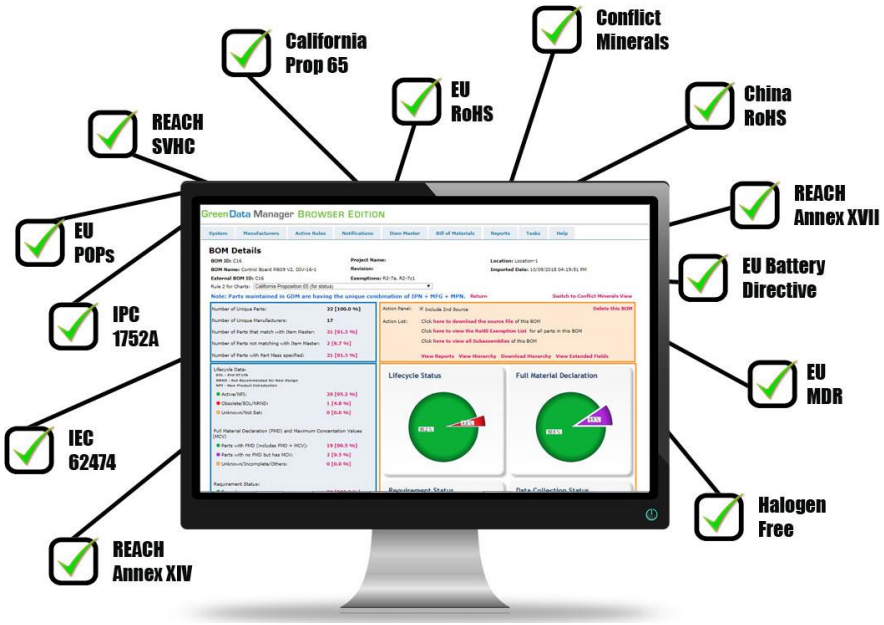
GreenSoft Technology, Inc.

GreenData Manager®
Application Note



GDM-BE/Hosted GDM
TSCA PBT Compliance Validation

GreenSoft Technology, Inc.

155 S. El Molino Ave., Suite 100
Pasadena, CA 91101
Phone: (323) 254-5961
Fax: (877) 525-9280
www.GreenSoftTech.com

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Introduction

On January 6, 2021, US Environmental Protection Agency (EPA) passed new rules banning or restricting five persistent, bioaccumulative and toxic (PBT) substances. Unlike prior TSCA actions which largely applied only to the production, processing, and importing of chemicals, these new rules include restrictions on substances present in articles.

The restriction on substances present in articles means that many manufacturers are being impacted by the TSCA for the first time. Two of the five substances, PIP 3:1 and DecaBDE, have been found to be used in electronic equipment. As such, the new TSCA restrictions are expected to cause significant disruptions in many electronics manufacturers' existing supply chains.

Considering penalties for violating TSCA regulations can be as high as $37,500 per violation, per day, GreenSoft is recommending producers review their products for risk of noncompliance. GreenSoft has made TSCA PBT rules available for import into GDM which allow users to evaluate the status of current parts and products against this regulation, as well as to identify parts with risk of non-compliance due to gaps in existing data.

The sections below will demonstrate how to use the TSCA rules in the browser edition of GreenData Manager® (GDM)/Hosted GDM software to determine if your parts and/or products contain restricted TSCA PBT substances.

Activating TSCA Rules

In order to determine if any parts or products contain restricted TSCA PBT substances, you must first activate the new TSCA rules in GDM. There are two rules available to use:

- TSCA – 5 Substances: This rule checks the concentrations of all 5 PBT substances.
- TSCA – PIP (3:1): This rule checks only for PIP (3:1), which has the highest risk of being found in electronic products.

You can choose to activate one or both rules to evaluate your parts and products for TSCA compliance, or to see if the data is incomplete and needs to be collected.

Step 1: Log into GDM-BE/Hosted GDM on your web browser.

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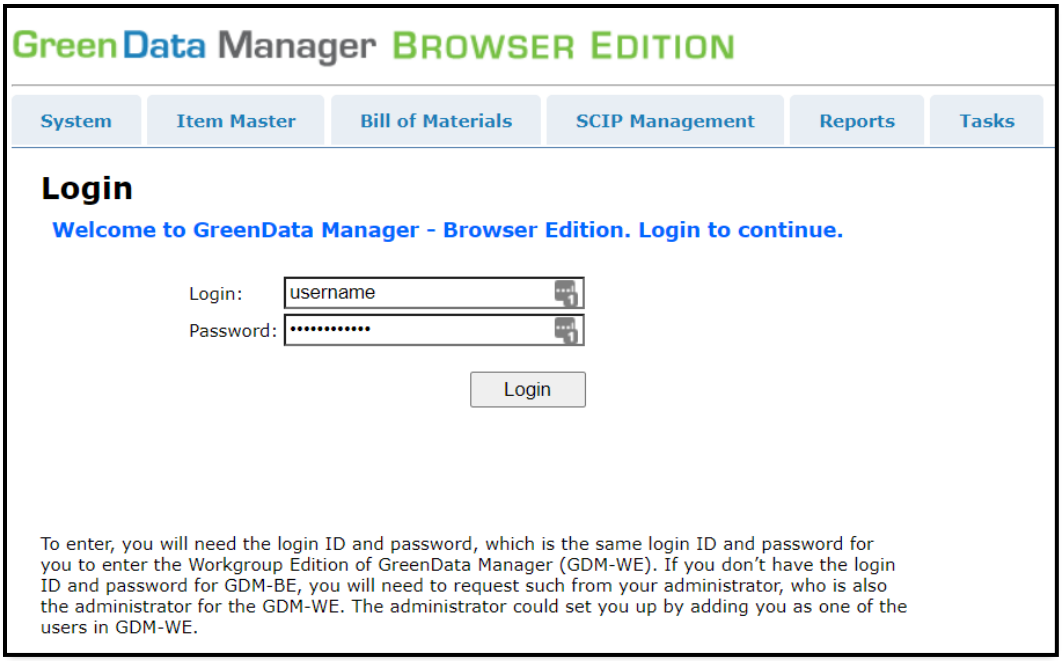
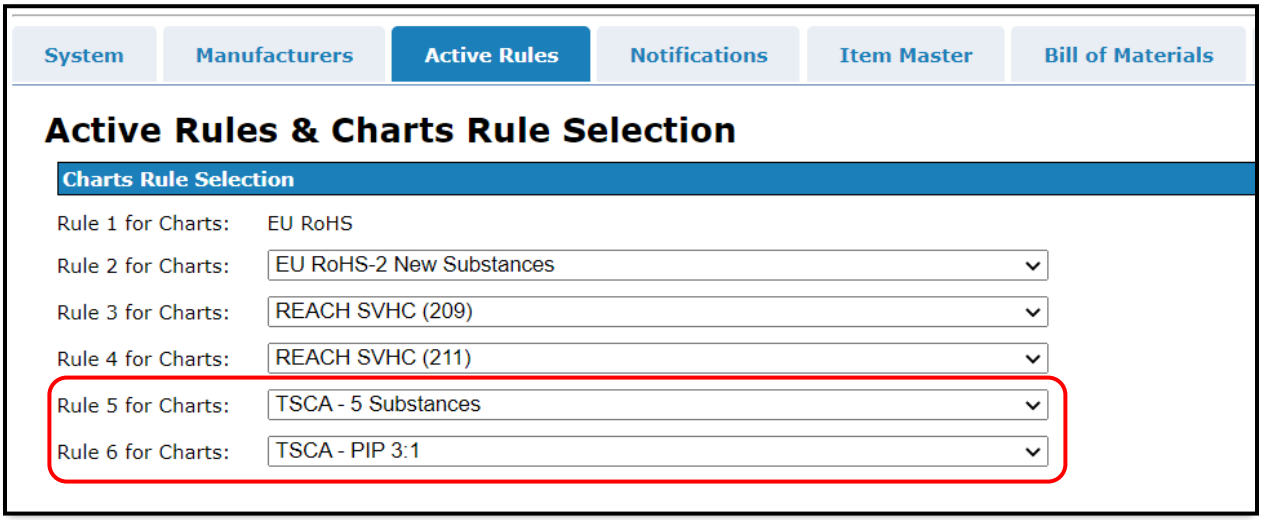


Step 2: Navigate to the **Active Rules** tab. From here, use the dropdown menus under Charts Rule Selection to select one or both TSCA rules to view on your Item Master and BOM Details dashboards.



Step 3: While still in the **Active Rules** tab, use the checkboxes under Active Rule Selection to select one or both TSCA rules. This will allow you to view the statuses of individual parts and BOMs while viewing any parts list or BOM Compliance Summary. Be sure to click **[Save Selection]** to confirm your selections.

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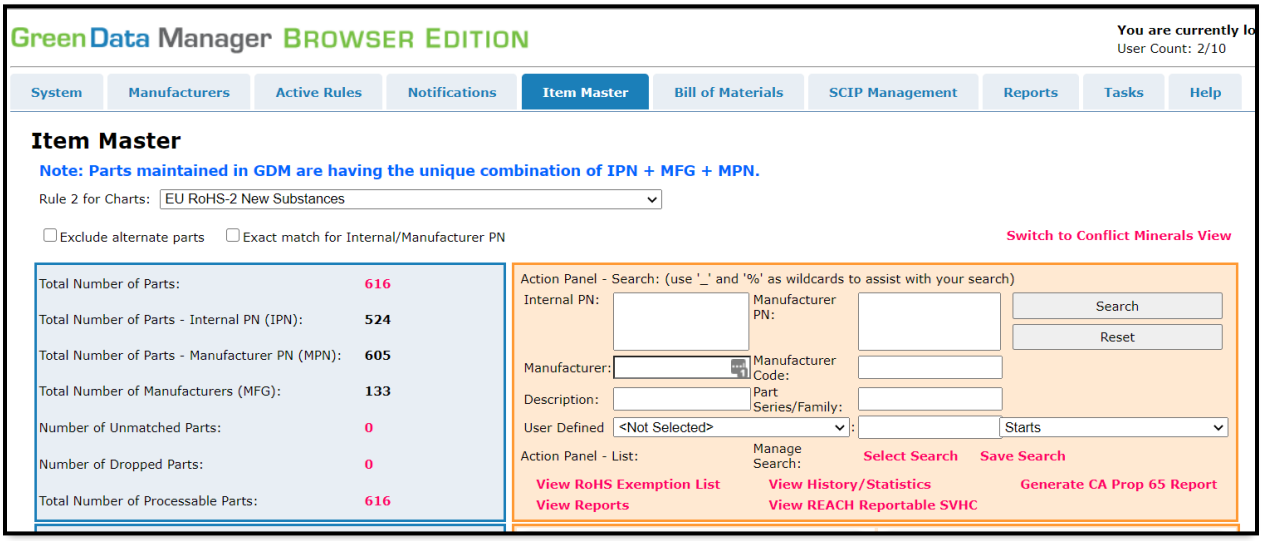
☐	REACH SVHC (84)		[Jun 18, 2012] Substances of Very High Concern (SVHC) released on Jun 18, 2012 per EU Regulation EC/1907/2006 - Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)		Link
☐	Stockholm Convention POPs - 2004-05-17		[18 substances + 10 substance groups] Persistent Organic Pollutants (POPs) - updated according to its eighth meeting held from 24 April to 5 May 2017		Link
☑	TSCA - 5 Substances		On January 6, 2021, EPA issued 5 regulations related to substances relevant to Persistent, Bioaccumulative, and Toxic Chemicals under TSCA Section 6(h).		
☑	TSCA - PIP 3:1		On January 6, 2021, EPA issued 5 regulations related to substances relevant to Persistent, Bioaccumulative, and Toxic Chemicals under TSCA Section 6(h). Only PIP3:1 will apply to products/articles		

Evaluating Overall Parts Status

In this section, we will examine the Item Master page for an overall review of the status of all parts with respect to the TSCA rules. The Item Master page can be configured to display several charts which display the proportion of all parts which fall under different statuses for different regulations. You will be able to see an overall view of how many parts are confirmed TSCA compliant, how many are confirmed to contain restricted substances, and how many are at risk of noncompliance due to having incomplete data. You will then be able to export lists of parts which have the different statuses.

Step 1: Navigate to the **Item Master** tab. This is where you can find charts which show the status of all parts for the rules you selected in the previous section.



Step 2: Find the charts corresponding to the TSCA rules. To the left of the charts there is a legend which shows the different statuses, the corresponding colors, and the percentage of all parts which have each status.

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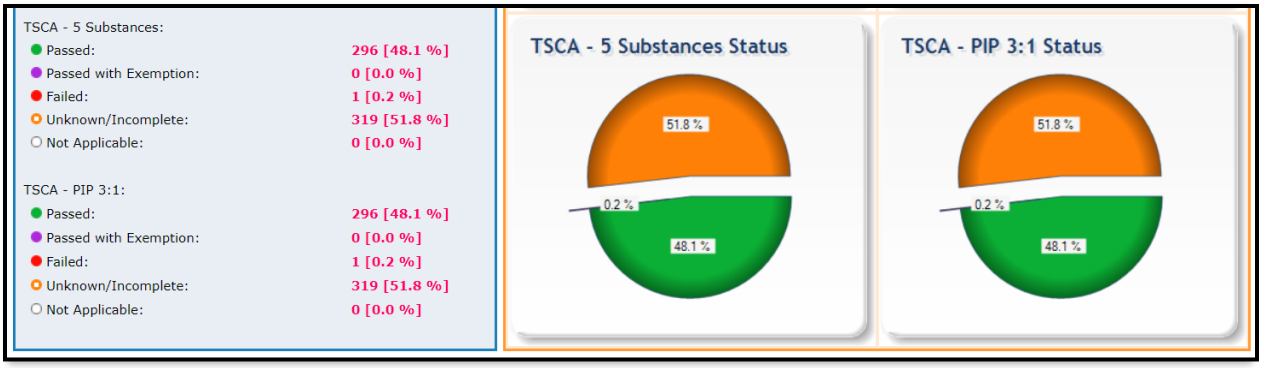
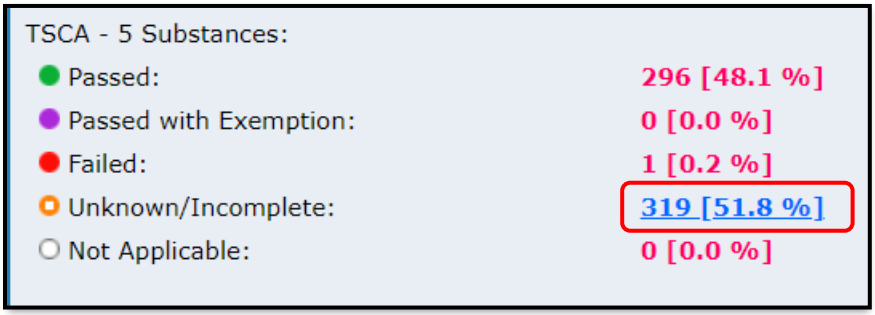


The different statuses are defined as the following:

- Green circle: **No substances are reported present** in concentrations exceeding the regulation threshold.
- Red circle: **At least one substance is reported present** in a concentration exceeding the regulation threshold.
- Orange circle: **The data is incomplete.** GDM will report the data as incomplete if either of the following are true:
    1. Supplier has not provided a full material declaration or TSCA certificate of compliance.
    2. Supplier provided a full material declaration with a trade secret substance disclosed over PBT Substance thresholds, and has not provided a TSCA certificate of compliance.
- Purple circle: The part passes due to an exemption. This status will not appear for any parts because GDM does not track TSCA exemptions.

Step 3: Click the number/percentage next to a status, or the portion of the chart, to view a list of parts which have the status. In this example, we will view a list of 319 parts which have the "Unknown" status for TSCA – 5 Substances.



Step 4: From the resulting Item List, you can click "Download Excel" to download an Excel spreadsheet for your own records.

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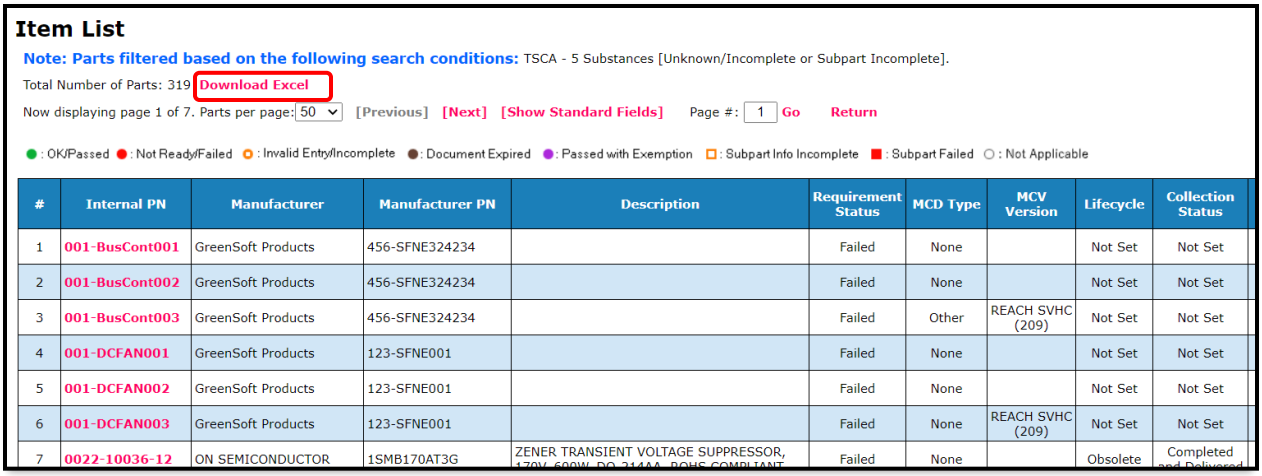
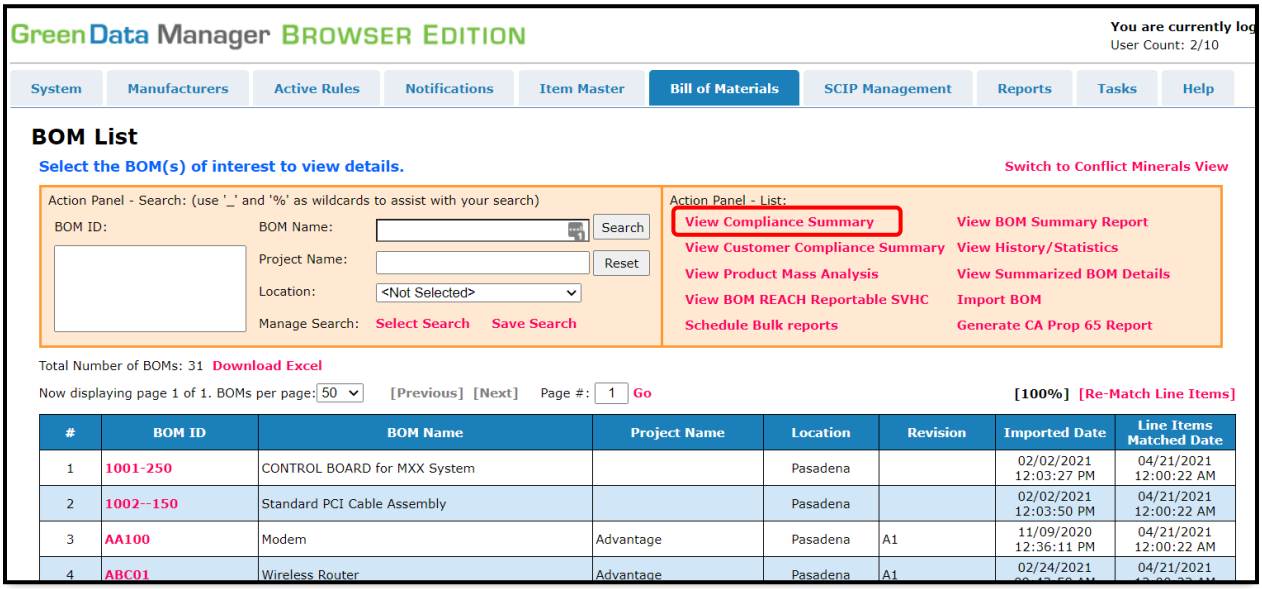


#	Internal PN	Manufacturer	Manufacturer PN	Description	Requirement Status	MCD Type	MCV Version	Lifecycle	Collection Status
1	001-BusCont001	GreenSoft Products	456-SFNE324234		Failed	None		Not Set	Not Set
2	001-BusCont002	GreenSoft Products	456-SFNE324234		Failed	None		Not Set	Not Set
3	001-BusCont003	GreenSoft Products	456-SFNE324234		Failed	Other	REACH SVHC (209)	Not Set	Not Set
4	001-DCFAN001	GreenSoft Products	123-SFNE001		Failed	None		Not Set	Not Set
5	001-DCFAN002	GreenSoft Products	123-SFNE001		Failed	None		Not Set	Not Set
6	001-DCFAN003	GreenSoft Products	123-SFNE001		Failed	None	REACH SVHC (209)	Not Set	Not Set
7	0022-10036-12	ON SEMICONDUCTOR	1SMB170AT3G	ZENER TRANSIENT VOLTAGE SUPPRESSOR,	Failed	None		Obsolete	Completed

Evaluating BOM Compliance Status

In this section, we will review the BOM Compliance Status page to determine which BOMs are confirmed to be compliant, which ones are confirmed to contain restricted substances, and which ones are at risk for noncompliance due to incomplete data. After determining these statuses, it is then possible to drill down and determine which parts are causing a failing or unknown status.

Step 1: Navigate to the **Bill of Materials** tab, which displays a list of BOMs. To view the compliance status of each BOM, click "View Compliance Summary" in the Action Panel.



#	BOM ID	BOM Name	Project Name	Location	Revision	Imported Date	Line Items Matched Date
1	1001-250	CONTROL BOARD for MXX System		Pasadena		02/02/2021 12:03:27 PM	04/21/2021 12:00:22 AM
2	1002--150	Standard PCI Cable Assembly		Pasadena		02/02/2021 12:03:50 PM	04/21/2021 12:00:22 AM
3	AA100	Modem	Advantage	Pasadena	A1	11/09/2020 12:36:11 PM	04/21/2021 12:00:22 AM
4	ABC01	Wireless Router	Advantage	Pasadena	A1	02/24/2021	04/21/2021

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BOM Compliance Summary

Note: BOMs filtered based on the following search conditions: None.

Total Number of BOMs: 31 **Download Excel**

Now displaying page 1 of 1. BOMs per page: 50 [Previous] [Next] Page #: 1 Go Return

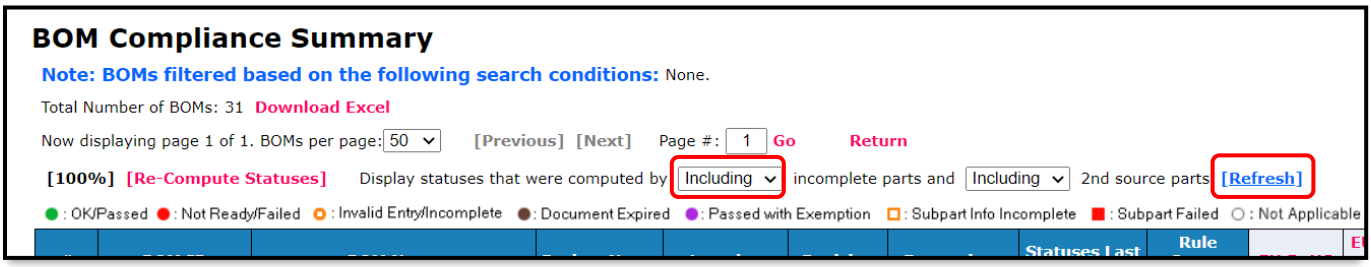
[100%] [Re-Compute Statuses] Display statuses that were computed by Including incomplete parts and Including 2nd source parts [Refresh]

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

#	BOM ID	BOM Name	Project Name	Location	Revision	Exemptions	Statuses Last Computed on	Rule Status Summary	EU RoHS	EU RoHS-2 New Substances	REACH SVHC (211)	TSCA - 5 Substances	TSCA - PIP 3:1
1	1001-250	CONTROL BOARD for MXX System		Pasadena		R2-6c, R2-7c1	4/19/2021 1:38:00 PM	●	●	●	●	●	●
2	1002--150	Standard PCI Cable Assembly		Pasadena			4/19/2021 1:38:07 PM	●	●	○	●	●	●
3	AA100	Modem	Advantage	Pasadena	A1	R2-6c, R2-7c1	4/19/2021 1:37:52 PM	●	○	○	●	●	●
4	ABC01	Wireless Router	Advantage	Pasadena	A1	R2-6c, R2-7c1	4/19/2021 1:38:42 PM	●	○	○	●	●	●
5	AT100	Wireless Router	Advantage	Pasadena	A1	R2-6c, R2-7c1	4/20/2021 11:43:10 AM	●	○	○	●	●	●
6	AT1015	Wireless Router	Advantage	Pasadena	A1	R2-6c, R2-7c1	4/21/2021 11:47:17 AM	●	○	○	●	●	●
7	AT1500	Wireless Router	Advantage	Pasadena	A1	R2-6c, R2-7c1	4/19/2021 1:39:13 PM	●	○	○	●	●	●
8	B16	Control Board M609 V2, DIV B from Location 2		Location-2		R2-7a, R2-7c1	4/19/2021 1:35:29 PM	●	●	○	●	○	○
9	B17	Control Board M2290, DIV-B from Location 2		Location-2		R2-6c, R2-7a, R2-7c1	4/19/2021 1:35:41 PM	●	●	○	●	●	●
10	C1	Control Board M550 from DIV-1		Location-1		R2-7a, R2-7c1	4/19/2021 1:33:56 PM	●	○	○	●	○	○

Step 2: You may click **[Re-Compute Statuses]** to ensure the displayed information is up-to-date. This process could take a while to complete depending on how many BOMs and parts are loaded.

Step 3: Make sure you display statuses that are computed by "Including" incomplete parts. This is important because it allows you to identify BOMs which are at risk for noncompliance due to incomplete data. Click **[Refresh]** to update the statuses.



Each row contains a BOM and its status with respect to the activated rules. The statuses described in the previous section have similar meanings at the BOM level in regard to TSCA PBT substances:

- Green circle: **No substances are reported present** in concentrations exceeding the regulation threshold for any parts in the BOM.
- Red circle: **At least one substance is reported present** in a concentration exceeding the regulation threshold for at least one part in the BOM.
- Orange circle: **The data is incomplete.** This BOM contains at least one part with an unknown status, which puts the product at **risk of noncompliance** due to these unknowns.
- Purple circle: The product passes due to an exemption. This will not occur because GDM does not track TSCA exemptions.

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Step 4: Click on a BOM to view the BOM Details page. In this example, notice that the BOM for AT1015 has a "Failed" status for TSCA – 5 PBT Substances. We can examine it further to find out which parts are causing it to fail.

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

#	BOM ID	BOM Name	Project Name	Location	Revision	Exemptions	Statuses Last Computed on	Rule Status Summary	EU RoHS	EU RoHS-2 New Substances	REACH SVHC (211)	TSCA - 5 Substances	TSCA - PIP 3:1
1	1001-250	CONTROL BOARD for MXX System		Pasadena		R2-6c, R2-7c1	4/19/2021 1:38:00 PM	●	●	●	●	●	●
2	1002--150	Standard PCI Cable Assembly		Pasadena			4/19/2021 1:38:07 PM	●	●	○	●	●	●
3	AA100	Modem	Advantage	Pasadena	A1	R2-6c, R2-7c1	4/19/2021 1:37:52 PM	●	○	○	●	●	●
4	ABC01	Wireless Router	Advantage	Pasadena	A1	R2-6c, R2-7c1	4/19/2021 1:38:42 PM	●	○	○	●	●	●
5	AT100	Wireless Router	Advantage	Pasadena	A1	R2-6c, R2-7c1	4/20/2021 11:43:10 AM	●	○	○	●	●	●
6	AT1015	Wireless Router	Advantage	Pasadena	A1	R2-6c, R2-7c1	4/21/2021 11:47:17 AM	●	○	○	●	●	●

The BOM Details page shows similar information to the Item Master page, but for parts contained in the selected BOM.

BOM Details

BOM ID: AT1015 **Project Name:** Advantage **Location:** Pasadena
BOM Name: Wireless Router **Revision:** A1 **Imported Date:** 11/03/2020 04:22:43 PM
External BOM ID: Advantage Plus 1500 **Exemptions:** R2-6c, R2-7c1
Rule 2 for Charts: EU RoHS-2 New Substances

Note: Parts maintained in GDM are having the unique combination of IPN + MFG + MPN. Return Switch to Conflict Minerals View

Number of Unique Parts:	32 [100.0 %]
Number of Unique Manufacturers:	20
Number of Parts that match with Item Master:	32 [100.0 %]
Number of Parts not matching with Item Master:	0 [0.0 %]
Number of Parts with Part Mass specified:	29 [90.6 %]

Action Panel: ☑ Include 2nd Source Delete this BOM

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
Click here to view all Subassemblies of this BOM

View Reports View Hierarchy Download Hierarchy View Extended Fields

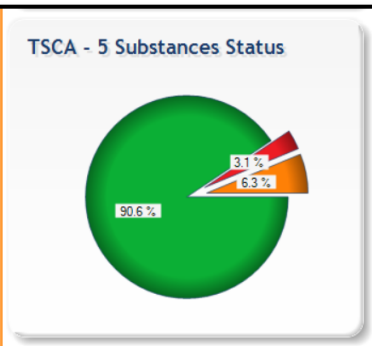
Step 5: Locate the charts corresponding to the TSCA rules to view how many parts fall under the different statuses. As with the Item Master page, you can now click on the number/percentage, or the portion of the chart, to view a list of parts which have the status. In this example, we will view a list of parts with the "Failed" status.

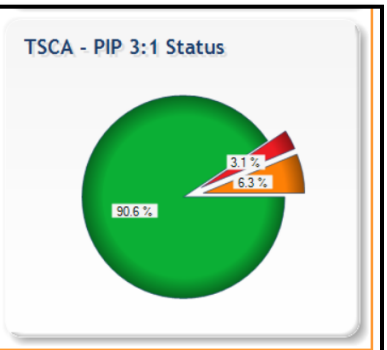
TSCA - 5 Substances:

Passed:	29 [90.6 %]
Passed with Exemption:	0 [0.0 %]
Failed:	1 [3.1 %]
Unknown/Incomplete:	2 [6.2 %]
Not Applicable:	0 [0.0 %]

TSCA - PIP 3:1:

Passed:	29 [90.6 %]
Passed with Exemption:	0 [0.0 %]
Failed:	1 [3.1 %]
Unknown/Incomplete:	2 [6.2 %]
Not Applicable:	0 [0.0 %]





Step 6: From the resulting BOM Parts List, you can click "Download Excel" to download an Excel spreadsheet for your own records.

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BOM Parts List

BOM ID: AT1015 **Project Name:** Advantage **Location:** Pasadena

BOM Name: Wireless Router **Revision:** A1 **Imported Date:** 11/03/2020 04:22:43 PM

External BOM ID: Advantage Plus 1500

Note: Parts filtered based on the following search conditions: TSCA - 5 Substances [Failed or Subpart Failed].

Total Number of Parts: 1 Download Excel

Now displaying page 1 of 1. Parts per page: 50 [Previous] [Next] [Show Standard Fields] Page #: 1 Go Return

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

#	Internal PN	Manufacturer	Manufacturer PN	2nd Source	Description	Requirement Status	MCD Type	MCV Version	Lifecycle	Collection Status	Exe
1	0030-01630-88	ELANTAS	V1630FS		VIKING ELEC INSUL COMP V1630FS??- DRYING AGENT	Passed	Full Disclosure FMD		Active	Completed and Delivered	

Now displaying page 1 of 1. Parts per page: 50 [Previous] [Next] Page #: 1 Go

Best Practices for TSCA PBT Validation

Performing validation of compliance to TSCA PBT restrictions requires that detailed data be collected from all suppliers of parts and materials within a given product. With short deadlines, companies are faced with the reality that they may not be able to achieve 100% validation from all suppliers prior to the restrictions coming into effect. Below are some best practices which can be referenced to lower the risk of non-compliance when defining a TSCA compliance plan.

- **Screen your parts for risk**, and set highest risk parts as first priority. For example, PIP 3:1 is at highest risk of being present in flexible PVC, Polyurethane, and Polyethylene materials. Any parts with such materials (such as cables with PVC jacketing), would constitute a higher risk of non-compliance than other parts. Parts known to not be at risk of containing these PBT compounds (for example, metallic screws and fasteners) can be screened out of the collection process.

  Setting a plan to require 100% coverage of high risk parts, while focusing collection resources on these parts first, will help to accelerate the data collection and validation process while lowering the overall risk of product non-compliance.

- **Update your procurement contracts** to ensure suppliers are aware of your requirements. Suppliers of parts and materials may make changes to the material content of their products without notification. To ensure continued compliance, supplier data must be verified on a regular basis. GreenSoft offers a data maintenance service which will keep this data fresh within six months to meet this requirement. However, these updates can uncover previously undisclosed changes.

  To avoid undisclosed changes which could invalidate TSCA PBT compliance status, GreenSoft recommends including compliance with the restrictions as a requirement in supplier purchase contracts.

  Including compliance to critical environmental compliance requirements in supplier purchase contracts will help lower the risk of suppliers making changes to parts or materials which might compromise the compliance status of your product.

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Conclusion

While evaluating your parts for TSCA PBT compliance, one of the most important rule statuses to look for is the "Incomplete" status. A status of "Incomplete" indicates insufficient data is available to validate compliance. This could be because (1) the supplier has not provided a full material declaration (FMD) or TSCA certificate of compliance indicating the restricted substances are absent, or (2) the supplier has provided a full material declaration (FMD) containing proprietary substances over TSCA PBT reporting thresholds, but has not also provided a corresponding TSCA certificate of compliance.

To fill the gaps in the data and resolve the parts with incomplete status, GreenSoft recommends adding TSCA PBT Compliance to the scope of your data collection project for customers using GreenSoft's Data Services. GreenSoft will collect detailed information on TSCA PBT substance content from suppliers, including details on exempted applications. To inquire about GreenSoft's TSCA PBT data collection and validation services, contact your Project Manager or contact GreenSoft's sales department at sales@greensofttech.com.

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