

Product Brief



GreenData Manager (GDM)

GDM-Engine: One of the Easiest Ways to Exchange Data Between GDM and ERP/PLM/PDM

Introduction

One key factor for Original Equipment Manufacturers (OEMs) to consider when evaluating a compliance solution is the ability of exchanging data with the existing enterprise resource planning (ERP)/product lifecycle management (PLM)/product data management (PDM) systems. GreenSoft offers a simple data exchange solution to enable ERP/PLM/PDM systems to link to a designated page inside GreenData Manager (GDM) software that provides detailed compliance information.

GreenData Manager (GDM) Engine links ERP/PLM/PDM systems with GDM Browser Edition (GDM-BE) and Hosted GDM. OEM users can access compliance status reports and component or Bill of Materials (BOM) compliance data inside GDM-BE and Hosted GDM via a link from their ERP/PLM/PDM system. Users can also download the compliance status for parts or BOMs in Excel from GDM-BE or Hosted GDM.

This document provides details on this simple and easy method of exchanging compliance data and documents between ERP/PLM/PDM and GDM software through GDM-Engine.

GDM-BE and Hosted GDM Software

GreenData Manager – Browser Edition (GDM-BE):

GDM-BE is an on-premise web-based compliance software tool that is installed in a server behind the OEM's company firewall. It can be accessed by multiple users at the same time through a Web browser. Web users do not need to install any software and can access compliance data and documents for components or Bills of Materials (BOMs), as well as compliance reports, through the company Intranet or through the Internet. GDM-BE licenses start with 5 concurrent users and have the option of adding more concurrent users in 5 and 10 user tiers.

Hosted GreenData Manager (Hosted GDM):

Hosted GDM is similar to GDM-BE, but Hosted GDM is installed on a dedicated cloud server outside the OEM's company firewall and is managed by GreenSoft instead of the OEM's internal IT. Hosted GDM offers all the benefits that GDM-BE

has without the burden of internal IT management such as software upgrades and database backups. GreenSoft takes care of all IT management and ensures the OEM has a smooth experience in generating compliance reports for products.

GDM-Engine

GreenData Manager (GDM) Engine is a license-based module for GDM-BE and Hosted GDM that enables the OEM to exchange data between their ERP/PLM/PDM system and GreenSoft's GDM-BE or Hosted GDM software.

Typically, there are only a few columns that OEMs can add in their ERP/PLM/PDM systems to address the compliance status of components or BOMs for regulations such as EU RoHS-2, REACH SVHC or CA Prop 65. GDM-Engine offers a simple method of linking the data inside those columns to a web page in GDM-BE or Hosted GDM that shows the detailed compliance status of the designated component or BOMs for the desired regulation.

An example page from an OEM's ERP/PLM/PDM system with GDM-Engine is shown below. Please note, GreenSoft will provide guidance on creating these hyperlinks in the OEM's ERP/PLM/PDM.

Access to Component Compliance Details with GDM-Engine: ERP/PLM Screen

Internal PN	MFG PN	MFG Name	Description	Compliance Details
0-0013-1279	CRCW060310K0FKEA	VISHAY	WISM 10K 1% 1/10W TK100 0603	Compliance Details
1038-6181	12.87706	Geyer Electronic	Y_25MHz_SMT_6X3.5MM_100PPM_16PF_-10	Compliance Details
1046-1602	PKM4304PILA	ERICSSON	SCM_QBRICK_12V_33A_0.145IN_-40_ROHS	Compliance Details

Item Master Customer Compliance Report for 'ACME Customer Compliance' [Download Customer Compliance Report](#)

- The OEM can add a column in the component list in the ERP/PLM/PDM system and it will link to a webpage inside GDM-BE/Hosted GDM, as shown below, which will detail the compliance status for the desired regulations.

GreenData Manager BROWSER EDITION
You are currently logged in as: GDM Engine
User Count: 1/50 [\[Log Out\]](#)
GreenSoft
Technology, Inc.

System
Manufacturers
Active Rules
Notifications
Item Master
Bill of Materials
Reports
Tasks
Help

Item Details

● : OK/Passed ● : Not Ready/Failed ● : Invalid Entry/Incomplete ● : Document Expired ● : Passed with Exemption ■ : Subpart Info Incomplete ■ : Subpart Failed ○ : Not Applied

Jump to Segment: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [\[Save View Preference\]](#) [\[View Change History\]](#) [Return](#)

Item Summary		Active Rule Name	Rule Status
Internal PN:	0-0013-1279	California Proposition 65 (for status)	●
Manufacturer:	VISHAY	EU Regulation - 1005/2009 Ozone Depletion Substances - Quick Scan	●
Manufacturer PN:	CRCW060310K0FKEA ds	EU RoHS	● CoC
Manufacturer Code:		EU RoHS-2 New Substances	●
Description:	WISM 10K 1% 1/10W TK100 0603	REACH SVHC (174)	●
Corrected MFG:		REACH SVHC (181)	●
Corrected MPN:			
Lifecycle:	Active		
Exemptions:	<ul style="list-style-type: none"> R2-7c1 - Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound. (Please note that a request for extension on the expiration date has been raised for this exemption. EU will make their decision on the exemption 18 to 24 months after the submission for extension. The actual expiration date will be reassigned once the decision on extension is made. Once a decision is made, the stakeholder has 12 to 18 months to be compliant with the new decision on the exemption.) 		

- In addition to updating the column data in the OEM's ERP/PLM/PDM with hyperlinks to the desired component page inside GDM-BE/Hosted GDM, the OEM can also add the component compliance report in Excel to a hyperlink from the OEM's ERP/PLM/PDM system.

By clicking on the "Download Customer Compliance Report" link, the OEM can download an Excel file with the compliance status for all parts. The

OEM can leverage this component status file to update the data on their website.

A sample of the report for component compliance status is shown below. This report covers 5 different regulations – (1) CA Prop 65, (2) EU RoHS-2 (6 substances), (3) EU RoHS-2 New Substances (4 substances), (4) Halogen Free, and (5) REACH SVHC-181.

#	Internal PN	Manufacturer	Manufacturer PN	Description	Lifecycle	Exemptions	Primary	Customer Compliance Status	California Proposition 65 (for status)	EU RoHS	EU RoHS-2 New Substances	Halogen Free Scan	REACH SVHC (181)
1	0-0012-1166	VISHAY	VR37000002204JR500	WIME 2M2 5% 3,5 kV	Active	R2-7c1		Failed	Failed	Passed with Exemption	Passed	Passed	Passed
2	0-0013-1048	VISHAY	CRCW1206100KFKEAHP	WISM 100K 1% CHIP	Active	R2-7c1		Failed	Failed	Passed with Exemption	Passed	Passed	Passed
3	0-0013-1048	VISHAY	CRCW1206100KFKEBHP	WISM 100K 1% CHIP	Active	R2-7c1	Y	Failed	Failed	Passed with Exemption	Passed	Passed	Passed
4	0-0013-1048	VISHAY	CRCW1206100KFKECHP	WISM 100K 1% CHIP	Active	R2-7c1		Failed	Failed	Passed with Exemption	Passed	Passed	Passed
5	0-0013-1169	KOA	RK73H2ATTP1001F	WISM 1K 1% 1/8W TK	Active	R2-7c1	Y	Failed	Failed	Passed with Exemption	Passed	Passed	Passed
6	0-0013-1169	VISHAY	CRCW08051K00FKEA	WISM 1K 1% 1/8W TK	Active	R2-7c1		Failed	Failed	Passed with Exemption	Passed	Passed	Passed
7	0-0013-1169	Yageo	RC0805FR-071KL	WISM 1K 1% 1/8W TK	Active	R2-7c1		Failed	Failed	Passed with Exemption	Passed	Passed	Passed
8	0-0013-1182	VISHAY	CRCW0805100RFKEA	WISM 100R 1% 1/8W	Active	R2-7c1		Failed	Failed	Passed with Exemption	Passed	Passed	Passed
9	0-0013-1191	KOA	RK73H2ATTD6802F	WISM 68K 1% CHIP 0	Active	R2-7c1	Y	Failed	Failed	Passed with Exemption	Passed	Passed	Passed

Access to BOM Compliance Details with GDM-Engine:

Using GDM-Engine, OEMs can also add columns in their ERP/PLM/PDM system for BOMs with hyperlinks to the detailed compliance information in GDM-BE or Hosted GDM. This linked information includes compliance details for the designated BOM, access to the compliance reports page in GDM-BE/Hosted GDM, and the ability to download specific compliance reports on the designated BOM. OEMs can also download the compliance report in Excel, including the compliance status for desired regulations.

An example ERP/PLM/PDM BOM list with GDM-Engine is shown below. Please note, GreenSoft will provide guidance on creating these hyperlinks in the OEM's ERP/PLM/PDM.

ERP/PLM Screen

Product Code	Product Name	Compliance Details
BOM #1	BOM #1	View Details View Reports Download REACH SVHC Report Download EU RoHS MCV Report
BOM #2	BOM #2	View Details View Reports
BOM #3	BOM #3	View Details View Reports

BOM Customer Compliance Report for 'ACME Customer Compliance' for all BOMs [Download Customer Compliance Report](#)

BOM Compliance Summary Report for all BOMs [Download Compliance Report](#)

- OEMs can view BOM level compliance details for a designated BOM by clicking on "View Details," which will direct to the desired web page within GDM-BE/Hosted GDM, as shown below.

BOM Details

BOM ID: BOM #1 **Project Name:** **Location:** Location-1
BOM Name: BOM #1 **Revision:** **Imported Date:** 06/08/2018 01:10:43 PM
External BOM ID: BOM #1 **Exemptions:** R2-7a, R2-7c1
Preferred Rule:

Note: Parts maintained in GDM are having the unique combination of IPN + MFG + MPN. [Return](#)

<p>Number of Unique Parts: 525 [100.0 %]</p> <p>Number of Unique Manufacturers: 72</p> <p>Number of Parts that match with Item Master: 520 [99.0 %]</p> <p>Number of Parts not matching with Item Master: 5 [1.0 %]</p> <p>Number of Parts with Part Mass specified: 391 [74.5 %]</p>	<p>Action Panel: <input checked="" type="checkbox"/> Include 2nd Source Delete this BOM</p> <p>Action List: Click here to download the source file of this BOM Click here to view the RoHS Exemption List for all parts in this BOM</p> <p style="text-align: center; color: red;">View Reports View Hierarchy Download Hierarchy View Extended Fields</p>
--	--

<p>Lifecycle Data: <small>EOL - End Of Life NRND - Not Recommended for New Design NPI - New Product Introduction</small></p> <ul style="list-style-type: none"> ● Active/NPI: 373 [71.7 %] ● Obsolete/EOL/NRND: 19 [3.7 %] ● Unknown/Not Set: 128 [24.6 %] <p>Full Material Declaration (FMD)</p> <ul style="list-style-type: none"> ● Parts with FMD: 362 [69.6 %] ● Unknown/Incomplete/Others: 158 [30.4 %] <p>EU RoHS Data: <small>(Including the status from the parts without RoHS Certificate but with Full Material Declaration data.)</small></p> <ul style="list-style-type: none"> ● Passed: 292 [56.2 %] ● Passed with Exemption: 99 [19.0 %] ● Failed: 0 [0.0 %] ● Unknown/Incomplete: 129 [24.8 %] <input type="checkbox"/> Not Applicable: 0 [0.0 %] <p>REACH SVHC (181): <small>(Including the status from the parts without SVHC Certificate but with Full Material Declaration data.)</small></p> <ul style="list-style-type: none"> ● Passed: 323 [62.1 %] ● Passed with Exemption: 0 [0.0 %] ● Failed: 39 [7.5 %] ● Unknown/Incomplete: 158 [30.4 %] 	<div style="border: 1px solid orange; padding: 5px; margin-bottom: 5px;"> <p>Lifecycle Status</p> </div> <div style="border: 1px solid orange; padding: 5px; margin-bottom: 5px;"> <p>Full Material Declaration</p> </div> <div style="border: 1px solid orange; padding: 5px; margin-bottom: 5px;"> <p>EU RoHS Status</p> </div> <div style="border: 1px solid orange; padding: 5px;"> <p>REACH SVHC (181) Status</p> </div>
---	---

- The OEM can view the BOM level compliance report summary page for a designated BOM by clicking on "View Reports," which will direct to the desired web page within GDM-BE/Hosted GDM, as shown below.

Product Brief: GDM-Engine | Confidential | © 2018 GreenSoft Technology, Inc.

Page 6

Please note – 3 different reports are generated and the OEM can access the reports either by clicking “View,” or by clicking on “Excel” or “Zip” to download the reports.

BOM Report Details									
BOM ID: BOM #1		Project Name:			Location: Location-1				
BOM Name: BOM #1		Revision:			Imported Date: 06/08/2018 01:10:43 PM				
Select an existing report to view or click appropriate links to queue a new report. Return									
Total Number of Reports: 10									
Now displaying page 1 of 1. Reports per page: [50] [Previous] [Next] Date: [Most recent only and suppress duplicates] Report Type: [Show all types of reports] Page #: [1] Go									
#	Scheduled Date/Time	Report Name	Type	Options	Status	Request Start/End Date	Results	Download	Error
1	6/21/2018 12:00:04 AM	Analysis Report for Copper	Substance Analysis Report	Analysis Type: SUBSTANCE Reference Name: Copper Exclude Incomplete: Yes Include 2nd Source: No Shipment Count: 1	Completed	Start: 06/21/2018 12:00:24 AM End: 06/21/2018 12:00:26 AM	View	Excel	
2	6/14/2018 10:59:26 AM	BOM 1 MCV Report	EU RoHS MCV Report	Exclude Incomplete: Yes Include 2nd Source: Yes Include RoHS-2 New Substances: Yes	Completed	Start: 06/14/2018 10:59:26 AM End: 06/14/2018 10:59:43 AM	View	Excel	
3	6/12/2018 12:27:33 PM	Weekly BOM GR update with TR	Grand Report	Rules: EU RoHS, EU RoHS-2 New Substances, Halogen Free Scan, Low Halogen Scan Include columns from Grand Report Fields Setup: Yes Include 2nd Source: No Include Certificate of Compliance (CoC): No Include Proof of Compliance (PoC): No Include PoC Notes: No Include Proof of Non-Compliance (PoNC): No Include Test report (TR): Yes Include Product Documents: No Preserve Hierarchy: Yes Include Revision: No Include Location: No Include Notes: No Include ExcludeFlag: No Export HTML: Yes	Completed	Start: 06/12/2018 12:27:33 PM End: 06/12/2018 12:27:34 PM		Zip Excel	

- OEMs can also view a specific BOM level compliance report for a designated BOM. For example, clicking on “View RoHS MCV Report” will download the Excel report for RoHS MCV report on BOM #1. The OEM can then open the Excel file to view the EU RoHS MCV report, as shown below.

Report Type:	EU RoHS MCV Report
Date of Report:	6/14/2018 10:59:43 AM
Rule Name:	EU RoHS and EU RoHS-2 New Substances
Rule Description:	[6 Substance Groups] Restriction of Hazardous Substances - EU DIRECTIVE 2011/65/EU (RoHS-II) and [4 new substances] Commission Delegated Directive 2015/863/EU, published on Mar 31, 2015, adds 4 Phthalates onto to the original 6 hazardous substances per EU RoHS-2
BOM ID:	BOM #1
BOM Name:	BOM #1
Revision:	
Project Name:	
Mass (g):	671.730595727500
Location:	Location-1
Product Category:	
Include 2nd Source:	Yes
Special Note:	Please note that there may be some parts with incomplete or partial information that have been excluded from the report.
Number of Excluded Parts:	163

Substance Group	Threshold (ppm)	MCV (ppm)	Compliance Status	Exemptions
Lead/Lead Compounds	1000	1000.000	Passed with Exemption	R2-7a, R2-7c1
Mercury/Mercury Compounds	1000	5.000	Passed	
Cadmium/Cadmium Compounds	100	40.000	Passed	
Hexavalent Chromium/Hexavalent Chromium	1000	0.000	Passed	
Polybrominated Biphenyls (PBBs)	1000	0.000	Passed	
Polybrominated Diphenylethers (PBDEs)	1000	0.000	Passed	
Bis(2-ethylhexyl)phthalate (DEHP)	1000	0.000	Passed	
Benzyl butyl phthalate (BBP)	1000	0.000	Passed	

- GDM-Engine also allows the OEM to download the compliance report for all BOMs for a list of desired regulations. In the example given above, the OEM can download the BOM level compliance report in an Excel file for a list of desired regulations by clicking on the “Download Customer Compliance Report,” and an Excel file will be downloaded from GDM-BE/Hosted GDM with the compliance status for all BOMs, as shown below.

Please note, there are total of 5 different regulations listed in the Excel file – (1) CA Prop 65, (2) EU RoHS (6 substances), (3) EU RoHS-2 New Substances (4 substances), (4) Halogen Free, and (5) REACH SVHC-181. You can set up these desired regulations as a Customer Compliance Rule from GDM-BE/Hosted GDM.

Item No	BOM ID	BOM Name	Project Name	Location	Revision	Exemptions	California Proposition 65 (for status)	EU RoHS	EU RoHS-2 New Substances	Halogen Free Scan	REACH SVHC (181)
1	BOM #1	BOM #1		Location-1		R2-7a, R2-7c1	Failed	Passed with Exemption	Passed	Failed	Failed
2	BOM #10	BOM #10	XRF Scanner	Location-2	2.1	R2-7a, R2-7c1	Failed	Passed with Exemption	Passed	Failed	Failed
3	BOM #11	BOM #11		Location-2	Rev-1	R2-7a, R2-7c1	Failed	Passed with Exemption	Passed	Failed	Failed
4	BOM #2	BOM #2		Location-1	Rev-2	R2-7a, R2-7c1	Failed	Passed with Exemption	Passed	Failed	Failed
5	BOM #3	BOM #3		Location-1	Rev-1	R2-7a, R2-7c1	Failed	Passed with Exemption	Passed	Failed	Failed
6	BOM #4	BOM #4		Location-1		R2-7a, R2-7c1	Failed	Passed with Exemption	Passed	Failed	Failed
7	BOM #5	BOM #5		Location-1		R2-7a, R2-7c1	Failed	Passed with Exemption	Passed	Failed	Failed
8	BOM #6	BOM #6 - small		Location-1			Failed	Passed	Passed	Passed	Passed
9	BOM #7	BOM #7		Location-1		R2-7a, R2-7c1	Failed	Passed with Exemption	Passed	Failed	Failed
10	BOM #8	BOM #8		Location-1		R2-7a, R2-7c1	Failed	Passed with Exemption	Passed	Failed	Failed
11	BOM #9	BOM #9		Location-2		R2-7a, R2-7c1	Failed	Passed with Exemption	Passed	Failed	Failed

- OEMs can also download a compliance report for all BOMs on all regulations (covering 71 rules from 22 regulations) listed in GDM-BE/Hosted GDM.

When under 100 BOMs are loaded to the GDM software, generating the compliance report for all BOMs on all regulations is simple. However, when more than 100 BOMs are loaded to GDM-BE/Hosted GDM, the report generation for all BOMs for all regulations will take a significant amount of time and will occupy a major portion of resources on the GDM-BE/Hosted GDM server. GreenSoft does not recommend using the “Download Compliance Report” feature for all BOMs on all regulations when there are more than 100 BOMs loaded in GDM-BE/Hosted GDM software.

- Whenever the GDM-Engine is in use and the software opens many GDM-BE/Hosted GDM webpages, each webpage will occupy one license of the

concurrent users' licenses. Please remember to close the GDM-BE/Hosted GDM pages after use to avoid going over the concurrent license limit.

Additionally, GDM-BE/Hosted GDM has an auto-logout feature. If a user forgets to logoff or close pages from GDM-Engine, these pages will be closed down automatically after several minutes of non-operational state. The concurrent license used by GDM-Engine will be released upon page closure.

Conclusion

Data exchange has become a key issue for OEMs as compliance data needs to be shared throughout the company. GreenSoft provides full service data exchange through web services calls (aka eGDM), but this demands a certain level of programming from the OEM. OEMs that have concerns about investing the resources needed for programming now have an alternate option for simpler data exchange: GDM-Engine.

GDM-Engine links data between the OEM's ERP/PLM/PDM system and GDM-BE or Hosted GDM software. This paper has summarized how data is exchanged through GDM-Engine and shown examples of the what is possible with the features provided in GDM-Engine. This should help OEMs implement data exchange faster and easier.

GreenSoft Technology, Inc.

155 S. El Molino Ave. Suite 100
Pasadena, CA 91101 USA
Phone: (323) 254-5961
www.greensofttech.com

GreenSoft Technology: A Trusted Partner

GreenSoft has more than 14 years of experience in managing compliance data and has a broad range of expertise in active and passive components, electrical and mechanical parts, packing and printing materials, and raw materials including gas and chemicals. GreenSoft has relationships with over 31,000 suppliers worldwide and is ISO 9001:2015 certified.