Best Practices for Considering Residuals and Impurities

Version: 2022-07-11

Effective date: 2022-07-11

The following Best Practices should be followed for considering and reporting Residuals and Impurities (R/I) in the HPD Open Standard.

GENERAL RULES

- The threshold applied to Residuals and Impurities (R/I) should be the same as the threshold applied to intentionally added substances, in terms of level (i.e., 100 ppm, 1000 ppm, per SDS, etc.) and whether applied to each homogenous Material or to the Product as a whole. In this document, this is referred to as the "declared Inventory Threshold" (*** See ADDITIONAL NOTES** at end of document for further explanation and examples). Residuals and impurities present below the declared Inventory Threshold do not need to be reported on the HPD.
- Only R/I that return a GreenScreen® score of BM-1, LT-1, LT-P1 or NoGS must be reported.
- Always use best available data; e.g. do not use Common Product[1] or generic data if better product or substance-specific data are available from SDS or other source.

PROCEDURE: Answer the following questions in order to appropriately consider and report R/I for your HPD:

QUESTION 1: Do you have evidence for the **PRESENCE** of R/I for your Product/Material based on direct testing, supplier SDS, or other supplier documentation?

YES: Consider and Report R/I as follows:
1) Note any R/I known to be present in the Product/Material at or above the declared Inventory Threshold* for your HPD
2) Determine the GreenScreen score for each of the R/I noted in (1) above

---

[1] A Common Product profile (CP) is a type of data record that describes the common content of a type of building product based on in-depth research using publicly available documents including specific product literature, transparency documents, trade association data, industry standards, and patents. CPs include a list of substances that were identified as commonly present in the product type, a list of additional possible but less common content, and process chemistry. Process chemistry information includes process chemicals associated with the common contents of the CP based on the Pharos database of process chemistry as well as additional process chemistry not associated with specific content that was identified through the Common Product research. The profiles are not specific to any manufacturer but provide a generic description of the content one might expect to find within a type of product. More information on the Common Product methodology is available here: https://pharosproject.net/common-products/methodology

3) All R/I noted above that return a GS score of BM-1, LT-1, LT-P1 or NoGS (previously "UNK") must be reported in the Content Inventory of the associated Material or Product (Section 2 of the HPD)

4) Proceed to **QUESTION 2** below

NO: Proceed to **QUESTION 2** below

QUESTION 2: Are there any additional/alternate substances used in your Product/Material at or above the declared Inventory Threshold***** that are not included in the "Common Contents" (Pharos) section of the Common Product for your product type?

YES: Proceed to **Path B**

NO: **Proceed to Question 3**

QUESTION 3: Is your type of product included in the "Common Product" list in Pharos (https://pharosproject.net/common-products)?

YES: Proceed to **Path A** on next page

NO:

> **Consideration of R/I can be considered complete. See R/I NOTES below for additional information on reporting R/I.**

PATH A Consider and Report R/I as follows:
1) Review the Common Product profile that aligns with your product type for R/I via:
   a) **"**Process Chemistry - Known or Potential Residuals" section of Pharos
2) Note any R/I that is not associated with a specific chemical in the CP and with "% Wt. Product" listed at or above the declared Inventory Threshold* **OR** listed as "Unknown" with a frequency of "Frequent", "Integral", or "Unknown"
3) Determine the GreenScreen score for each of the R/I noted in (2) above
4) All potential R/I noted above that return a GS score of BM-1, LT-1, LT-P1 or NoGS must be reported in the Content Inventory of the associated Product/Material (Section 2 of the HPD);
   a) The amount of substance with which that R/I is associated is used at a level below the declared Inventory Threshold*****; **and/or**
   b) There is documentation (e.g. SDS, supplier disclosure letter) to confirm that this particular R/I falls below the declared Inventory Threshold*
5) *Consideration of R/I can be considered complete. See R/I NOTES below for additional information on reporting R/I.*

PATH B   Consider and Report R/I as follows:
1) Review **"Process Chemistry - Known or Potential Residuals"** section of Pharos[2] for each intentionally added substance present in your Product/Material at or above the declared Inventory Threshold* (Pharos ▯Search Pharos ▯Process Chemistry)
   a) Currently considering adding exception for substances on specific "safer chemicals" lists, to be identified
   b) If there is no Process Chemistry tab for a substance present in your Product/Material include a note that R/I were considered based on Pharos process chemistry and no R/I information was available for this chemical.
   a) Note R/I with "Percentage" listed at or above the disclosed Inventory Threshold* (calculated based on amount of substance used in formulation) **OR** listed as "Unknown" and with a frequency of "Frequent", "Integral", or "Unknown"
2) Determine GreenScreen score for each R/I noted above
3) All potential R/I noted above that return a GS score of BM-1, LT-1, LT-P1 or NoGS (previously "UNK") must be reported in the Content Inventory of the associated Product/Material (Section 2 of the HPD); **unless** there is documentation (e.g. SDS or other supplier documentation) confirming that this particular R/I falls below the declared Inventory Threshold*****
4) **Proceed to QUESTION 3**

R/I NOTES

Residual and Impurities Notes for Product/Material should include the following statement/s (as applicable):

"Residuals and Impurities were considered based on [select any/all of the following that apply]"
- direct testing via (state methodology used)
- supplier SDS (must also include the following notification: "SDS may not identify all Residuals or Impurities present in this [Product/Material] that would require reporting on the HPD")
- supplier disclosure letter (include disclosure threshold provided – e.g. 1000 ppm for Product/Material)
- other type of documentation; please specify
- process chemistry via [Pharos]

And: If R/I were investigated, but no R/I required to be reported were identified
- Include the following statement: "No Residuals or Impurities are expected to be present at or above Content Inventory Threshold that return a GreenScreen score of BM-1, LT-1, LT-P1 or NoGS."

And: If an R/I is expected to be present in a considered substance (e.g. based on process chemistry via Pharos) but has been excluded from reporting, provide an explanation for this discrepancy (See **Path A**, 4 a-c above).

REFERENCES

* Declared Inventory Threshold

The Inventory Threshold for R/I reporting is based on the Inventory Threshold indicated and reporting method used for the HPD. Examples:

1. Manufacturer has chosen to use the "Nested Material Method" with a reporting threshold of 1000 parts per million (ppm) for each *Material*; then R/I should be considered to at least 1000 ppm for each *Material*
2. Manufacturer has chosen to use the "Nested Material Method" with a reporting threshold of 1000 ppm for the *Product*; then R/I should be considered to at least 1000 ppm for the whole *Product*
3. Manufacturer has chosen to use the "Basic Inventory" with a reporting threshold of 1000 ppm for the *Product*; then R/I should be considered to at least 1000 ppm for the whole *Product*

VERSION CONTROL

Changes from Version 2018-07-03 to 2022-07-11:

- Updated the procedure with Question 2 to provide a better Residual and Impurity process.
- Removed reverence to Quartz Project Database