product is part of the data collection effort.

But the reality is that not all suppliers that have FMD are prepared to release that information for a variety of reasons: parts are obsolete, sales volume is low (especially for customized parts), money is tight, and more. Most companies resist spending money to generate FMD on components until it is absolutely necessary, either forced by law or by key customers.

Over time, suppliers will become overwhelmed by requests for all types of declarations by customers. Suppliers are realizing that it will be impractical to perform lab testing to support non-use of substances every time a regulation or requirement changes. The best solution for suppliers is to survey their own supply chain and analyze every element in their products and create a Full Material Declaration for the product. But this process will take time.

So, what is the best way for an OEM to manage environmental compliance on their products? Continue to collect certificates every time regulations change? Or move to collect FMD, even though not all suppliers have the data?

## GreenSoft's Solution

GreenSoft offers data collection services to collect both certificates for a specified regulation and FMD to ensure product compliance today and in the future. Here is a description of the GreenSoft data collection process:

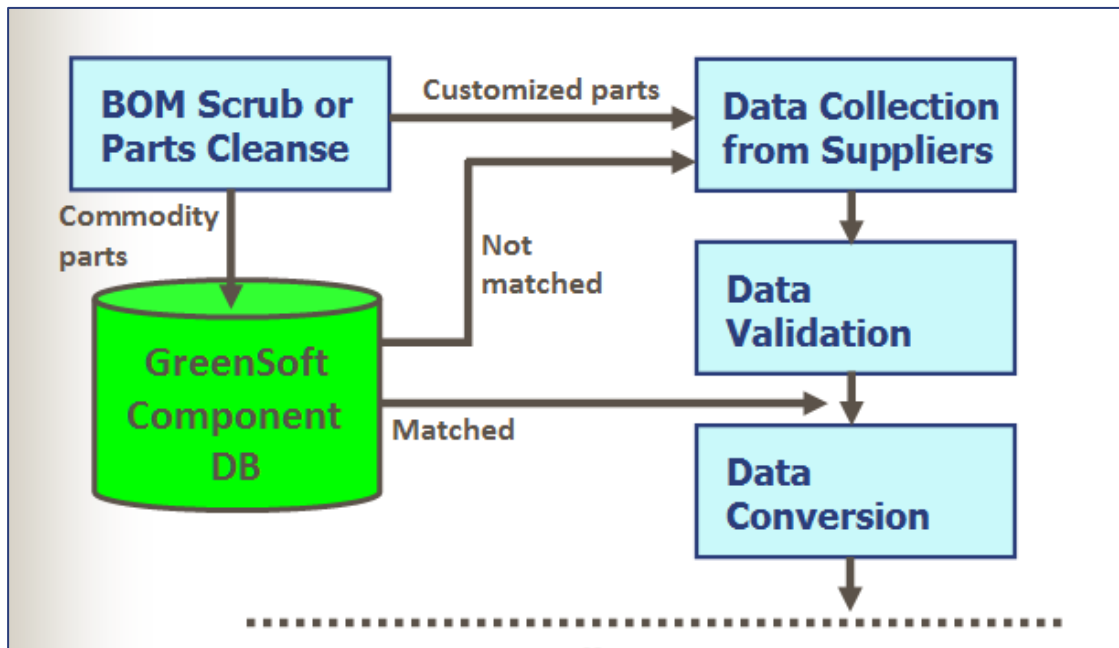


Diagram 1 – GreenSoft data collection service process flow

**BOM Scrub or Parts Cleanse.** GreenSoft begins by obtaining a BOM or a parts list from the customer. GreenSoft scrubs the BOM to remove all invalid parts or duplicate parts. Commodity parts from the scrubbed result are then matched against GreenSoft's Component Database, which contains more than 10 million part numbers with 1.2 million parts with FMD and 2.3 million parts with SVHC certificates.

**Data Collection.** Commodity parts that cannot be matched to GreenSoft's Component Database will get rolled into the data collection process along with customized parts. GreenSoft contacts suppliers on the customer's behalf to request the necessary information. GreenSoft continues to request information from suppliers until the data is obtained.

**Data Validation.** All data is validated to ensure it is usable for compliance management on your products. GreenSoft's ISO 9000:2001-certified process ensures customers receive the highest quality data.

**Data Conversion.** The validated data is then converted to the desired format to be used for product-level compliance validation. A variety of formats can be generated including IPC-1752 XML, Microsoft Excel, proprietary XML or Excel-based survey form.

## Risk Management

GreenSoft’s data collection process is an essential component of the risk management process for many companies. The supply chain can present many “unknowns”, which increases risk. Here are just several unknowns:

- The proper contact person for environmental compliance data at a supplier is unknown. If the person is found, whether or not the supplier has the necessary information is also unknown.
- Even if a supplier has the data, whether it can be used to do product-level compliance is unknown.
- Even if the data can support product-level compliance, the time it will take for the company to respond is unknown as well.

To minimize our customers’ risk, GreenSoft begins by obtaining a BOM or a parts list. GreenSoft scrubs the BOM and provides a match analysis of parts and suppliers against GreenSoft’s Component Database. We typically return this analysis within 24 hours. Here’s an example from a real BOM, which originally listed 1724 parts:

<b>PN Analysis</b>				
Total number of Items		1724		
PNs with Invalid Info		9		
PNs in Duplication		26		
Total number of Processable Items		1689	100%	
	Component Mass	1455	86%	
	Lifecycle Status	1431	85%	
	RoHS Status	1409	83%	
	FD MCD	1049	62%	parts with full-disclosure material composition data
	SVHC	1257	74%	parts with REACH SVHC data
<b>Supplier Analysis</b>				
Classification	Number of Suppliers	Number of PNs		
TOTAL	155	1689	100%	
A	95	1497	89%	A: suppliers that provide feedbacks within 15 days
B	9	31	2%	B: suppliers that provide feedbacks within 30 days
C	1	2	0%	C: suppliers that provide feedbacks within 60 days
F	21	74	4%	F: contacted before but suppliers never provide any feedback
Z	29	85	5%	Z: never contacted before

Table 2 – BOM Scrub and Analysis can be done before the project starts

## Part Number Analysis

In the example above, 9 parts have information that is unclear and 26 parts are duplicates, leaving 1689 parts as “Processable” items. Those 1689 parts are then matched against the GreenSoft Component Database, with the following results:

- 86% of the parts (1455) can be found in GreenSoft’s database with component mass data.

- 85% of the parts (1431) can be found in GreenSoft's database with lifecycle status data (component is still Active selling in the market or Obsolete by the manufacturer).
- 83% of the parts (1409) can be found in GreenSoft's database with RoHS status data, including the status and the compliance certificates.
- 62% of the parts (1049) can be found in GreenSoft's database with Full Material Declaration data and associated documents.
- 74% of the parts (1257) can be found in GreenSoft's database with REACH SVHC certificates.

Part number analysis helps control risk because at the beginning of the project the customer knows the minimum expected result for data collection. Consider the example above. If current requirements demand compliance with REACH SVHC, the customer can focus on the 26% of the parts where REACH SVHC compliance is unknown. GreenSoft will work with the customer on these unknown parts and develop a strategy to reach 100% compliance.

## **Supplier Analysis**

The key to success in data collection is the responsiveness of the suppliers. GreenSoft tracks the response rate of every supplier in our Master database, which can be used to provide the measure of risk in data collection.

GreenSoft presents data on the responsiveness of specific suppliers when these suppliers are asked for data. In the example above:

- 91% of the parts (1497+31) are from suppliers that GreenSoft has contacted in the past who responded within 30 days or sooner.
- 4% of the parts (74) are from suppliers that have never responded to GreenSoft's requests for data. GreenSoft also provides a list of suppliers and their classification to identify problem suppliers. Customers can help to reach these suppliers and motivate them to respond to requests from GreenSoft.

	A	B	C
1	MFG	PN	supplier classification
11	IRWIN INDUSTRIAL AGENCIES	44	F
52	SUSUMU	4	F
63	SILICON LABORATORIES	3	F
68	MCMaster-CARR	3	F
70	SWAGELOK	3	F
75	TOREX SEMICONDUCTOR	2	F
91	IMAGE-TEK	1	F
99	ELECTROSONIC	1	F
100	JONARD IND	1	F
117	ENPIRION	1	F
118	REALTEK	1	F
121	INTEGRATED SILICON SOLUTION	1	F
124	SUNLED	1	F
136	FIC	1	F
140	FB	1	F
141	SPAENAUR	1	F
142	PEM FASTENING	1	F
146	EDMUND OPTICS	1	F
147	SKY	1	F
154	SANYO DENKI	1	F
156	CHOMERICS	1	F
157			

Table 3 – Class F suppliers from BOM Scrub

- 5% of the parts (85) are from suppliers that GreenSoft has never contacted. These are most likely suppliers of customized parts. Customers can help by giving GreenSoft contact information for these suppliers – we will do the rest.

With the Supplier Analysis, customers can do a better job managing risk and should expect the overall completion rate to exceed 90%.

### Supplier Analysis on Fields of Interest

In addition to supplier analysis on the parts list, GreenSoft offers analysis on certain fields of interest. For example, if the requirement is to perform RoHS and REACH SVHC compliance on a BOM (parts list), GreenSoft provides a Supplier analysis on those fields, as shown below.

Supplier Analysis		On Parts do not have FD MCD		
Classification	Number of Suppliers	Number of PNs		
TOTAL	134	640	38%	
A	74	448	27%	A: suppliers that provide feedbacks within 15 days
B	9	31	2%	B: suppliers that provide feedbacks within 30 days
C	1	2	0%	C: suppliers that provide feedbacks within 60 days
F	21	74	4%	F: contacted before but suppliers never provide any feedback
Z	29	85	5%	Z: never contacted before
Supplier Analysis		On Parts do not have SVHC data		
Classification	Number of Suppliers	Number of PNs		
TOTAL	117	432	26%	
A	61	252	15%	A: suppliers that provide feedbacks within 15 days
B	8	26	2%	B: suppliers that provide feedbacks within 30 days
C	1	2	0%	C: suppliers that provide feedbacks within 60 days
F	19	69	4%	F: contacted before but suppliers never provide any feedback
Z	28	83	5%	Z: never contacted before
Supplier Analysis		On Parts do not have RoHS data		
Classification	Number of Suppliers	Number of PNs		
TOTAL	89	280	17%	
A	42	126	7%	A: suppliers that provide feedbacks within 15 days
B	7	12	1%	B: suppliers that provide feedbacks within 30 days
C	0	0	0%	C: suppliers that provide feedbacks within 60 days
F	15	64	4%	F: contacted before but suppliers never provide any feedback
Z	25	78	5%	Z: never contacted before

Table 4 – Supplier Analysis on fields of interest

In the Part Number Analysis, we see that 26% of the parts do not have SVHC data. Of these parts, based on GreenSoft’s experience, suppliers of 17% of the total parts (Class A and B suppliers) typically provide SVHC data in 30 days or less. This reduces the risk of suppliers that may not provide SVHC data to a total of 9% on Class F suppliers (19) and Class Z suppliers (28). The expected minimum completion rate for SVHC data is now at 91%. The customer can now manage risk by focusing on Class F and Class Z suppliers.

The same logic can be applied to completing the collection of RoHS data. The customer can manage risk by focusing on Class F suppliers (15) and Class Z suppliers (25). The expected minimum completion rate for RoHS data is also at 91%.

The analysis shown above can be performed before a contract is signed between GreenSoft and the customer. The customer will know the data that will be available immediately (e.g., the parts that match with GreenSoft’s Component Database) and the trouble area that will demand attention (Class F and Class Z suppliers). This knowledge minimizes risk.

## Project Deliverables

Final data can be delivered in various formats. Typically deliverables will be in two different formats: one in Excel for all status information and document links, and the other in a type of XML such as IPC-1752.

GreenSoft has developed a proprietary XML format called PartData that contains all status information, material declaration data, and also the supporting documents such as datasheets, CoCs and material declaration documents.

## **Partnering with the Customer**

To maximize data collection, GreenSoft works in partnership with our customers. We request an authorization letter, signed by a director or above, authorizing GreenSoft to contact their suppliers on their behalf. GreenSoft also prefers to work with a main customer contact to resolve any issues that arise during the project.

## **Project Duration**

GreenSoft typically completes the data collection project of a parts list of under 1000 parts in less than 6 weeks. GreenSoft will give customers an estimate of the project duration before the project begins. For most customers, after the completion of the initial project, GreenSoft initiates a 12-month maintenance program.

## **Maintenance Program**

The purpose of GreenSoft's maintenance program is to extend the data collection period and continue to pressure suppliers. As stated before, the initial data collection service may not be able to cover 100% of all parts with FMD data. The maintenance program produces a higher percentage of FMD data from suppliers on all parts.

The maintenance program covers two service segments: (1) continue to request FMD data from suppliers on parts that GreenSoft is unable to complete in the initial project; (2) monitor changes on all parts including lifecycle status, RoHS compliance status, REACH SVHC status and change of material declaration data.

## **Conclusion: Manage Risk by Outsourcing Data Collection to GreenSoft**

We hope that this summary of GreenSoft's data services will help you feel more comfortable outsourcing data collection to GreenSoft. GreenSoft has developed procedures and analysis tools to help you gain the information needed to reduce risk:

- You will know the minimum completion percentage from Day 1.
- You will know the number of parts that match GreenSoft's database.
- By focusing on a small number of unresponsive (Class F) suppliers, you will reduce risk.
- You will know that the maintenance program will cover changes to components and/or regulations. This will also increase the completion percentage.