Health Product Declaration Open Standard

Version 2.3

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The HPD Collaborative Board of Directors and staff extend our deepest appreciation to the many engaged participants from a wide range of industry sectors who have volunteered countless hours towards the creation of the HPD Open Standard. The HPDC Technical Committee and Technical Sub-Groups lead the evolution of the Standard, with support by HPDC Staff. Many individuals from design firms, manufacturers, and other organizations provided critical feedback and design support. We thank all involved for their support of the industry's leading standard for reporting, disclosure, and transparency for building product content and associated health information.

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1. Overview of the Health Product Declaration® Open Standard

1.0 About the Health Product Declaration® Open Standard

The Health Product Declaration (HPD) Open Standard provides a framework for product manufacturers and their ingredient suppliers to report and disclose information about product and associated health information. The HPD Open Standard is a consensus, stakeholder standard governed by the HPD Collaborative, a not-for-profit member organization.

The HPD Open Standard consists of:

- The HPD Open Standard Format (HPD Format) that presents a consistent structural framework for the visual presentation of data elements reported in a completed Health Product Declaration. Official blank HPD Formats are provided for each version of the HPD Open Standard on the HPDC website [www.hpd-collaborative.org/blank-hpds/].
- The HPD Open Standard Instructions (HPD Instructions) that specify precisely how the data elements included in the HPD are to be reported by the manufacturer or supplier completing the report. (This is the document you are currently reading.)
- Best Practices Guidance that is cited in the HPD Instructions and is available on the HPDC website [https://www.hpd-collaborative.org/emerging-best-practices/].

A report published in compliance with the HPD Open Standard is referred to as a completed “Health Product Declaration,” or “HPD.” HPD reports include Product HPDs, for complete products as delivered to the job site, and Supplier HPDs, for ingredients as delivered to a manufacturer.

A version of the HPD Open Standard is defined primarily by the publishing by HPDC of a significantly updated set of Instructions and Format. Best Practices Guidance documents are updated on a separate schedule, potentially more or less frequently than the release of a new HPD version. Best Practices documents therefore cover topics that may evolve more frequently than the core Instructions, and/or topics affected by changes made to programs outside of HPDC’s control.

1.1 Instructions

This document provides the Instructions required for a company to prepare a Health Product Declaration (HPD). Complete requirements for the HPD include the Best Practices Guidance provided on the HPDC website [https://www.hpd-collaborative.org/emerging-best-practices/].

The Instructions are organized to follow the sequence of reporting specified in the HPD Format:

- HPD Format section-by-section guidance that defines and explains requirements for each data element;
- Variations that expand on the section guidance to create a compliant HPD in specific situations;
- Checklist for a Compliant HPD, summarizes the requirements for a report to be considered a complete HPD, and compliant with the HPD Open Standard. Compliance is required for an HPD report to be published.
- Glossary of terms and programs cited,

In addition, the Best Practices Guidance provides more detailed information on the following topics:

- Hazard screening

- Additional listings
- Consideration of residuals and impurities
- Material and substance characterization
- Special conditions
- Quality control
- Pre-checks for consistency with other programs.
- VOC Emissions Testing

1.2 Scope

The Health Product Declaration Open Standard is the only authoritative reference for preparation of a Health Product Declaration.

1.3 HPD Open Standard Exclusions

The HPD Open Standard is:

- A specification for reporting product content and associated health information.

The HPD Open Standard is not:

- a method for the assessment of exposure or risk associated with product handling or use, or
- a method for assessing potential health impacts of:
    - substances used or created during the manufacturing process or
    - substances created after the product is delivered for end use.

Information about life cycle, exposure and/or risk assessments performed on the product, and any other relevant, explanatory information that the manufacturer wishes to provide that is not specified in the Standard, may be reported by the manufacturer in appropriate Notes sections, and/or, where applicable, in the Certifications section. Manufacturer's Safety Data Sheet (SDS), if applicable, may offer occupational health and safety information.

Packaging materials that are removed from the product prior to use and materials that are attached to or part of the product for identification purposes only, e.g., labels, tags, stamps, and other identifiers, are excluded from HPD inventory requirements. Product accessories, e.g. adhesives, fittings, cleaning products, are required to be reported but are listed separately in HPD Format Section 4 [See 2.4 for further guidance].

1.4 Preparing an HPD

A manufacturer is responsible for preparing HPDs for its products. The manufacturer may obtain third-party preparation and/or verification assistance. The HPD Collaborative (HPDC) website provides tools and additional information, including guidance to support different methods for preparing an HPD. HPDC tools are aligned and consistent with the HPD Open Standard and, when used together with the HPD Open Standard, assist the manufacturer and/or their representative in creating a complete and standard-compliant HPD.

HPDC-provided tools include:

- The HPD Builder, an interactive online tool that facilitates the creation and publishing of an HPD. It guides manufacturers to enter data, perform hazard screening, and format HPD reports to help ensure compliance with the HPD Open Standard.
- The Supplier HPD extension to the HPD Builder is an interactive online tool to facilitate entry of ingredient information by ingredient suppliers. It enables electronic communication and data exchange between manufacturers and their suppliers, and as an extension of the HPD Builder, it integrates with product-level reporting done by product manufacturers. It guides suppliers to enter data, perform hazard screening, and communicate within the supply chain, to help ensure compliance with the HPD Open Standard.
- Automated data exchange capabilities (APIs) to bring supply management data into the HPD Builder from third-party applications.

1.5 Publishing an HPD

1.5.0 Requirements for Publishing HPDs

Use of the HPD Open Standard format as a template for displaying data is governed under a Creative Commons license [see page 2, License for Use]. This license requires users of the format to follow all requirements of the HPD Open Standard, whether in published or unpublished status.

An HPD must be published to the HPD Public Repository to be considered “public,” “publicly disclosed,” “published,” or similar. Once an HPD is published, a manufacturer may take additional steps to publicly share it, e.g. posting on its website, sharing it with customers, and publishing it in public libraries and databases.

HPDC enforces quality requirements during the publishing process, and for all published HPDs. For more information on quality assurance, see the HPDC Quality Control Protocol on the HPDC website: https://www.hpd-collaborative.org/quality-control/.

An HPD must contain data that is accurate at the time of publication. Requirements for updating are addressed in 2.1.6.7: Expiry Date.

The product manufacturer and independent verifier, if used, are responsible for the accuracy of statements and claims made in an HPD and for compliance with the HPD Open Standard.

1.5.1 Tools for Publishing HPDs

In addition to providing tools for preparing HPDs [see 1.4 Preparing an HPD], HPDC provides the HPD Public Repository. The Repository is the authoritative and required location for published HPDs.

To support meeting all requirements of the HPD Open Standard, HPDC recommends that HPDs be published using an automated publishing feature via the HPD Builder. This automated process performs all required quality control checks.

There are two methods available for using this automated publishing feature:

- When a manufacturer creates an HPD using the HPD Builder, they may publish the HPD using the automated interface between the HPD Builder and the HPD Public Repository.

- Alternately, automated tools other than the HPD Builder may also access the HPD Builder automated publishing feature through the HPD Builder API. Manufacturers using other tools therefore also have access to this feature.

1.5.2 Use and Distribution of Unpublished HPDs

Incomplete HPDs, draft HPDs, or any other use of the official HPD Open Standard format to display data, that has not been officially published using the HPD Public Repository, or that has been withdrawn from publishing [see 1.5.3 Archived and Withdrawn HPDs] is considered an *unpublished* HPD.

- It is not permitted to represent an unpublished HPD as a "completed HPD," a "public HPD," or a "published" HPD, or to use or describe an unpublished HPD in any manner that would suggest that it is compliant with the requirements of the HPD Open Standard. This compliance can only be determined through the official process for publishing HPDs [see 1.5.1].
- Unpublished HPDs may not be shared with external parties or posted publicly, except as follows:
    - By express permission of HPDC or via participation in an HPDC pilot program.
    - As part of the research and publishing process, e.g., sharing unpublished HPDs internally within a company, as well as in direct communication with external suppliers or consultants who are helping to prepare the HPD.
    - Sharing directly and privately with a potential customer for review of product composition, along with a clear statement that the HPD is unpublished and cannot be used for project documentation.

Unpublished HPDs must be clearly distinguished from published HPDs.

- Unpublished HPDs must comply with the following data entry requirements to clearly distinguish them from published HPDs:
    - The "Publish date" and "Expiry date" fields [see 2.1.6.6 Published Date and 2.1.6.7 Expiry Date] should be left blank or state, "Not published."
    - No URL should be listed in the HPD footer [see 2.1.1.7 HPD URL].

- Unpublished HPDs must also incorporate one or preferably both of the following formatting changes to distinguish them from published HPDs:
    - Provide a prominent "Draft" or "Unpublished" watermark on all pages.
    - Provide a prominent change in the color on all pages, e.g., replace all orange in the HPD format with gray.

See the HPDC website for official blank HPD Formats [www.hpd-collaborative.org/blank-hpds/].

1.5.3 Archived and Withdrawn HPDs

Once published, a manufacturer may subsequently *archive* or *withdraw* an HPD.

- An archived HPD retains its "published" status. Archiving occurs automatically when the HPD's expiry date arrives [see 2.1.6.7 Expiry Date].
- A manufacturer may elect to withdraw an HPD from the HPD Public Repository after it is published. For example, a manufacturer may wish to withdraw an HPD published with erroneous data, especially if they are not ready to immediately fix the error. A withdrawn HPD will appear in a list of

"Withdrawn HPDs" in the HPD Public Repository but will no longer be available to download. A withdrawn HPD becomes "unpublished," and is subject to all requirements in 1.5.2: Use and Distribution of Unpublished HPDs.

1.6 About the HPD Collaborative

The HPD Open Standard was created and is maintained and evolved by the Health Product Declaration Collaborative (HPDC), a not-for-profit, member organization composed of, and led by, stakeholders throughout the building industry. HPDC is committed to the continuous improvement of building products through transparency, openness, and innovation throughout the product supply chain.

1.7 Updates to the HPD Open Standard

The HPD Open Standard is updated periodically under the governance of HPDC. These updates are undertaken as needed to support the continuous improvement process described above [see 1.5]. Improvements to the HPD Open Standard may be suggested by HPDC members or by non-members. They are considered by HPDC staff and its Technical Committee and recommended for approval by its Board of Directors. HPDC batches these updates into periodic new versions (such as v2.0), or "dot releases," such as v2.1. More information on HPDC's organizational processes and governance is available at www.hpd-collaborative.org.

In considering new data, formatting of data elements and/or introduction of new methods for the HPD Open Standard, or in evaluating the continued inclusion of existing elements, HPDC focuses on the following criteria.

1. **Quality of data:** Does the proposal support accurate, reliable and consistent reporting of data across products and product categories? Based on what we know about the underlying methodology, processes, and organizations producing and transmitting the data or other element, do we expect that it will continue to do so? Can a third-party verifier of an HPD systematically and deterministically find the appropriate documentary evidence to verify the reported data? Can we describe the methodology clearly in the HPD instructions, and/or in the external methodology or data source, so that different parties would be likely to reliably report the same element in the same way?

2. **Usefulness:** Is the proposal useful? The main intended "user" of the HPD is the building project team. Does it help project teams select and specify building products, with their decision informed with the best and most relevant health information about the product? Will other constituencies such as manufacturers, certifiers, researchers and others benefit from the change?

3. **Implementation:** What are the implementation requirements, and are they feasible? This criterion may consider HPDC-developed tools, tools of ecosystem partners, and the feasibility of manufacturers and users to update their methods and practices. An important goal of the HPD Open Standard is to ensure that the Standard is usable by a broad range of stakeholders.

3. **Strategic alignment:** Is the element under consideration aligned with the values, vision, mission and strategic objectives of the HPDC membership, more broadly? [See 1.5 About the HPD Collaborative.]

These criteria, as well as other considerations made by HPDC, may be considered independently from each other, or in coordination.

1.8 More information

For more information about the Health Product Declaration Open Standard, the HPD Collaborative, the most current versions of relevant documents, and future updates, visit www.hpd-collaborative.org.

2. HPD Open Standard Format Section-by-Section Guidance

2.0 Introduction

The Health Product Declaration (HPD) Open Standard specifies data and format requirements for reporting of product content, associated health information, and other information.
This includes:

- ***Product Content***. Product content may be reported via either a Basic Inventory or a Nested Materials Inventory. Manufacturers may select different thresholds for reporting content, such as 100 ppm, 1,000 ppm, etc. Product content may include parts, materials, and substances [See Section 5. Glossary for definitions of these key terms, as well as the sections that follow for context.]
- ***Associated Health Information***. Associated health information comprises information about human and environmental health hazards that are associated with the product content, as well as other information. Hazard screening is a process by which the individual substances are screened against listings from authoritative bodies for this health information. The HPD requires reporting of the results from hazard screening in a summary score using GreenScreen for Safer Chemicals, and listings of hazards and other information from relevant authoritative lists. See Section 2.2.2.4, and see Best Practices for Hazard Screening for further details [https://www.hpd-collaborative.org/emerging-best-practices/]. For further information on the GreenScreen for Safer Chemicals method, see [https://www.greenscreenchemicals.org].
- ***Other information***. Other information includes the quantity and role or function of the content, quantity of recycled content, VOC content and emissions information, and other details described in this document.

2.1 HPD Open Standard Format Section 1: Summary

2.1.0 Overview – HPD Open Standard Format Section 1

This section contains instructions for the first page of the HPD Format:

- general information about the product and manufacturer and the HPD itself that appears in the header and footer;
- summary information for the Content Inventory, Content in Descending Order of Quantity, Inventory and Screening Notes, VOC Content, Certifications and Compliance, LEED Pre-Check, any Special Conditions that apply, Third-Party Preparation and Verification, and Publication;

Entries in this Section are based on more detailed information provided in HPD Format Sections 2 and 3.

2.1.1 General Information

2.1.1.1 Product Name

Product brand name. The Product Name also appears in the Footer for each page of the HPD. If the HPD covers multiple brands, secondary brand names are listed in the Product Description [See 2.1.1.4]. Refer to Variations [See 3] for further guidance on how similar products and product lines are covered in a single HPD.

2.1.1.2 Manufacturer Name

Complete name of the company responsible for the final product. If this company is a subsidiary, the parent company is included in the Product Description [See 2.1.1.4].

2.1.1.3 HPD Unique Identifier

Identification code for a specific HPD, assigned by HPDC. This alphanumeric code is a unique, permanent identifier for a specific HPD that clearly and specifically identifies that document, and that supports sharing of the document in databases and libraries.

2.1.1.4 Classification

Identifier associated with the product. This should be a single six-digit Construction Specifications Institute MasterFormat® designation. For other cases:

- If other identifiers are appropriate, e.g., Uniclass, National Building Specification, NATSPEC, they may be listed in the Product Description [See 2.1.1.4].
- If multiple classifications apply, enter a single MasterFormat designation as a primary identifier, and list additional MasterFormat or other identifiers in the Product Description.
- If no classifications apply, e.g., if the HPD is for an ingredient or part and not a complete manufactured product, enter "N/A" for Classification with an explanation in the Product Description [See 2.1.1.4].

2.1.1.5 Product Type

Brief description of specific product type. This is a more specific field than 2.1.1.4 Classifications. Examples include "Gypsum Wallboard Type X," "Flexible Gypsum Board," and "Foil-Backed Gypsum Wallboard." Each example may be classified under either 092900 Gypsum Wallboard, or 092000 Plaster and Gypsum Board. The Product Type designation gives a more granular way of naming the product type reported in the HPD.

2.1.1.6 HPD Tool Reference

Reference to the tool used to create the HPD. Statement must read as follows: "Health Product Declaration® v2.2 created via [title of tool]." This statement also appears in the Footer of each page, along with "Page X of Y," e.g., Page 1 of 12.

2.1.1.7 HPD URL

Functional website link to the HPD Public Repository, the authoritative location for publication. This appears in the Footer of each page.

2.1.2 Product Content Inventory

Product content inventory requires reporting of information about product content as substances and/or materials. It is the manufacturer's responsibility to obtain and validate this information from internal and supply chain sources.

2.1.2.0 Inventory Reporting Methods

Methods for organizing and reporting information about content in an HPD. There are two methods for creating a content inventory:

- *Nested Materials Inventory Method.* Lists all materials and then lists content within each material above the reportable threshold. This method provides material level information

in a useful context that aligns with other product inventory, screening, and optimization programs. Either a “Per Material” or “Per Product” threshold can be used in a Nested Inventory [see 2.1.2.1].

- *Basic Inventory Method.* Provides a single list of content above the reportable threshold in the product. Only a “Per Product” threshold can be used on a Basic Inventory [see 2.1.2.1].

In either reporting method, two types of content may be listed [see Section 5: Glossary for full definitions]:

- Substance, i.e. a chemical.
    - A substance will always appear on an HPD as a “basic building block,” or elementary unit, of content. This is the same in either a Basic or Nested inventory.
- Material, i.e., a uniform solid, liquid, or gas composed of one or more substances and/or materials. A material differs from a Substance in that it may either appear:
    - As a “basic building block” of content in either a Basic or Nested inventory (alongside substances or other material content).
        - Wood veneer is an example of a material that would appear on an HPD as an elementary piece of content.
    - Or, as a Nested Material comprised of substances and/or materials.
        - Plywood is an example of a material that would be appropriate to inventory as a Nested Material on an HPD. As a Nested Material it would contain as content both a substance(s), i.e. adhesive, and a material, i.e., wood veneer.

2.1.2.1 Threshold: Reported Per Material or Per Product

Concentration(s) above which the manufacturer or supplier itemizes substances present within the material or product, as applicable.

- Per Material: A threshold is defined for each material. Content in each material is reported based on being at or above the specified threshold level within the material of which it is a constituent.
- Per Product: A threshold is defined for the entire product. Content is reported based on being at or above the specified threshold level within the entire product, regardless of whether content is reported as an ingredient of a material or as an independent constituent.

A Basic Inventory has a per-product threshold; a Nested Materials Inventory can have a single per-product threshold or multiple per-material thresholds. In Section 1, Summary, a single threshold must be indicated for the Basic and the Nested Materials Inventory with a per-product threshold; multiple thresholds can be indicated for Nested Materials Inventory with material-level thresholds, based on the thresholds for each material indicated in Section 2.

Options for thresholds are:

- 100 ppm
- 1,000 ppm
- Per GHS SDS [Globally Harmonized System of Classification and Labeling of Chemicals Safety Data Sheets]
- Other.

In a Nested Materials Inventory with thresholds for each material, different thresholds may be indicated within a single HPD if different materials in HPD Format Section 2 have been

itemized at different threshold levels. Thresholds may vary depending on material supplier knowledge and willingness to share information. Refer to Inventory Threshold [See 2.2.1.4] for related guidance.

2.1.2.2 Residuals and Impurities Evaluation

This indicator summarizes the results of the evaluation of Residuals/Impurities. See Section 2.2.1.5 for further explanation of method and results.

1. Basic Inventory. One of the following:
   - "Completed for Product": The evaluation was completed for all materials/substances in the Product.
   - "Partially Completed": The evaluation was completed for at least one but not all materials/substances in the Product.
   - "Not Completed": The evaluation was not performed for any materials/substances in the Product.
2. For Nested Materials Inventory. One or more of the following, as appropriate to the evaluation results.
   - "Completed": The evaluation was completed for all materials/substances in the Product..
   - "Completed in A of Y Materials in Product" where A is the number of materials in which the evaluation was completed for all contents and Y is the total number of materials in the Product.
   - "Not Completed": The evaluation was not completed for any materials in the Product. This includes materials in which some but not all substances were evaluated.

2.1.2.3 Characterized, Screened, Identified

Summary of the degree of reporting of unambiguous data in the product's content inventory provided in Section 2. This section of the HPD provides Yes/No indicators based on this statement: "For all content above the threshold, the manufacturer has:"

- **Characterized**: Provided weight and role (Yes/No)
- **Screened**: Provided screening results using HPDC-approved methods (Yes/No)
- **Identified**: Provided name and CAS RN or other identifier (Yes/No)

"Yes" indicates the response is true for all content inventoried at or above the stated Inventory Threshold [See 2.2.1.4] unless specifically allowed otherwise by the instructions in Variations, Special Conditions for Materials and Substances [See 3.2]. "No" indicates the response is not true for all content. See Format for required graphic layout: www.hpd-collaborative.org/blank-hpds/. Specific requirements for indicating "Yes" or "No" are specified throughout Section 2.

2.1.3 Content in Descending Order of Quantity

2.1.3.1 Content in Descending Order of Quantity

Nested Materials Inventory: Nested summary, in the order inventoried in HPD Format Section 2, of a product's materials, the content in each material, the GreenScreen score and the hazards associated with each constituent. Materials are listed from highest to lowest percentage by weight − Percent (%) − in the product. Each material has a secondary bracketed list of content ordered from highest to lowest percentage by weight in that material.

Following each constituent, the associated abbreviation for the GreenScreen Benchmark™ or List Translator Score and the abbreviation for each hazard type, as applicable, are indicated.

Basic Inventory: Summary, in the order inventoried in HPD Format Section 2, of the content in the product, the GreenScreen score and the hazards associated with each constituent. Content is listed from highest to lowest percentage by weight − Percent (%) − in the product. Following each constituent, the associated abbreviation for the GreenScreen Benchmark or List Translator Score and the abbreviation for each hazard type, as applicable, are indicated.

Both types of inventory summaries use abbreviations for GreenScreen scores and hazards per Section 2.6.2.1. Special Conditions may affect how some content is listed; see Section 3.2: Special Conditions. For clarity, each element in this summary is differentiated visually with color and shading as illustrated in the official blank HPD Formats: www.hpd-collaborative.org/blank-hpds/.

2.1.3.2 Number of GreenScreen BM-4/BM-3 contents

Number of substances in a product, if any, that have a full published for public use GreenScreen assessment with a score of either Benchmark-4 (prefer–safer chemical) or Benchmark-3 (use but still opportunity for improvement). Response must be substantiated by the information provided for each substance in HPD Format Section 2, GreenScreen [See 2.2.2.4].

2.1.3.3 Contents highest-concern GreenScreen score(s) (BM-1, LT-1, LT-P1)

Listing of any of the three highest-concern GreenScreen Benchmark or List Translator Scores among all of the substances in a product, i.e., BM-1, LT-1, and/or LT-P1. Response must be substantiated by the information provided for each substance in HPD Format Section 2, GreenScreen [See 2.2.2.4].

2.1.3.4 Nanomaterial

An indication of whether any substance in the product is a nanomaterial. Refer to Glossary [See 5] for definition. Response must be substantiated by the information provided for each substance in HPD Format Section 2, Nano [See 2.2.2.6], and must be one of the following:

- *If any substance is identified as a nanomaterial:* “One or more contents are a nanomaterial.”
- *If all substances are identified not to be nanomaterials:* “No contents are a nanomaterial.”
- *If no substance is identified as a nanomaterial, and it is unknown whether one or more substances is a nanomaterial:* “One or more contents are unknown.”

2.1.3.5 Inventory and Screening notes

Explanation of information provided in HPD Format Section 1: Summary. Extended descriptions may be continued in HPD Format Section 5: General Notes [See 2.5: General Notes] or in the allocated Notes spaces throughout HPD Format Section 2 [See 2.2.1.7: Material or Product Notes and 2.2.2.12: Substance Notes].

Required Entries:

- Explanation of each “No” answer to Characterized, Screened, and Identified [See 2.1.2.3].
- Identification of each relevant Special Condition, Notes required for that Special Condition.
- Explanation when “Other” is indicated for Threshold entry [See 2.2.1.4], unless provided in the Material or Product Notes.

Optional Entries:

- To augment the summary information in Threshold [See 2.1.2.1], and Characterized, Screened, Identified [See 2.1.2.3], this section may be used to identify the percentage of a product's materials or substances that correspond to particular aspects of disclosure. (For example: "Materials or Substances representing 95.0% of the product weight meet the 1,000 ppm Threshold and are Screened" or "For Materials or Substances representing 5.0% of the product weight, only SDS level disclosure is possible because suppliers declined to provide information.")

2.1.4 Volatile Organic Compound (VOC) Content

2.1.4.0 General Information on VOCs

The information that follows in Sections 2.1.4.1–2.1.4.3 must be provided for all liquid/wet-applied products.

If the HPD is for a product that is not liquid/wet applied, insert: "VOC content data is not applicable for this product category."

2.1.4.1 Material (g/l)

Numerical value of Actual/Material VOC content as the product is supplied. This is sometimes referred to as "VOCs as supplied" or "Applied VOCs."[1]

2.1.4.2 Regulatory (g/l)

Numerical value of Regulatory VOC content[2], also referred to as "Coating" content. Regulatory VOC content compares regulated, or non-exempt, VOCs against non-exempt volume. Water and exempt solvents are not included. If the product is a Low Solids Coating[3], "N/A" is indicated here.

2.1.4.3 Does the product contain exempt VOCs?

Indication of whether the product includes VOCs that are exempted by the U.S. Environmental Protection Agency (EPA).

- "Yes" indicates the product contains VOCs that are exempted by EPA from regulatory reporting and therefore will not be included in the VOC content totals[4].
- "No" indicates the product does not contain EPA exempted VOCs.
- If the product contains a substance that is an exempt VOC, "Exempt VOC" must be noted in the HPD Format Section 2 Substance Notes [See 2.2.2.12] for the corresponding substance.

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[1] Actual/Material VOC and Regulatory VOC are measures of VOC content that may be determined by either calculation or by testing. Acceptable methodologies include EPA Method 24 (calculated or tested) or ASTM D6886 testing (direct GC/MS determination) or as per the guidance given in California Air Resources Board (CARB) 2007 Suggested Control Measure for Architectural Coatings or South Coast Air Quality Management District (SCAQMD) Rule 1113, Rule 1168, or appropriate international methodology in use.

[2] This is a measure used by many regulatory agencies and is generally higher than "material" or "as supplied" VOC content.

[3] For Low Solids Coatings only the "Actual" VOC content is calculated for regulatory purposes. CARB Suggested Control Measure for Architectural Coatings: http://www.arb.ca.gov/coatings/arch/Approved_2007_SCM.pdf

[4] Exempted compounds refers to VOC compounds such as acetone and methylene chloride that EPA and some other governmental regulatory agencies exempt from smog-related reporting regulations because the chemicals are not reactive in the atmosphere and hence do not contribute to formation of ground level ozone, though they may be hazardous to human health if inhaled. The EPA list of exempted chemicals is listed in Code of Federal Regulations (CFR) Title 40, Section 51.100, subsection (s)(1). If the product contains exempt VOCs, these must be disclosed in the corresponding Section 2 chemical substance line item.

2.1.4.4 Are colorants available that do not increase the VOC content of the base paint when tinted?

Indication for tintable products of whether this type of colorant may be available at the point of retail sale. For tintable products:

- "Yes" indicates:
    - product is tintable,
    - and colorants do not increase the VOC content of the base paint for any combination of colorants,
    - and/or colorants that allow paints to meet Federal Trade Commission (FTC) guidance for VOC-free claims[5] are offered by the manufacturer to distributors for this product.
- "No" indicates that colorants meeting the above guidelines are not available from distributors of this product.
- "N/A" indicates the product is not tintable at the point of retail sale.
- For "Yes" or "No," also note:
    - The colorant system should be included as an accessory in Section 4: Accessories [See 2.4].
    - The name of the colorant system and how to obtain it must be provided in Accessory Notes.

2.1.5 Certifications and Compliance

2.1.5.1 Type of Certification, Name of Certification

Categories and Titles of the first four Certifications and Compliance entries, as indexed in HPD Format Section 3: Certifications and Compliance [See 2.3]. When applicable, certifications related to VOC Emissions and VOC Content are prioritized and must be listed first. Refer to the required graphic layout for this information in the official blank HPD Formats [www.hpd-collaborative.org/blank-hpds/].

2.1.5.2 Pre-Checked for Consistency with Other Programs (optional)

Preliminary indicator of consistency with specific requirements of third-party programs. A mechanical cross-checking of specific requirements for contribution of the HPD to programs such as LEED, and check of presence of entries for all fields required by HPD Open Standard. This pre-check does not assess data quality, compliance of the HPD with the HPD Open Standard requirements, or requirements for publication. See Best Practices Guidelines for Pre-Check for Consistency With Other Programs [https://www.hpd-collaborative.org/emerging-best-practices/] for requirements.

2.1.6 Preparation, Verification, Publication

2.1.6.1 Third-Party Verification

Indicator that HPD is third-party verified or not. Third-party verification is optional, but if "Yes," verification must use HPDC-approved verification organizations and Third-Party Verifier [see 2.1.6.3] must be filled in. If the HPD is third-party verified, an additional logo may appear in the header of the HPD; refer to the official blank HPD Formats: www.hpd-collaborative.org/blank-hpds/.

[5] See Enforcement Policy Statement regarding VOC Free Claims for Architectural Coatings https://www.ftc.gov/sites/default/files/documents/public_statements/voc-free-claims-architectural-coatings/130306ppgpolicystatement.pdf

2.1.6.2 Preparer (optional)

Party that prepares the HPD. The HPD can be prepared by the product manufacturer or a third-party organization; the manufacturer is responsible for the content in both cases. If prepared by the manufacturer, “Self-prepared” is inserted; if prepared by a third party, the name of the organization is inserted.

2.1.6.3 Third-Party Verifier (optional)

Party that checks the information in the HPD to ensure that it matches the supporting documentation. Verification is optional. Only HPDC-approved third-party verifiers qualify and the name of the verifying organization is inserted. Approved verification organizations are listed on the HPDC website [http://www.hpd-collaborative.org/third-party-verification]. Manufacturers cannot verify their own HPDs, and a verifying organization cannot verify an HPD it prepared. If a third party has not verified the HPD, “No” is indicated for Third-Party Verification [see 2.1.6.1].

2.1.6.4 Third-Party Verification Number (optional)

Unique identifier provided by the verifying organization [See 2.1.6.3] to track the verification of the HPD. If not third-party verified, this is left blank.

2.1.6.5 Screening Date

Date of hazard screening. The date of screening for listed content, per 2.2.2.10 Screening Date. If the HPD incorporates multiple screening dates, such as when the HPD relies on data screened by suppliers, the earliest of the screening dates must be indicated.

2.1.6.6 Published Date

Date of publication. The date on which the HPD is published in the HPD Public Repository [see 1.5 Publishing an HPD].

2.1.6.7 Expiry Date

Date of expiration. An HPD must contain data that is current as of the Screening Date and expires no longer than three years after the Screening Date [See 2.1.6.5].

The original Expiry Date is modified based on one or more of the following occurrences:

- An HPD must be revised within one year of a significant change in a product’s contents. A significant change is defined as the addition or removal of content. A change only in percent (%) weight does not require a revision unless it impacts whether content is present at or above the selected inventory threshold.
- The HPD Open Standard is updated on a regular basis, including both Major and Minor (also known as “dot”) Version updates.
    - Major Version updates are denoted as “version X.0,” (i.e., 1.0, 2.0). A new HPD may be published or an updated HPD republished using an outdated Major Version—Format and Instructions—for up to one year following the Release Date of the subsequent Major Version of the Standard. However, any HPD using an outdated Major Version will expire three years after the Release Date of the subsequent Major Version.
        - Example: An HPD using Version 1.0 after the Version 2.0 release on September 30, 2015 will expire three years after the Version 2.0 release on September 30, 2018.
    - Minor Version updates of the Standard (e.g. Version 2.1.1 or 2.2) include the correction of errata, updating to be aligned with underlying date-sensitive data sources (such as the GreenScreen methodology), and the addition of new data

elements that are typically optional. New HPDs created after the Release Date of a Minor Version update must be created compliant with the Minor Version update. Previously published HPDs using the current Major Version will still be valid through their expiry date. However, if such HPDs are updated, they must be updated using the current Minor Version update.

- Example: Major Version 2.0 release date is September 2015. If Minor Version 2.1 release date is January 2017, an HPD published prior to the Release Date of Version 2.1 can continue to be used until its expiry date. If that HPD is revised after January 2017, it must be republished using the Version 2.1 Format and Instructions.

When an HPD is revised, it is subject to the following requirements:

- All product content must be rescreened according to the HPD Open Standard hazard screening requirements.
- HPD Format Section 3: Certifications and Compliance must be reviewed and brought up-to-date, if necessary.
- Upon revision, the HPD is reissued with a new Screening Date, Publication Date, and Expiry Date. The previous HPD is archived according to instructions in 2.1.6.8 Archive Date.

2.2 HPD Open Standard Format Section 2: Content in Descending Order of Quantity

2.2.0 Overview – HPD Open Standard Format Section 2

This section characterizes the materials in a product and their content in a Nested Materials Inventory or in a Basic Inventory.

This section also includes an optional Part Inventory: an addition to the Nested Materials Inventory that enables the association of materials with parts of the product as they might appear in a bill of materials or assembly diagram.

The guidance below is for general situations. Refer to Variations, Special Conditions for Materials and Substances [See 3.2] and the Special Conditions guidance on the HPDC website [https://www.hpd-collaborative.org/emerging-best-practices/] for further guidance on special circumstances associated with specific materials and substances. Refer to the official HPD Formats [www.hpd-collaborative.org/blank-hpds/] for the required graphic layout for this information..

2.2.1 Material or Product

2.2.1.0 General Information on Materials and Products

As discussed in 2.1.2.0 Inventory Reporting Methods, the Content Inventory can be structured using one of two methods:

- Nested Materials Inventory Method
- Basic Inventory Method

The sections that follow provide instructions for both methods. When instructions are different for each method, the difference is noted in context.

2.2.1.1 Material or Product Name

Title of the Material (Nested Materials Inventory) or Product (Basic Inventory). Options include:

- For Basic Inventory: The product's name, as listed under 2.1.1.1 Product Name.
- For Nested Materials Inventory:
  - The material's trade name or brand (recommended).
  - A generic, descriptive name for the material.
  - "Undisclosed." Explain the rationale for nondisclosure in Other Material Notes [2.2.1.7].

2.2.1.2 Percent (%)

This item only applies to Nested Material Inventories. [Guidance in this section is also referenced in sections 2.2.2.3 and 2.2.3.3.]

Material's percentage in the final product by weight. A characteristic of the product rather than the material; it is assigned when the material is added to the product inventory.

- A fixed percentage is preferred. However, a percentage range may be provided, e.g., 3.0%–14.5%. An average or typical percentage may be included in the Other Material Notes [See 2.2.1.7] with an explanation of how the average was derived. Ranges should not exceed 20%, and should not exceed the limits defined in Variations, Listing Multiple Products in a Single HPD [See 3.1], except as follows:
  - If these limits are exceeded, a valid explanation must be included in 2.2.1.8 Other Material or Product Notes. Valid explanations include those listed in 3.1.1 Multiple Products with Content Differences Greater Than 10%. Explanations must be consistent with the requirements of Variations, Listing Multiple Products in a Single HPD [See 3.1].
- If the percentage of the material varies over time due to market availability, pricing or other similar factors, an explanation must be provided in the Other Material Notes [See 2.2.1.7].
- If the HPD is being used to describe several products that are generally similar in content but differ in the percentages of some materials, an explanation must be provided in the Other Material Notes [See 2.2.1.7]. Refer to Variations, Listing Multiple Products in a Single HPD [See 3.1] for further guidance.
- If the entry is for a substitute material (such as different species of wood used as a veneer), "Alternate" is indicated. As long as the primary material for which it is an alternate has a disclosed percent or percent range, "Alternate" is sufficient for disclosure of percentage for this material. Refer to Variations, Alternate Materials or Substances [See 3.2] for further guidance on alternate content.
- Percent weight determines the listing order of Materials and Substances. Contents are listed from highest to lowest. In case of a percentage range, the maximum percentage for the content is used to determine listing order. Ties in listing order between contents based on maximum percentage are broken by minimum percentage, if one is listed, with contents with higher values being listed before lower values.

2.2.1.4 Inventory Threshold

Concentration at or above which substances present within the material or product are itemized by the manufacturer (or supplier as applicable). Options include:

- **100 ppm**: Inventory includes substances at or above 100 ppm (0.01%) concentration in a material or product.

- **1,000 ppm**: Inventory includes substances at or above 1,000 ppm (0.1%) concentration in a material or product.
- **Per GHS SDS**[6]: Inventory of substances in a material or product meets the level of resolution required for Safety Data Sheets as prescribed by the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)[7]: substances that are identified as health hazards are reported at 1,000 ppm (0.1%) for reproductive toxicants, carcinogens, and Category 1 mutagens, and at 10,000 ppm (1%) for all other hazard categories.
- **Other**: Inventory of substances in a material or product is based on a completely different protocol, or has more or less stringent thresholds than any of those described above. When selected, an explanation must be provided in either the Inventory and Screening Notes or the Other Material or Other Product Notes.

The identified inventory threshold always applies to intentionally used substances intended to be constituents of a material or product and intended reaction products. The inventory threshold also applies if residuals and impurities have been evaluated [See 2.2.1.5].,

In a Basic Inventory, a single "Per Product" level threshold must be indicated. This denotes that all content present in the final product at or above the indicated threshold has been reported.

In a Nested Materials Inventory, there are two reporting options: the manufacturer may indicate a threshold for reporting as either "Per Material" or "Per Product":

- "Per Material": a threshold is indicated for each material listed. If inventory data for the content within a single material is obtained at multiple threshold levels, the least stringent threshold must be indicated, with further explanation provided in the Other Material Notes [See 2.2.1.7].
- "Per Product": a single product-level threshold is indicated. This threshold defines the level at which any content that is present at or above this level in the product must be listed under each material in which it is present.
    - It is possible that a material can be listed with no substances nested under it. This could occur if all substances in the material are below the Per Product level threshold indicated. If this is the case, an explanation must be provided in Other Material Notes [See 2.2.1.7].

If inventory data for the substances within a single material or within the product are obtained at multiple threshold levels, the least stringent threshold must be indicated, with further explanation in the Other Material Notes or Product Notes [See 2.2.1.7]. If using an optional Part inventory [See 2.2.3], all materials that appear within a Part must use the same threshold [See 2.2.3.3].

2.2.1.4 Residuals/Impurities

Indication of whether residuals and impurities have been evaluated for the material or product and included in the inventory.

[6] GHS SDS is targeted toward occupational safety during manufacturing. As a result SDS information does not always represent the actual composition of the final material (e.g., polyurethane foam). When relying on SDS information for a material, the Material Notes [2.2.7] are used to explain instances where the contents listed in the HPD represent solely inputs to a reaction product rather than reaction products and residuals. Refer to Special Conditions [See 3.5] for further guidance

[7] https://www.osha.gov/dsg/hazcom/ghsguideoct05.pdf

Manufacturers are required to report what has been done to evaluate Residuals/Impurities. The Evaluation is performed according to the *Residuals and Impurities Best Practices guidance* (see Best Practices document [link]).

- For a Basic Inventory, the Evaluation is reported for the Product, based on evaluation of the Materials/Substances reported in the Product
- For a Nested Material Inventory, the evaluation is reported for each Material reported in the Product, based on evaluation of the Materials/Substances reported in that Material

The Evaluation result for the Product (in a Basic Inventory) and for each Material (in a Nested Material Inventory) is reported with one of these statuses, or an intermediary status for Nested Materials inventories:

Completed

- "Completed" status means the manufacturer has followed the steps outlined in *Residuals and Impurities Best Practices* guidance to evaluate the presence of residuals and impurities in the material or product
- In addition to indicating the evaluation status, any identified residual or impurity that is known or has the potential to be present in the material or product above the Content Inventory Threshold must be listed in HPD Format Section 2: Content in Descending Order of Quantity as an individual line-item entry for the Product/Material in which it was found.
  - If the quantity of the Residual or Impurity is not known precisely, a range can be indicated for percentage weight.
  - If the manufacturer can demonstrate that an identified residual is not present at or above the indicated threshold, the residual does not need to be listed as a line-item in the inventory but an explanation of the rationale must be provided in the Residuals and Impurities Notes [See 2.2.1.6].
  - While it is acceptable to indicate that residuals and impurities have been evaluated completely when no identified residuals are listed as line items, a thorough methodological explanation in the Residuals and Impurities Notes [See 2.2.1.6] must justify this determination.
- Explanations must be provided in Residuals and Impurities Notes, following *Residuals and Impurities Best Practices guidance*. If status is "Partially Completed," explain why Evaluation was not able to be Fully Completed.

Not Completed

- Not Completed status means that either no evaluation of residuals/impurities was completed, or that an evaluation other than the *Residuals and Impurities Best Practices guidance* was employed.
- Provide an explanation in the Residuals and Impurities Notes, following *Residuals and Impurities Best Practices guidance*, for why the manufacturer has not evaluated residuals and impurities, or the basis for using a different methodology.

2.2.1.6 Residuals and Impurities Notes

Explanation of whether and how residuals and impurities evaluation was completed, not completed or partially completed. See Residuals and Impurities [2.2.1.5] for specific requirements.

2.2.1.7 Material Type

This item only applies to Nested Materials Inventories. A broad classification of a material based on chemical makeup and molecular structure. Select from a list of options the most accurate classification describing the material. Typical entries may include:

- Metal
- Ceramic
- Polymeric Material
- Glass

See Best Practices Guidelines for Material and Substance Characterization [https://www.hpd-collaborative.org/emerging-best-practices/] for a complete list.

2.2.1.8 Other Material or Product Notes

Explanation of material or product characteristics.

The required entries, if applicable, are as follows:

- explanation or rationale for nondisclosure if Material Name [See 2.2.1.1] is "Undisclosed" in a Nested Materials Inventory;
- explanation for ranges as required in 2.2.1.2 Percent (%) in a Nested Materials Inventory;
- explanation when "Other" is indicated for Inventory Threshold [See 2.2.1.4], unless provided in the Inventory and Screening Notes;
- explanation when inventory data for substances within a single material are obtained at multiple threshold levels in a Nested Materials Inventory or within a product in a Basic Inventory;
- explanation of variations among different products listed in a single HPD [See 3.1], if not addressed in Substance Notes [See 2.2.2.12] or General Notes [See 2.5].

Optional entries include:

- identification of primary materials that may be replaced by alternate materials or substances [See 3.1];
- references to reports or other published literature about exposure, risk or other qualities specific to the material in the product that may be relevant to understanding the context for its use.

When the Notes include qualifications related to context, e.g., chemical exposure or risk assessment, provide specific citations to relevant published reports, to be used by HPD users for verification or research.

2.2.2 Substance

2.2.2.0 General Information on Substances

Each substance in a material (Nested Materials Inventory) or product (Basic Inventory) that exceeds the established threshold is included with its own line item entry. Substances should be listed in descending order of quantity within the material or product.

2.2.2.1 Substance Name

Title of the substance. Options include the substance's specific scientific or technical name, trade name, generic name, "Undisclosed," or "Unknown."

- A name is required, along with an Identifier [see 2.2.2.2 Identifier], in order for the substance to be considered identified, and thus for the HPD to be marked "Identified."

- Providing the most useful, transparent name is recommended. However, individual chemicals may be specifically named in various ways, and there may not be a single name equally useful to all audiences. Thus, manufacturers have discretion in what Substance Name they provide, and may exercise judgment in making it as useful as possible to the widest range of users.
    - For example, “1H-Isoindol-1-one, 3,3'-(1,4-phenylenediimino) bis[4,5,6,7-tetrachloro-” is a highly descriptive name from a technical standpoint, but the names “C.I. Pigment Yellow 110” (a trade name), or simply “Yellow Pigment” (as a generic name) will be more understandable to a wider range of HPD users.
- To provide a higher level of transparency, manufacturers are encouraged to provide synonyms, either in parentheses in the Substance Name field, or in the Substance Notes. For example:
    - Yellow pigment (1H-Isoindol-1-one, 3,3'-(1,4-phenylenediimino) bis[4,5,6,7-tetrachloro-)
    - (Bromomethyl)[1-(naphthalen-1-yl)cyclohexa-2,4-dien-1-yl]-lambda~2~-germane (Brominated flame retardant)
- If providing a more generic name, manufacturers must provide some specificity about the chemical identity, e.g., by identifying the chemical class. In addition, the name should not be completely redundant with the Substance Role [2.2.2.7]. For example, enter “Brominated Flame Retardant,” not “Flame Retardant.”
- If the manufacturer chooses not to disclose the name of the substance in any fashion, “Undisclosed” must be indicated, with explanation of the rationale for nondisclosure in the Substance Notes [See 2.2.2.12], and the product cannot be indicated as “Identified” [See 2.2.2.2].
- If the manufacturer does not know the substance name, “Unknown” must be indicated. This is possible, for example, when the supplier has passed on content characteristics to the product manufacturer for inclusion in the HPD, but has redacted certain details. Efforts undertaken to identify the substance must be explained in the Substance Notes [See 2.2.2.12], and the product cannot be indicated as “Identified” [See 2.2.2.2] unless specifically allowed a Special Conditions [See 3.2].

2.2.2.2 Identifier

Identification code for the substance. Options include the substance’s Chemical Abstracts Service Registration Number (CAS RN), “Undisclosed,” “Unknown,” and “Not registered.”

- A CAS RN is required for the HPD to be indicated as “Identified” [See 2.1.2.3 Characterized, Screened, Identified], unless another type of identifier is specifically permitted by Special Conditions policies [See 3.2.]
- Enter “Undisclosed” if the identifier is known, but manufacturer elects to not disclose it publicly.
    - Explain the rationale for non-disclosure in the Substance Notes [See 2.2.2.12].
    - Using a closely related chemical’s CAS RN as the identifier is not allowed, whether for a non-registered or a registered substance. This is considered nondisclosure, and “Undisclosed” should be used instead. The identifier of the closely related substance *may* be included in the Substance Notes, with explanation. For example, a manufacturer may protect a trade secret by entering “Undisclosed,” while noting a closely related CAS RN in the Substance Notes [See 2.2.2.12], with explanation of this approach, to provide some transparency.
    - Note that manufacturers may disclose hazard information, even if not disclosing the Identifier. In this case, the HPD can be marked “Screened” [See 2.1.2.3

Characterized, Screened, Identified]. For guidance, see 2.2.2.4 GreenScreen, and 2.2.2.8 Hazards, Agency(ies) with Warnings.

- Enter “Unknown” if the identifier is unknown.
    - An explanation of why it is unknown and manufacturer efforts to identify it must be included in the Substance Notes [See 2.2.2.12].
- If multiple identifiers apply to the substance, choose one identifier to list as a primary identifier. Other relevant identifiers may be listed in the Substance Notes [See 2.2.2.12] as reference.
- Enter “Not registered” to indicate that no CAS RN or other identifier has been registered for this substance.
    - The rationale for non-registration must be explained in the Substance Notes [See 2.2.2.12] and the product cannot be indicated as “Identified” or “Screened” [See 2.2.2.2] unless specifically allowed by a Special Condition [See 3.2].
    - If the substance is new, manufacturers are encouraged to register a new CAS RN with the Chemical Abstracts Service. Then, report the new CAS RN as the identifier.

2.2.2.3 Percent (%)

Substance’s percentage, by weight, in the material (Nested Materials Inventory) or product (Basic Inventory). For the following instances, the same guidance applies as for “Percent” (%) [See 2.2.1.2] in the Material or Product section above, with explanation entered in the Substance Notes [See 2.2.2.12] instead of the Other Material or Product Notes [See 2.2.1.7]:

- ranges, variable amounts over time;
- ranges, similar products;
- alternate substances.

“Impurity/Residual” may also be displayed. See Residuals and Impurities [2.2.1.5] for specific requirements.

2.2.2.4 GreenScreen® for Safer Chemicals (GreenScreen)

Benchmark™ or List Translator™ scores. Possible GreenScreen v1.4 (see below for information on GreenScreen updates) scores are:

- BM-1: Benchmark-1 (avoid – chemical of high concern)
- BM-2: Benchmark-2 (use but search for safer substitutes)
- BM-3: Benchmark-3 (use but still opportunity for improvement)
- BM-4: Benchmark-4 (prefer – safer chemical).
- BM-U: Benchmark Unspecified (insufficient data to benchmark)
- LT-1: List Translator-1 (Likely Benchmark-1)
- LT-P1: List Translator-Possible 1 (Possible Benchmark-1)
- LT-UNK: List Translator-Unknown – the chemical is present on at least one GreenScreen Specified List, but the information contained within the list did not result in a clear mapping to a LT-1 or LT-P1 score. More research is needed to determine its hazard profile and whether it is a chemical of high concern.

The following score is not an official GreenScreen score but may appear on an HPD:

- NoGS: Used in the HPD to indicate the substance is not present on any GreenScreen Specified Lists, i.e., has received a GreenScreen List Translator score of NoGSLT, *and* does not have a freely and publicly available GreenScreen assessment and resulting Benchmark score.

GreenScreen Benchmark scores sometimes carry subscripts that provide context for how a score was determined. These subscripts are DG (data gap), TP (transformation product) and CoHC (chemical of high concern).

Each substance is scored as follows:

1. If the substance has a GreenScreen assessment that is published for public use, as defined in Best Practices for Hazard Screening, the Benchmark score is indicated. The score should be accompanied by an explanation in the Substance Notes [See 2.2.2.12] describing the source of the assessment, including: licensed profiler name, expiration date, and a direct link to the full assessment.
2. If a GreenScreen assessment is not available, the substance will be screened with GreenScreen List Translator and assigned a List Translator score (LT-1, LT-P1, or LT-UNK). This indicates the substance is present on one or more GreenScreen Specified lists.
3. If neither #1 nor #2 apply, the substance is assigned a “NoGS” score by the HPD, indicating that the substance is not present on any GreenScreen Specified Lists, i.e., has received a GreenScreen List Translator score of NoGSLT, *and* does not have a freely and publicly available GreenScreen assessment and resulting Benchmark score.

In addition to the scoring described above, the existence of a Certified GreenScreen assessment conducted by a Licensed GreenScreen Profiler for which the manufacturer holds license to make public claims, but which is not published for public use, may be indicated in the Substance Notes [See 2.2.2.12]. Private GreenScreen assessment scores cannot be reported on an HPD. If a private GreenScreen assessment has been done for a reported substance, the existence of this assessment, and the Licensed GreenScreen® Profiler who created the assessment, may be noted in the Substance Notes section.

The scores listed here are based on GreenScreen® for Safer Chemicals Hazard Assessment Guidance version 1.4. GreenScreen v1.4 is the current version as of the release of this HPD Open Standard. If a subsequent version of GreenScreen changes the possible scores prior to a new HPD version release, any updated requirements that affect HPD reporting will be posted in Best Practices for Hazard Screening [https://www.hpd-collaborative.org/emerging-best-practices/].

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2.2.2.5 Recycled content

Indication of whether the substance contains recycled content (RC). This field cannot be left blank.

- For substances with recycled content, “PostC” indicates post-consumer recycled content, and “PreC” indicates pre-consumer (post-industrial) recycled content. Refer to Glossary [See 5] for definitions.
- “Both” indicates the substance includes both post-consumer and pre-consumer (post-industrial) recycled content.
- “None” indicates the substance does not include pre- or post-consumer recycled content.
- “UNK” indicates the inclusion of recycled content is unknown.

For each substance with recycled content, the Substance Notes [See 2.2.2.12] must indicate the source of the recycled content, e.g., post-consumer water bottles.) Note: Refer Special Conditions [See 3.2] includes further guidance about reporting mixed recycled content.

2.2.2.6 Nano

Indication of whether the substance is a nanomaterial. Refer to Glossary [See 5] for definition. The following responses are acceptable; this field cannot be blank.

- "YES" indicates the substance is a nanomaterial.
- "NO" indicates it is not a nanomaterial.
- "UNK" indicates that it is unknown whether the substance is a nanomaterial or not.

2.2.2.7 Substance Role

Select a term that captures the substance's purpose or function in the product or material. Examples include: binder, antimicrobial, flame retardant, catalyst, preservative, etc. See Best Practices Guidelines for Material and Substance Characterization [https://www.hpd-collaborative.org/guidelines-for-material-and-substance-characterization/] for a complete list of suggested entries.

- Further explanation of a particular substance can be included in the Substance Notes [See 2.2.2.12].
- An approved entry in this field is required for all substances for the HPD to be indicated as "Characterized" [See 2.1.2.3].

2.2.2.8 Hazard Listings

Hazard types, agencies, and warnings associated with a substance as identified by the HPD Priority Hazard Lists. For each substance, the HPD must list, in three columns:

1. Hazard Type – applicable hazard categories.
2. *Agency and List Titles* – the agencies that issued the hazard warnings. Use abbreviations specified in Best Practices for Hazard Screening
3. Warnings –the specific hazard warning issued.

The following are additional requirements for hazard screening:

- Each substance is screened against all HPD Priority Hazard Lists, and all required warnings are reported. Use of additional lists or warnings is not permitted.
- If a substance is not matched on any of the Priority Hazard lists by substance name and CAS RN, or by synonyms (names or additional CAS RNs), or by the chemical grouping policy provided in Best Practices for Hazard Screening, "None found" is indicated in Column 1 and "No warnings found on HPD Priority Hazard Lists" is indicated in Column 3.
- Each Hazard Type for which a substance is listed receives a line-item entry.
- If a single List has shown that there are multiple hazard types for a substance, but has not specified which particular hazard types apply, "Multiple" is indicated for the Hazard Type.

The following guidance is for situations when information is not available from a supplier or is withheld by the manufacturer, in part or in full. Also see 2.2.2.1 Substance Name, 2.2.2.2 Identifier, and 2.1.2.3 Characterized, Screened, Identified:

- In all cases, hazard screening must be performed and disclosed.
- If hazard screening information is reported, but the manufacturer chooses to not disclose one or more substance name(s) and identifier(s) as Confidential Business Information, the HPD can be marked "Screened" but not marked "Identified."

- If hazard screening information is reported but the manufacturer cannot obtain the substance's name and identifier (CAS RN) from a supplier due to the supplier's claim of Confidential Business Information:
  - If the substance hazard screening information is provided by the supplier using an HPD-compliant process (automated tool or Supplier HPD) the manufacturer may report the hazard screening information without directly obtaining or reporting the substance's identity. The HPD may be marked "Screened," but not "Identified."
  - If the manufacturer cannot obtain either the substance's identifier or hazard screening information, "Hazard screening not performed" is entered in Column 2, with no information entered in Columns 1 and 3. The HPD may not be marked "Screened" or "Identified." An explanation must be provided in the Substance Notes [See 2.2.2.12] regarding the manufacturer's efforts. .

Hazard screening results must be consistent, reliable, and verifiable. In support of this, HPDC has published Best Practices for Hazard Screening [https://www.hpd-collaborative.org/emerging-best-practices/]. This guide includes methods for list updating, chemical grouping, and automation. It also defines which HPD Priority Hazard Lists must be screened on the HPD, how they are abbreviated, and which warnings are reported[8].

2.2.2.9 Hazard Data Source

Source of hazard data. Hazard screening of chemical substances must be conducted through an automated tool as the source of data. For each substance, enter name of tool used, e.g., Pharos Chemical and Materials Library.

2.2.2.10 Screening Date

Date on which substance was screened. Enter the date the GreenScreen score was identified for the substance, and the substance was screened against hazard listings and additional listings [see 2.2.2.4, 2.2.2.8, and 2.2.2.11].

2.2.2.11 Additional Listings

Additional listings and notifications associated with a substance as identified by Best Practices for Additional Listings [https://www.hpd-collaborative.org/best-practices-for-additional-listings/]. These listings complement the information disclosed in 2.2.2.8 Hazard Listings. The Best Practices identify the specific Additional Listings that are eligible for use in an HPD. Use of listings or notifications not specifically identified is not permitted.

Additional Listings are reported in three columns, as follows:

1. Additional Listing – category of listing
2. Agency – the organization responsible for the list's definition
3. Notification – title of listing and relevance.

- Screening a substance against Additional Listings is required.
- If the manufacturer and/or supplier do not wish to disclose the substance name or identifier, follow guidance in 2.2.2.8 Hazard Listings for displaying Additional Listings while keeping substance identification confidential.

[8] In previous versions of the HPD Open Standard, some of this information was contained in Appendix C: HPD Priority List Criteria, Appendix D: HPD Priority List Sources, and Appendix E: HPD Priority List Warnings.

- If no Additional Listings are associated with a substance, no entry is necessary, and this section does not appear on the HPD.
- If the substance is "Unknown," per 2.2.2.1: Substance Name, and 2.2.2.2: Identifier, no entry is necessary for Additional Listings, and this section does not appear on the HPD.

2.2.2.12 Substance Notes

Explanation of the substance's characteristics.

Required entries:

- explanation if Substance Name [See 2.2.2.1] and Identifier [See 2.2.2.2] are "Undisclosed" or "Unknown." The manufacturer must explain the rationale for nondisclosure for "Undisclosed" substances and efforts undertaken to identify "Unknown" substances. The manufacturer is encouraged to indicate if there is a time horizon for the non-disclosure, e.g., a pending patent application filing or other temporary intellectual protection or market advantage issue, and the existence of and time limits associated with a non-disclosure agreement (NDA) in place with the supplier;
- additional CAS RNs, if the substance can be identified by multiple CAS RNs;
- explanation if GreenScreen assessment is referenced but is not published and available for public use [see 2.2.2.4];
- explanation for ranges as required in 2.2.2.3 Percent (%);
- explanation of source if GreenScreen response is a Benchmark score from a full GreenScreen assessment [See 2.2.2.4];
- description of recycled content, if applicable [See 2.2.2.5];
- notation of "Exempt VOC" if the product contains a substance that is an EPA exempt VOC [See 2.1.4.3];
- explanation of variations among different products listed in a single HPD [See 3.1], if not addressed in Other Material or Product Notes [See 2.2.1.7] or General Notes [See 2.5].

Optional entries include:

- other relevant identifiers, if more than one identifier has been assigned to this substance [See 2.2.2.2];
- further explanation of role of a substance [See 2.2.2.7];
- identification of primary substances that may be replaced by alternate substances [See 3.2];
- the information source for substance information, such as a Supplier HPD or an SDS;
- references to reports or other published literature about exposure or risk or other qualities specific to the substance that may be relevant to understanding the context for its use. When the Notes include qualifications related to context, e.g., chemical exposure or risk assessment, provide specific citations to relevant published reports, to be available to HPD users for research on and verification of Notes statements.

2.2.2.13 Additional Structured Data Fields

Additional fields as needed to completely characterize, screen, and/or identify the substance according to Special Conditions guidance. Specific data fields may be added as required and considered relevant by Special Conditions guidance for specific classes of substances. See Best Practices for Special Conditions for specification of these fields: [https://www.hpd-collaborative.org/special-conditions/].

- Special Conditions will specify:
    - under what circumstances additional structured data fields should appear;

    - whether a given field is required or optional;
    - and what the data entry requirements are.
- Data fields not specified by Special Conditions may not appear.

2.2.3 Material

2.2.3.0 General Information on Materials

Each item of material content in a material (Nested Materials Inventory) or product (Basic Inventory) that exceeds the established threshold is included with its own line item entry. Material content should be listed in descending order of quantity within the material or product.

See 2.1.2.0 Inventory Reporting Methods for explanation of the two ways in which materials can be reported on an HPD—as elementary content, i.e., "basic building blocks" of a product, and as a Nested Material. The instructions below apply to material as elementary content as inventoried per a Special Condition, e.g., wood veneer, or quarried stone. Also see Section 5: Glossary.

Specific requirements for reporting of materials as elementary content on an HPD are defined in Special Conditions [see 3.2, and https://www.hpd-collaborative.org/special-conditions/]. The following instructions specify the overall reporting requirements and data fields that are utilized in common by the various Special Conditions.

2.2.3.1 Material Name

Title of the material. Options include the material's specific name, generic name, or "Undisclosed."

- If the manufacturer chooses not to disclose the name of the material, "Undisclosed" must be indicated, with explanation of the rationale for nondisclosure in the Material Notes [See 2.2.3.12]. If one or more materials are indicated as undisclosed, the product cannot be indicated as "Identified" [See 2.1.2.3].

2.2.3.2 Identifier

Material identification code or descriptor. Enter an identifier appropriate to the material type, following Special Conditions guidance [https://www.hpd-collaborative.org/special-conditions/].

- Appropriate identifiers for specific material types are defined in Special Conditions. Examples may include UNS codes for metal alloys, or a simple descriptor such as "Electronics" for an electronic component.
- "Undisclosed" indicates that the manufacturer knows the identifier and chooses not to disclose. The rationale for non-disclosure must be explained in the Material Notes [See 2.2.3.12]. If one or more materials are indicated as undisclosed, the product cannot be indicated as "Identified" [See 2.1.2.3] unless specifically allowed by the instructions in Special Conditions [See 3.2].
- "Unknown" indicates that the manufacturer does not know the material identity. An explanation of why it is unknown and manufacturer efforts to identify it must be included in the Material Notes [See 2.2.3.12]. If one or more materials are indicated as unknown, the product cannot be indicated as "Identified" [See 2.1.2.3] unless specifically allowed by the instructions in Special Conditions [See 3.2].

- If more than one identifier has been assigned to this material, other relevant identifiers may be listed in the Material Notes [See 2.2.3.12].

2.2.3.3 Percent (%)

Material's percentage, by weight, in the material (Nested Materials Inventory) or product (Basic Inventory). For the following instances, the same guidance applies as for "Percent" (%) [See 2.2.1.2] in the Material or Product section above, with explanation entered in the Material Notes [See 2.2.3.12]:

- ranges, variable amounts over time;
- ranges, similar products;
- alternate materials.

2.2.3.4 GreenScreen® for Safer Chemicals (GreenScreen)

Benchmark™ or List Translator™ scores. See 2.2.2.4 for information on GreenScreen scores. See Special Conditions [https://www.hpd-collaborative.org/special-conditions/] for instructions based on the type of material. In most cases, identifying a GreenScreen Benchmark or List Translator score for a material is not practical, and "Not required" is entered. The Special Condition may also specify the removal of this field from display on the HPD.

2.2.3.5 Recycled content

Indication of whether the material is recycled. This field cannot be left blank.

- For material with recycled content, "PostC" indicates post-consumer recycled content, and "PreC" indicates pre-consumer (post-industrial) recycled content. Refer to Glossary [See 5] for definitions.
- "Both" indicates the material includes both post-consumer and pre-consumer (post-industrial) recycled content.
- "None" indicates the material does not include pre- or post-consumer recycled content.
- "UNK" indicates the inclusion of recycled content is unknown.

For each material with recycled content, the Material Notes [See 2.2.3.12] must indicate the type of product(s) from which the recycled content is obtained.

2.2.3.6 Nano

Indication of whether the material is a nanomaterial. Refer to Glossary [See 5] for definition. The following responses are acceptable; this field cannot be blank.

- "YES" indicates the material is a nanomaterial.
- "NO" indicates it is not a nanomaterial.
- "UNK" indicates that it is unknown whether the material is a nanomaterial or not.

2.2.3.7 Material Role

Select a term that captures the material's purpose or function for inclusion in the product or material. Examples include: structure component, substrate, electronic component, etc. See Best Practices Guidelines for Material and Substance Characterization [https://www.hpd-collaborative.org/guidelines-for-material-and-substance-characterization/] for suggested entries. See also Special Conditions guidance [https://www.hpd-collaborative.org/special-conditions/] for specific instructions per material type.

Further explanation can be included in the Material Notes [See 2.2.3.12]. The role for each material must be identified in order for the product to be indicated as "Characterized" [See 2.1.2.3].

2.2.3.8 Hazard Listings

Hazard types, agencies, and warnings associated with a material as identified by the HPD Priority Hazard Lists. For each material, the HPD must list, in three columns:

1. applicable hazard categories,
2. agencies that issued the hazard warnings,
3. and the specific hazard warning issued.

See Special Conditions guidance for specific instructions on how to complete this section based on the type of material [https://www.hpd-collaborative.org/special-conditions/]. In most cases, “Not required under this Special Condition” is entered. The Special Condition may also specify the removal of this field from display on the HPD.

2.2.3.9 Additional Listings

Additional listings and notifications associated with a material as identified by Best Practices for Additional Listings [https://www.hpd-collaborative.org/best-practices-for-additional-listings/], with applicability to the type of material defined by Special Conditions guidance [https://www.hpd-collaborative.org/special-conditions/]. These listings complement the information disclosed in 2.2.3.8 Hazard Listings. The Best Practices identify the specific Additional Listings that are eligible for use in an HPD. Use of listings or notifications not specifically identified is not permitted.

Additional Listings are reported in three columns, as follows:

1. Additional Listing – category of listing
2. Agency – the organization responsible for the list’s definition
3. Notification – title of listing and relevance.

- Screening a material against Additional Listings is required if it is specified by Special Conditions.
- If the manufacturer and/or supplier do not wish to disclose the material name or identifier, follow guidance in 2.2.2.8 Hazard Listings for displaying Additional Listings while keeping identification confidential.
- If no Additional Listings are associated with a material, no entry is necessary, and this section does not appear on the HPD.
- If the material is “Unknown,” per 2.2.3.1: Material Name, and 2.2.3.2: Identifier, no entry is necessary for Additional Listings, and this section does not appear on the HPD.

2.2.3.10 Hazard Data Source

Source of hazard data. See Special Conditions guidance for specific instructions on how to complete this section based on the type of material [https://www.hpd-collaborative.org/special-conditions/]. In most cases, “HPDC Special Conditions Policy” is entered.

2.2.3.11 Screening Date

Date on which material was screened. Enter the date the hazard screening information was identified for the material.

2.2.3.12 Material Notes

Explanation of the material’s characteristics.

Required entries:

- explanation if Material Name [See 2.2.3.1] and Identifier [See 2.2.3.2] are “Undisclosed” or “Unknown.” The manufacturer must explain the rationale for nondisclosure for “Undisclosed” material and efforts undertaken to identify “Unknown” materials;
- explanation for ranges and alternates as required in 2.2.3.3 Percent (%);
- description of recycled content, if applicable [See 2.2.3.5];
- explanation of variations among different products listed in a single HPD [See 3.1], if not addressed in Other Material or Product Notes [See 2.2.1.7] or General Notes [See 2.5].

Optional entries include:

- further explanation of role of a material [See 2.2.3.7];
- identification of primary materials that may be replaced by alternate materials [See 3.2];
- the information source for material information, such as a Supplier HPD or an SDS;
- references to reports or other published literature about exposure or risk or other qualities specific to the material that may be relevant to understanding the context for its use. When the Notes include qualifications related to context, e.g., chemical exposure or risk assessment, provide specific citations to relevant published reports, to be available to HPD users for research on and verification of Notes statements;

2.2.3.13 Additional Structured Data Fields

Additional fields as needed to completely characterize and screen the material according to Special Conditions guidance. Depending on the type of material content, specific data fields may be added as required and considered relevant by Special Conditions guidance. For example, for electronic components, the indication of a take-back program is considered relevant and may appear as a specific field. See Best Practices for Special Conditions for specification of these fields: [https://www.hpd-collaborative.org/special-conditions/].

- Special Conditions will specify:
  - under what circumstances additional structured data fields should appear;
  - whether a given field is required or optional;
  - and what the data entry requirements are.
- Data fields not specified by Special Conditions may not appear.

2.2.3 Part (optional)

2.2.3.0 Part Inventory Display

In a Nested Materials Inventory, materials may be grouped into parts in an optional “Part Inventory Display,” when this information has been provided by one or more suppliers using the Supplier HPD. This display enables the association of materials with “parts” of the product, as they might appear in a bill of materials or assembly diagram. It also allows composition data from Supplier HPDs to be represented on a Product HPD.

For example, an office chair might be listed with several parts such as a base assembly, arm assembly, cushion, etc. Parts may be nested within parts, so the chair base assembly may contain, for example, a cylinder, caster assembly, and base, and the caster assembly may in turn contain additional parts such as a wheel, hub, etc.

The part inventory display does not have to represent the entire product, i.e., if the manufacturer has this level of information on only one part, the part inventory can list just that one part.

Associated health information and other details about materials and substances are reported in the regular content inventory section, which precedes this information.

2.2.3.1 Part Name

Title of the part. This should be descriptive of the part of the product, as it might be identified in a bill of materials or assembly diagram. Multiple parts may be listed in descending order of quantity within the product, or in another structure, such as a numbered list corresponding to a parts diagram.

2.2.3.2 Material Threshold

Material threshold. This repeats information given at the material level—see 2.2.1.4 Inventory Threshold. All materials listed in a part must use the same material threshold, e.g., 1,000 ppm.

2.2.3.3 Material Name

Title of the material. The title should correspond to the title used in the content inventory, above. The same guidance applies as for 2.2.1.1 Material or Product Name. Note that materials may appear multiple times in the part inventory, if they appear in multiple parts.

2.2.3.4 Percent (%)

Material's percentage in the part. The same guidance applies as for "Percent" (%) [See 2.2.1.2] in the Material or Product section above.

2.2.3.5 Part Notes (optional)

Additional explanation of part inventory. This optional section at the end of the part inventory display may be used to describe additional information for the HPD User, e.g., a URL linking to a parts diagram.

2.3 HPD Open Standard Format Section 3: Certifications and Compliance

2.3.0 Overview – HPD Open Standard Format Section 3

This section lists certifications or compliance documentation that the manufacturer has obtained. Certifications must be applicable to the product reported on the HPD. Certifications typically include applicable compliance information for VOC emissions and VOC content. At the manufacturer's discretion, other types of health, environmental, durability, or performance testing or certifications may be provided. Multi-attribute certification programs may be listed, e.g., Cradle to Cradle Certified™, or level®. Manufacturers may list certifications or documentation applicable to the facility producing the product, or at the corporate level, such as a corporate sustainability report (CSR).

In addition to listing third-party certifications, second-party claims (those made by a trade association or other interested party) or self-declared claims may be listed.

2.3.1 General Requirements

Certification or testing is not required for completion of an HPD. However, an entry is required for VOC Emissions for all products [See 2.3.3.1], and an entry is required for VOC Content for wet-applied products [See 2.3.3.2]. VOC Emissions is always listed first. VOC Content, when applicable, is listed second. Refer to Name of Certification or Compliance [See 2.3.3].

A multi-attribute certification program may only be used to document compliance for VOC Emissions, VOC Content, or other specific criteria if either the program requires a certain minimum level of performance (e.g., ANSI/NSF 140-2015 – Gold for VOC Emissions), or there is a published scorecard demonstrating that the product met a specific level of performance.

Other product certifications and standards not directly related to content and health should not be included here. Listing of certifications and standards relating to other product attributes may be included in HPD Format Section 5: General Notes [See 2.5].

The HPD does not provide a structure for claims about a product's compliance with project-level rating system requirements, e.g., LEED®, BREEAM®, Living Building Challenge™, Sustainable Sites Initiative™, WELL Building Standard®. Claims about a product's compliance with such rating system requirements may be listed in HPD Format Section 5: General Notes [See 2.5], and must be explicit about the specific requirement, the applicable program version, and any special conditions of compliance.

2.3.2 Type of Certification

Category of compliance, such as "VOC Emissions," "VOC Content," "Multi-attribute," "Recycled content," etc. Required entry.

2.3.3 Name of Certification or Compliance

Title of the standard or certification program. Required entry.

2.3.3.1 VOC Emissions

An entry is required for VOC Emissions for all products.

- If the product has been certified under a program that requires California Department of Public Health (CDPH) Standard Method[9] compliant VOC emissions testing, e.g., Indoor Advantage Gold™, FloorScore®, or Greenguard Gold, indicate the building type scenario applied, unless it was certified against both the office and schools scenarios, e.g., "SCS Indoor Advantage™ Gold – Residential," and any other special qualifications associated with the certification or standard compliance, such as "formaldehyde free."
- If the product has not been certified under a program that uses the CDPH Standard Method but has been tested by an independent laboratory against the CDPH Standard Method and passed, that test must be indicated along with the building type scenario applied, e.g., "CDPH Standard Method V1.1 – residential scenario." Also list any other special qualifications associated with the certification or standard compliance, such as "formaldehyde free." Note that at this time the CDPH Standard Method lists emissions scenarios only for insulation and interior products but also includes provisions for adapting the loading scenarios to certain other product categories. See Best Practices for VOC Emissions Testing on the HPDC website for details [https://www.hpd-collaborative.org/emerging-best-practices/]. Add "Adapted loading" to the Certification and Compliance Notes [See 2.3.10] if the product has been tested using applicable CDPH Standard Method provisions for adapting scenarios to other product categories.

[9] For more on the CDPH Standard Method, a full list of the interior product categories for which there are appropriate emissions scenarios, and a list maintained by USGBC of programs that are known to adhere to the CDPH Standard Method or to AgBB, see Appendix F.

- If the product has been certified or tested against the international emissions standard AgBB, that certification or standard must be indicated along with any special qualifications associated with the certification or standard compliance.
- A multi-attribute certification program may be used to supply the required entry for VOC Emissions if either the program requires a certain minimum level of performance (e.g., ANSI/NSF 140-2015 – Gold for VOC Emissions), or there is a published scorecard demonstrating that the product met a specific level of performance. Provide a short notation in Certification and Compliance Notes [see 2.3.10] to indicate this approach. A link to the published scorecard under Certificate URL [see 2.3.9] is required.
- If the product has not been certified or tested against the CDPH Standard Method or AgBB:
    - If the current version of the CDPH Standard Method does not provide an appropriate emissions scenario for the product type, and the product type cannot be tested using applicable CDPH Standard Method provisions for adapting the scenarios, "N/A" must be indicated. Note that there is no emissions scenario for exterior products.
    - If the current version of the CDPH Standard Method provides an appropriate emissions scenario for the product type, or the product type can be tested using applicable CDPH Standard Method provisions for adapting the scenarios, "CDPH Standard Method – Not tested" must be indicated.
    - If the manufacturer is in the process of having the product tested, an explanation may be provided in the Certification and Compliance Notes [See 2.3.10] of when testing or certification results are anticipated.
    - If the product meets LEED criteria for an "inherently non-emitting source," then "Inherently non-emitting source per LEED" may be indicated.[10]
    - In addition to the first listing referring to CDPH Standard Method or AgBB as outlined above, if a product has been certified or tested against an emissions test method that is not based on CDPH Standard Method or AgBB, that certification or test method may be listed second. For certifications, list the test method in the Certification and Compliance Notes [See 2.3.10].

2.3.3.2 VOC Content

An entry is required for all products:

1. For any product, interior or exterior, that is wet/liquid-applied on site, i.e., paints, adhesives and other coatings:
    A. If the product has received a certification that addresses VOC content levels, or a third-party laboratory certificate for VOC content testing, the name of that certification or test method is indicated.
    B. If the product is compliant with one or more of the regulatory standards applicable to the product category that limit VOC content, such as SCAQMD Rule 1168, SCAQMD Rule 1113 or the CARB 2007 Suggested Control Measure for Architectural Coatings, the name of each applicable standard with which the product complies is indicated.
    C. Otherwise, reference the standard that was used to determine Actual [2.1.15] and Regulatory [2.1.16] VOC content values.
2. For product categories that are not wet/liquid-applied, VOC Content is not applicable. In this case, enter in Section 1 Volatile Organic Compound (VOC) Content: "VOC content data is not applicable for this product category" [See 2.1.4]

[10] Refer to the LEED Credit Library for full credit requirements: http://www.usgbc.org/node/2614095?return=/credits/new-construction/v4/indoor-environmental-quality

2.3.3.3 Multi-attribute

Listing health- or content-related multi-attribute certifications is optional but encouraged, if applicable certifications exist for the product.

- Using a multi-attribute certification to demonstrate compliance with specific VOC emissions, VOC content, or other criteria, may only occur if either the program requires a certain minimum level of performance, or there is a published scorecard demonstrating that the product met a specific level of performance. For VOC emissions, see 2.3.3.1 for more details. For other criteria, clearly describe the approach in 2.3.10 Certification and Compliance Notes.

2.3.4 Certifying Party

Type of party that is attesting to the claim. Required entry. Options include:

- Self-declared: Claim made by the manufacturer, i.e., first party. This also includes tests by an outside laboratory if a third party is not certifying the sample selection and chain of custody.
- Second Party: Claim certified by a trade association or other interested party.
- Third Party: Claim certified by an independent third party or audited/inspected by a government agency. A test result from an independent outside laboratory does not qualify the claim as third-party certified. For a certification program to qualify as Third Party, a third-party certifier must manage the chain of custody for sample selection and approve adherence to the standard.

2.3.5 Issue Date

Date of the certification or test. Required entry. Provide the issuing date for the second- or third-party certification or the lab test report date for the first-party declaration.

2.3.6 Expiry Date

Date of expiration for the certification or test. Required when applicable. May be left blank when there is no expiration date, as in with a self-declared claim.

Note on eligibility of certificates: As a practical measure to reduce barriers to publishing HPDs in a timely way, certificates may be listed with Expiry Dates as old as one year *prior* to the Published Date of the HPD [see 2.1.6.6: Published Date]. There may be occasions in the normal course of business, particularly with certificates that require annual renewal, when a certificate may lapse for a period of time. As long as all other requirements in this section are met, an expired certificate may be listed. An explanatory note is required in section 2.3.10: Certification and Compliance Notes.

2.3.7 Certifier or Lab

Name of the certifying body or laboratory. Required entry. For a second- or third-party certification, the name of the certifier must be provided. For a self-declared claim using an independent laboratory, the name of the laboratory that did the testing must be provided. “None” indicates no outside testing was done to validate the manufacturer claim.

2.3.8 Applicable Facilities

Location(s) of specific manufacturing facilities for which the standard or certification applies, including the city, state, and country. Required entry. "All" indicates that all of the manufacturer's facilities are covered by this standard or certification.

2.3.9 Certificate URL

Functional website link to the documentation of the certification. Required entry.

- For all claims, certificates must demonstrate applicability to the product reported on the HPD.
    - Preferably, the certificate should list product name(s) that match the product name(s) [see 2.1.1.1] listed on the Product HPD.
    - If the name(s) do not match:
        - Either the certification is not applicable and should not be listed on the HPD,
        - or a note must be provided in Certification and Compliance Notes [see 2.3.10] demonstrating how the certificate is applicable to the Product HPD. For example, an update in product branding that does not affect product formulation may explain the discrepancy, or the certificate may apply to a part of the product but not the whole,
        - or, the certification applies to the facility or manufacturer corporation, and a note must be provided in Certification and Compliance Notes [see 2.3.10] demonstrating how the certificate is applicable to the Product HPD.
- For self-declared claims, a valid entry may include a link to a letter or other documentation attesting to the claim on the manufacturer's or a testing laboratory's letterhead.

2.3.10 Certification and Compliance Notes

Explanation of the certification or compliance.

Required entries are:

- limitations of the certification, e.g., It applies only to part of the product;
- explanation of applicability, e.g., if the product(s) named on the certificate do not match the product(s) named on the HPD;
- for expired certificates, brief confirmation that the listed certificate remains applicable to the product reported on the HPD, and where to find an updated certificate when it becomes available;
- and, for VOC Emissions, an explanation of the building-type scenario under which the product was qualified [See 2.3.3.1].

Encouraged entries include:

- for VOC Emissions, information about pending testing or certification results [See 2.3.3.1];
- for corporate sustainability reports, if the report is compliant with a specific framework such as the Global Reporting Initiative (GRI), and its scope relative to the environmental impacts of the manufacturer's product, and the product's supply chain, including extraction operations.

2.4 HPD Open Standard Format Section 4: Accessories

2.4.0 HPD Open Standard Format Section 4 Overview

Required listings here include products or accessories that are required or recommended for installation, cleaning, or operations and maintenance. Manufacturers may list any combination of products made by them or other manufacturers, or a generic product type.

In completing this section, note that its intention is to provide a complete picture of the product relative to health attributes. If a product requires a specific adhesive, it is most useful to complete a separate HPD for that product and list it here. Even if the specific product does not have an HPD, listing it here provides information that users can use for their own research. Finally, even if the manufacturer chooses not to list a specific product here, listing a generic product type, e.g., “Adhesive,” indicates to the user that an adhesive is required for the product.

Multiple accessories are listed separately. If not listing any accessories, enter “No accessories are required for this product” in 2.4.1 Accessory Product Name.

2.4.1 Accessory Product Name

Name of the recommended or required product.

2.4.2 HPD URL

Functional website link to an HPD for the accessory product or material, or “NA” if None Available.

2.4.3 Accessory Type

Select from a list of common accessory types, such as:

- Adhesive
- Fastener
- Cleaning Product
- Colorant System
- Lubricant
- Maintenance Product
- Installation Accessory
- Other (Enter type).

2.4.4 Manufacturer

Enter the name of the manufacturer of the accessory product. In many cases, this will be the same manufacturer completing the HPD. If unable to list a specific manufacturer for any reason, enter “Generic” and complete the other sections of 2.4: Accessories with as much detail as possible.

2.4.5 Notes

Any notes useful to understanding the role of the accessory. Include explanation of conditions for use, e.g., “for all installations,” “for exterior installations,” “during routine maintenance.” For listed wet-applied products, such as adhesives or diluents, the typical VOC content must be indicated if there is no HPD URL provided. Information about any other relevant characteristics may also be included. For tintable products, the name of the colorant system and how to obtain it must be provided.

2.5 HPD Open Standard Format Section 5: General Notes

2.5.0 HPD Open Standard Format Section 5 Overview

This section contains additional explanations that are not covered by the section-specific notes.

2.5.1 Required Entries

Required entries are:

- explanation of variations among different products listed in a single HPD [See 3.1], if not addressed in Material or Product Notes [See 2.2.1.7] or Substance Notes [See 2.2.2.12];
- and definition of the scope of the HPD when products are composed of combinations of parts [See 3.4].

2.5.2 Optional Entries

Optional entries include:

- secondary product brand names [See 2.1.1.1];
- secondary classifications [See 2.1.1.3];
- extended product descriptions [See 2.1.1.4];
- extended descriptions of inventory and screening notes [See 2.1.3.5];
- product compliance with aspects of project-level rating systems [See 2.3.1];
- explanations about variations in product content or assemblies [See 3.2 and 3.3];
- illustrative diagrams, such as an annotated axonometric drawing;
- references to reports or other published literature about exposure or risk specific to the product, or other issues that may be relevant to help the specifier or end-user further interpret information documented in other HPD Format sections.

2.6 HPD Open Standard Format Section 6: References

2.6.0 HPD Open Standard Format Section 6 Overview

This section contains manufacturer contact information. It also includes a key to abbreviations and select glossary terms.

2.6.1 Manufacturer information

Responses for each item must be provided.

2.6.1.1 Manufacturer
Manufacturer/Company Name.

2.6.1.2 Address
Manufacturer's complete primary street address including Address, City, State/Province, Postal Code, Country.

2.6.1.3 Contact Name

First and last name of the manufacturer's staff person responsible for the HPD. This person is responsible for the validity of the HPD and attests that it is accurate and complete to the best of his or her knowledge. This entry requires a specific person's name, not a department name or other general corporate entity.

2.6.1.4 Title

Position of the manufacturer's staff person responsible for the HPD.

2.6.1.5 Phone

Telephone number for the manufacturer's staff person responsible for the HPD.

2.6.1.6 Email

Electronic mail address for the manufacturer's staff person responsible for the HPD.

2.6.1.7 Website

Link to the manufacturer's website that includes information specific to the product. The complete URL must be included.org

2.6.2 Key

This section provides concise definitions for several data entry responses that appear in the HPD. This includes:

- Hazard Types
- GreenScreen scores
- Recycled content types
- Other terms

See the official blank HPD Formats on the HPDC website for this text; www.hpd-collaborative.org/blank-hpds/].

3. Variations

3.0 Introduction

This chapter addresses potential variations that might be appropriate in specific situations and may be used to create a compliant HPD. These include:

- Listing multiple products or products with variable content in a single HPD:
- Special conditions for materials or substances.

3.1 Listing Multiple Products or Products with Variable Content in a Single HPD

3.1.0 Multiple Products in a Single HPD

Multiple products can be listed in a single HPD subject to the following requirements. These provisions may be used to list similar products in a specific "product line" on a single HPD, and to produce HPDs for modular or customized products. Subject to these requirements, there is no limit to the number of products that can be listed.

A series or category of products may be grouped together in a single HPD *if all of the following apply*:

- the products serve a similar function; AND
- the products have identical content OR the content differences between the products or product types account for *10% or less of the total mass* of each product (with the exception described in 3.1.1); AND
- all information provided in HPD Format Section 3: Certifications and Compliance [See 2.3] applies to each product listed, including same program or type of certification and same level of certification. The products do not need to be included on a single certification document to meet this requirement. If there are multiple certifications covering the products, multiple certifications can be included.

Instructions for listing multiple products or product types in a single HPD:

- Include all content present in any of the products or product types listed at or above the selected Threshold(s) in the Content Inventory.
- For all products, use the same inventory approach (Basic or Nested inventory [see 2.2.1.0]), the same type of threshold (product-level or material-level [see 2.1.2.1]), and the same actual threshold (100 ppm, 1,000 ppm, etc. [see 2.2.1.4]). A Nested inventory is strongly encouraged but only required in some instances [See 3.1.1 Multiple Products with Content Differences Greater Than 10%, and 3.1.4 Products Composed of Combinations of Parts].
- Explain all variances between the grouped products in Other Material or Product Notes [See 2.2.1.7] and/or Substance Notes [See 2.2.2.9], if possible, or in Section 5: General Notes [See 2.5].

3.1.1 Multiple Products with Content Differences Greater Than 10%

There is no upper limit on content differences when multiple similar products are reported on a single HPD if:

- All other requirements in 3.1.0 Multiple Products in a Single HPD are met, AND

- The HPD uses a Nested inventory method [see 2.2.1.0], AND one of the following exceptions apply:
    1. The variation in content beyond 10% is due to varying proportions of materials and substances (typically due to the same product being available in different sizes or shapes), and not due to varying composition of the product.
    2. The variation in content beyond 10% is principally due to geographical differences that do not affect the identification or description of the product, and where there is a strong likelihood that publishing multiple HPDs would be confusing to HPD users.

The following examples are given for illustration only. Manufacturers with specific questions are encouraged to contact Technical Support at hpd-collaborative.org:

- Exception #1 examples:
    - Allowed cases:
        - A one-meter and a 50-meter cable having the same chemical ingredients, when the greater-than-10% variation is because the end connectors form a much smaller proportion of the longer cable.
        - Two different carpet tiles when the greater-than-10% variation is due to proportional differences in the quantity of backing compared to other materials.
        - Faced insulation products with varying thicknesses when the greater-than-10% difference is caused only by proportional differences between the insulation content and facing.
    - Disallowed cases:
        - A one-meter and 50-meter cable when one cable contains an additional sheathing layer, and thus additional chemical ingredients.
        - Multiple carpet tiles when the chemical content varies by more than 10% due to differing additives in dyes, face fiber, or backing, etc.
        - Multiple insulation products when the addition of chemicals of concern such as flame retardants accounts for greater than 10% variation.

- Exception #2 examples:
    - Allowed cases:
        - A concrete block manufacturer has 25 different mix designs across several plants. All the mixes are sold as identical products, with all meeting the same ASTM specifications, the same color, and the same function. The ingredients are functionally similar but may vary significantly due to regional differences, e.g. the aggregate from two difference sources varies significantly in its absorption properties and calls for significant variations in other ingredients. Twenty-five different HPDs would be confusing for HPD users who may not be able to distinguish which one applies to the product they have specified.
        - A joint compound manufacturer with 12 plants formulates its product with as much as 30% variation in the water content based on the humidity of the region, the climate, and the altitude. There is no difference in the labeling or marketing of the product, and geographical distribution boundaries of formulations may also vary.
    - Disallowed case:
        - A ceramic tile manufacturer uses several major ingredients in its tiles, all of which can vary significantly. While some of that is due to geographical variations, the wide variation covers different product lines and colors of tile that could effectively be reported on multiple, distinct HPDs with reduced content differences.

3.1.2 Alternate Materials or Substances

When different materials or substances are used to create a product, substitute content(s) may be included in the Content Inventory as alternate(s).

- Alternate content(s) and its characterization is included in Section 2: Content in Descending Order of Quantity [See 2.2], but are not reflected in HPD Format Section 1: Summary [See 2.1.3].
- Alternates are listed with the percent weight that they would represent if they were included in the product formulation.
- The term “ALT,” “ALTERNATE,” or another clear indicator, is listed after the Percent (%).
- The sequence of contents in Section 2 accounts for percent weight as typical, and is not affected by the Alternate designation.
- The Notes (either Other Material Notes [2.2.1.7], Substance Notes [2.2.2.9], or Material Notes [2.2.3.12]) must indicate that the substance or material is an alternate, and what primary ingredient it is an alternate to, e.g., “ALTERNATE: This substance is an alternate substance to [Name of Primary Substance].”

3.1.3 Colorants

Pigments, inks, dyes, and other colorants that are present at or above the selected Threshold(s) in the Content Inventory are required to be reported on an HPD.

The provisions in this section apply to colorants for all of the products or product types covered by the HPD, as detailed in Product Description [See 2.1.1.5] and/or General Notes [See 2.5]:

- For products with some colorant substances being used in only one or a few products or product types, and/or being used at varying percentages, list individual colorant substances with a percent weight from 0% to a maximum percentage, with an explanation provided in Substance Notes [See 2.2.2.12].
- The maximum percentage of any colorant substance possible in any of the product variations covered by an HPD must be considered and reported in the Content Inventory if it is at or above the selected Threshold(s).
- Substances in addition to the pigment itself, such as solvents, carriers, and fillers, must be considered and reported in the Content Inventory if they are at or above the selected Threshold(s).

For products, such as paint, that are formulated and produced as a base product, it may not be feasible to report the full range of possible colorant substances, particularly when they are added by different suppliers in the product distribution process. Manufacturers in this situation may take the following approaches:

1. Complete an HPD for the base, untinted product, and/or
2. Complete one or more HPDs for tinted product(s) [see 3.1.4 Products Composed of Combinations of Parts].

For either approach, the following steps are required:

- In Product Name [See 2.1.1.1], include an appropriate term to indicate the scope of colorants, such as “Base,” “Untinted,” “Red Color Family,” “Barn Red,” etc.
- In Product Description [See 2.1.1.5], include additional brief description of how colorants were or were not reported in the HPD.
- In Accessories [See 2.4], the colorant system should be included as an accessory. [See also 2.1.4.4.]

3.1.4 Variable Composition Due to Multiple Suppliers

If the product varies in composition because there are multiple suppliers for a single material or substance, this variability must be described to the extent possible. At a minimum:

- Use the HPD report to describe product composition as sourced from the primary supplier, as well as known composition from alternate suppliers;
- Provide an explanation in Other Material or Product Notes [See 2.2.1.7] reporting that supplier variability may affect composition;
- When providing ranges for percent weight, start with 0% to indicate an ingredient is not always present, to a maximum percentage, with an explanation in Other Material or Product Notes [See 2.2.1.7].

3.1.5 Products Composed of Combinations of Parts

When a product is a combination of discrete or modular parts assembled to form a unitary whole, some or all of the parts may be interchangeable. Examples include items like carpet systems (where a style may be produced with different optional carpet face fibers, backings, and adhesive or other installation systems), and chairs (where different armrests or legs may be used). Refer to Glossary [See 5] for definition of "part." In such cases, the product manufacturer may define the scope of the HPD to ensure that it:

- clearly indicates in the Product Description [See 2.1.1.4] the combination(s) that are included/excluded, with further explanation in Section 5: General Notes [See 2.5], as necessary;
- includes all substances at/above the selected Threshold(s) [See 2.2.1.4] for at least one complete product[11];
- and includes all substances at or above the selected Threshold(s) for all included parts for secondary combinations according to guidelines for Alternate Materials or Substances [see 3.1.2].

The manufacturer may opt to publish:

1. A single HPD that includes the most relevant combination(s) of the product, as determined by the majority of sales or some other measure.

2. A series of HPDs, each describing complete assembled products that, together, account for most or all possible combinations. Each HPD in the series might include product options for which the variability in content is limited and the hazard profile is similar. For example, fabrics using one set of dyes (with a distinct hazard profile) may be inventoried in one HPD, while those with another set of dyes may be inventoried in another HPD.

3. A series of Supplier HPDs which individually cover discrete parts that, together, may be used in combination with each other to inventory the complete product.

[11] If a Product Category Rule (PCR) exists for use in an Environmental Product Declaration (EPD), best practice is to assess if the product definition outlined in the PCR can also apply to the HPD. Note: this recommendation only pertains to defining product boundaries; the product's content inventory still must be created following the HPD guidelines herein – not per PCR/EPD guidelines. Unlike for other impacts captured by the EPD, small percentages can be very significant for health considerations.

A Nested inventory method [see 2.2.1.0] is required for all situations except those where the HPD covers only a discrete part.

The approach taken must be clearly explained on the HPD. Cross-referencing between published HPDs in a series is recommended, as it helps HPD users understand scope and available options.

A manufacturer may at any time elect to publish additional HPDs to account for new combinations or to fulfill requests from HPD users, etc.

3.2 Special Conditions for Materials and Substances

3.2.0 Introduction to Special Conditions

In addition to the default inventory and screening methodologies described in Section 2 of the HPD Open Standard, the HPD provides “Special Condition,” or non-default, policies. These are alternative methodologies to inventory and screen materials and substances on the HPD.

Because these methods may evolve at a pace different from the typical HPD methodology, Special Conditions are documented on HPDC’s website as Best Practices [https://www.hpd-collaborative.org/emerging-best-practices/]. There may be updates to this guidance, and additional sets of instructions added to this online area between formal releases of the HPD Open Standard. Therefore, it is important to review the Best Practices when creating an HPD. If any Special Conditions are applicable, reference the Special Conditions version number used in the Inventory and Screening Notes [See 2.1.3.5].

If using an automated, HPD-compliant tool like the HPD Builder to complete your HPD, you will be prompted with up-to-date Special Conditions instructions and notations will be incorporated automatically based on your responses.

HPDC Special Conditions policies are required to be used for each applicable type of content. Exceptions are noted within those policies.

The creation and ongoing maintenance of Special Conditions is overseen by the HPDC Technical Committee and its technical sub-groups. HPDC regularly reviews existing Special Conditions and proposals for new Special Conditions in response to industry feedback.

3.2.1 Special Conditions for Materials

Many building products consist of various substances that are mixed or reacted to form materials and ultimately a finished product. The default inventory and screening methods described in the HPD Open Standard work well to report a product’s chemical substances that are easily identified by CAS RN. [See 2.2.2 Substance and *5. Glossary* for definitions of key terms such as *substance* and *material.*]

While all materials can *in theory* be analyzed in terms of the substances that make them up, in practice it doesn’t always make sense or improve our understanding of a product’s health characteristics to inventory and screen material content at the substance level. It is for these situations that several Special Conditions have been defined.

For example:

- Biological and Geological Materials: The chemical composition of wood and stone is inherently complex and highly variable or unknown. Wood and stone also have distinct hazard profiles compared to their constituent substances. The HPD Open Standard describes procedures for manufacturers to inventory and screen wood (and other biological materials such as wool, cotton, etc.) under a Special Conditions policy for “Biological Materials,” and stone (and other mined and quarried products) under a policy for “Geological Materials.”
- Metal Alloys and Float Glass: In contrast with the previous examples, the chemical composition of these materials is well-defined and transparent. However, their health characteristics as materials are distinct from the characteristics of their constituent substances, and this difference as well as other factors warrants a specific methodology.

See Best Practices on the HPDC website [https://www.hpd-collaborative.org/emerging-best-practices/] for complete, up-to-date Special Conditions for materials.

3.2.2 Special Conditions for Substances

There are also circumstances where the HPD Open Standard default reporting method for inventory and screening of chemical substances identified by CAS RN [See 2.2.2 Substance] has limitations that warrant the use of Special Conditions.
For example:

- Form-Specific Hazards: The mechanism of the toxicity of a substance may be directly caused by its physical form rather than its chemical composition alone and thus strongly influenced by its context in a material.
- Polymers: Single CAS RNs often used for polymers are frequently insufficient to fully inventory the multiple substances that are relevant for a complete inventory and hazard screen of a polymeric material.

See Best Practices on the HPDC website [https://www.hpd-collaborative.org/emerging-best-practices/] for complete, up-to-date Special Conditions for substances.

4. Checklist for a Compliant HPD

To be considered compliant with the HPD Open Standard, all entries provided by the preparer must be completed on the HPD Format in accordance with the HPD Instructions. The following checklist summarizes these requirements.

HPD FORMAT COMPLIANCE

- Must use approved HPD format. Example templates (for visual guidance only—not to be filled in) are available at HPDC.org.
- Non-published HPDs are marked as drafts and are visually different from Published HPDs. Example draft HPDs are available at HPDC.org.

HPD FORMAT SECTION 1: SUMMARY

- Product Name and Manufacturer Name provided.
- HPD Unique Identifier provided
- Classification: six-digit CSI MasterFormat designation or other identifier, or "N/A."
- Product Type: More specific product category than Classification.
- Product Description: Product function provided.
- Third Party Verified (3PV) Logo: 3PV logo is displayed on third party verified HPDs
- Created via: tool used to create HPD identified.
- HPD URL: Provided
- Inventory Reporting Method: Nested Materials or Basic Inventory method indicated
- Threshold: per product or per material indicated; at least one threshold indicated; multiple levels may be indicated in per material threshold.
- Residuals and Impurities Evaluation Completed: indicates whether residuals and impurities evaluation was completed; in Nested Materials Inventory method, “Y” equals total number of materials; “X” equals number of materials for which residuals and impurities evaluation was completed in Section 2.
- Characterized, Screened, and Identified: “Yes” or “No” selected; responses align with level of disclosure provided in Section 2.
- Content in descending order of quantity; Number of GreenScreen BM-4/BM-3 contents; Contents highest-concern GreenScreen score(s) (BM-1, LT-1, LT-P1); and Nanomaterial: responses align with information provided in Section 2.
- Inventory and Screening Notes: required entries (per detailed requirements) provided.
    - explanation of each “No” answer to Characterized, Screened, and Identified [See 2.1.2.3],
    - identification of each relevant Special Condition, Notes required for that Special Condition
    - explanation when “Other” is indicated for Threshold entry [See 2.2.1.4], unless provided in the Material or Product Notes.
- VOC Content: responses provided for each data element for liquid/wet applied products; or "VOC content data is not applicable for this product category" is indicated.
- Certifications and Compliance: responses align with information provided in Section 3.
- Third-Party Verified: yes or no is checked; if yes, name of verifier is provided. Third Party Preparer is named or “Self Prepared” is entered. Corresponds directly with 3PV logo, above.
- Screening Date, Published Date, Expiry Date, and/or Archived Date are indicated. Expiry Date is no more than three years after Screening Date.
- Product and Manufacturer Name, Product HPD URL, and tool used to create HPD are included in the footer of every page.

HPD FORMAT SECTION 2: CONTENT IN DESCENDING ORDER OF QUANTITY

A dedicated entry is provided for each material and substance in a Nested Materials Inventory and for each substance in a Basic Inventory, based on the inventory threshold for each material or for the product as specified, except as allowed in detailed instructions for Variations.

In a Nested Material Inventory, for each Nested material, the following entries are acceptable:

- Material Name: specific or generic name or “Undisclosed.”
- % (Percent): a fixed number or range, “Alternate” or “Undisclosed.”
- InvThreshold (Inventory Threshold): one threshold is provided per material.
- Residuals/Impurities Evaluation: “Completed” or “Not Completed” in “X of Y materials”
- Residuals and Impurities Notes: required entries provided. Refer to detailed requirements.
  - Explanation if “Not Completed” is indicated.
    - Explain why process was not followed
    - Identify any steps in the process that could not be performed
  - If “Completed” is indicated,
    - Follow specific guidance for Notes in Residuals and Impurities Best Practices.
- Other Material Notes: required entries provided. Refer to detailed requirements.
  - Explanation or rationale if Material Name is “Undisclosed” in a Nested Materials Inventory,
  - Explanation for ranges and alternates as required in Percent (%) in a Nested Materials Inventory,
  - Explanation when "Other" is indicated for Inventory Threshold, unless provided in the Inventory and Screening Notes,
  - Explanation when inventory data for substances within a material are obtained at multiple threshold levels in a Nested Materials Inventory or within a product in a Basic Inventory.
  - Explanation of variations among different products listed in a single HPD, if not addressed in Substance Notes or General Notes.

In a Basic Inventory, for the Product, the following entries are acceptable:

- Product Name: as in Section 1
- InvThreshold (Inventory Threshold): one threshold is provided for the entire product.
- Residuals/Impurities Evaluation: "Completed," “Partially Completed” or "Not Completed."
- Residuals and Impurities Notes: required entries provided. Refer to detailed requirements.
  - Explanation if “Not Completed” is indicated.
    - Explain why process was not followed
    - Identify any steps in the process that could not be performed
  - Explanation of “Partially Completed” is indicated
    - Explain why the process was not followed for all Nested Materials
  - If “Completed” is indicated,
    - Follow specific guidance for Notes in Residuals and Impurities Best Practices.

In both Nested Materials Inventory and Basic Inventory, for each substance, the following entries are acceptable:

- Substance Name: specific or generic name, “Undisclosed” or “Unknown.”
- ID (Identifier): CAS RN or other identifier, "Undisclosed," "Unknown," or "Not registered."
- % (Percent): a fixed number or range, or “Alternate.” An annotation “ALT” or “ALTERNATE” is added to the % weight field if a substance is entered as an Alternate.
- GreenScreen: Benchmark or List Translator score, or “NoGS."

- RC (Recycled content): "PostC," "PreC," "Both," "None," or "UNK."
- Nano: "Yes," "No," or "UNK."
- Substance Role: function of substance provided.
- Hazards: name of applicable hazard types (with a separate line item for each hazard); "None found;" "Multiple;" "Unknown;" or as indicated in detailed instructions for Variations.
- Agency(ies) with Warnings: agency list abbreviation and hazard warning; "No warnings found on HPD Priority Hazard Lists" (if "None found" is indicated for Hazards); "Not disclosed by supplier" (if "Unknown" is indicated for hazards); or as indicated in detailed instructions for Variations.
- Hazard Data Source: Source of hazard data e.g. Pharos or Toxnot.
  Hazard Screening Date: Date on which substance was screened.
- Additional Listings: Additional listings complementary to the hazard listings.
- Agency(ies), List Titles and Notification: Additional listing agency list abbreviation, List title and Notification listed.
- Substance Notes: required entries provided. Refer to detailed requirements.
  - Explanation if Substance Name and Identifier are “Undisclosed” or “Unknown” including rationale and efforts undertaken to identify “Unknown” substances,
  - Additional CAS RNs, if the substance can be identified by multiple CAS RNs;
  - Explanation if GreenScreen assessment is referenced but is not published and available for public use;
  - Explanation for ranges and alternates for substance percentage;
  - Explanation of source if GreenScreen response is a Benchmark score from a full GreenScreen assessment;
  - Description of recycled content, if applicable;
  - If the product contains a substance that is an EPA exempt VOC, “Exempt VOC” must be noted;
  - Explanation of variations among different products listed in a single HPD [See 3.1], if not addressed in Other Material or Product Notes or General Notes.

In both Nested Materials Inventory and Basic Inventory, for each material, the following entries are acceptable:

- Material Name: specific or generic name, “Undisclosed” or “Unknown.”
- ID (Identifier): Material identifier as defined on Special Conditions guidance, "Undisclosed" or "Unknown".
- Percent (%): a fixed number or range. An annotation “ALT” or “ALTERNATE” is added to the %weight field.
- GreenScreen: Benchmark or List Translator score, or “NoGS.” Depending on the type of material, GreenScreen field may or may not display in HPD, according to relevant Special Conditions policy.
- RC (Recycled content): “PostC,” “PreC,” “Both,” “None,” or “UNK.”
- Nano: “Yes,” “No,” or “UNK.”
- Material Role: function of material provided.
- Hazards: When applicable, name of applicable hazard types (with a separate line item for each hazard); “None found;” “Multiple” or “Unknown”. “Not required under this Special Condition” is entered depending on the type of Special Condition.
- Agency(ies) with Warnings: agency list abbreviation and hazard warning; “No warnings found on HPD Priority Hazard Lists” (if “None found” is indicated for Hazards); “Not disclosed by supplier” (if “Unknown” is indicated for hazards); or as indicated in detailed instructions for Variations or Special Conditions.

- Hazard Screening Method: Method used to conduct hazard screening, or "HPDC Special Conditions Policy," as per Special Conditions specification
- Hazard Screening Date: Date on which material was screened.
- Additional Listings: Additional listings complementary to the hazard listings.
- Agency(ies), List Titles and Notification: Additional listing agency list abbreviation, List title and Notification listed.
- Material Notes: required entries provided. Refer to detailed requirements.
    - explanation if Material Name [See 2.2.3.1] and Identifier [See 2.2.3.2] are "Undisclosed" or "Unknown." The manufacturer must explain the rationale for nondisclosure for "Undisclosed" material and efforts undertaken to identify "Unknown" materials;
    - explanation for ranges and alternates as required in 2.2.3.3 Percent (%);
    - description of recycled content, if applicable [See 2.2.3.5];
    - explanation of variations among different products listed in a single HPD [See 3.1], if not addressed in Other Material or Product Notes [See 2.2.1.7] or General Notes [See 2.5].

In the Nested Materials Inventory, Nested Materials may optionally be grouped into parts in an optional "part inventory" display [see 2.2.3].

- Part Name: Title of the part
- Nested Material Threshold: Reiterates threshold information given at the material level. All materials listed in a part must use the same material threshold, e.g., 1,000 ppm.
- Material Name: Title of the material.
- Percent (%): Material's percentage in the part.
- Part Notes (optional): Additional explanation of part inventory.

HPD FORMAT SECTION 3: CERTIFICATIONS AND COMPLIANCE

A dedicated entry is provided for each certification or compliance. VOC Emissions must be included and is listed first. VOC Content for wet/liquid-applied products is listed second, optionally followed by additional content or health-related certifications and compliance.

- Type of Certification: category of compliance, e.g., VOC Emissions.
- Name of Certification or Compliance: name of certification.
    - For VOC Emissions, the following entries are acceptable: "N/A," "CDPH Standard Method – Not tested," or "Inherently non-emitting source per LEED."
- Certifying Party: "Self-declared," "Second Party," or "Third Party."
- Issue Date and Expiry Date are provided. Expired certificates are allowed up to one year from HPD publish date.
- Certifier or Lab: name of lab, or "None."
- Applicable Facilities: specific location of individual facilities, or "All."
- Certificate URL: certificate or compliance URL provided.
- Certification and Compliance Notes: Required Entries provided.
    - limitations of the certification, e.g., It applies only to part of the product
    - for VOC Emissions, an explanation of the building-type scenario under which the product was qualified
    - Explanation for expired certificates stating why the certificate is still relevant and where an updated one can be found in the future

HPD FORMAT SECTION 4: ACCESSORIES

A dedicated entry is provided for each required accessory, optionally followed by additional accessories recommended by manufacturer.

- Accessory Product Name : Name of the recommended or required product provided; if no accessories are required, “no accessories are required for this product” must be entered. Name of the colorant system has been indicated for tintable products.
- HPD URL: accessory product HPD URL, or “NA.”
- Accessory Type: “Adhesive,” “Fastener,” “Cleaning Product,” “Colorant System,” “Lubricant,” “Maintenance Product, “Installation Accessory,” or “Other”.
- Manufacturer: Name of the manufacturer of the accessory product or “Generic”.
- Notes: Description provided when accessory product is required. VOC content is provided for liquid/wet-applied accessories when no separate HPD is available. Notes indicating how colorant system is obtained when “Colorant System” is select on Accessory Type.

HPD FORMAT SECTION 5: GENERAL NOTES

Required Entries provided.

- Explanation of variations among different products listed in a single HPD, or provide in Material or Product Notes or Substance Notes,
- Definition of the scope of the HPD when products are composed of combinations of parts.

HPD FORMAT SECTION 6: REFERENCES

Manufacturer information, including contact information for manufacturer's staff person responsible for the HPD, is provided.

5. Glossary

Note: This glossary is intended as a convenient reference for understanding the HPD Open Standard and key terms within it. Wherever possible, HPDC has aligned definitions with other authoritative sources, such as the U.S. Environmental Protection Agency, and the International Union of Pure and Applied Chemistry (IUPAC) Compendium of Chemical Terminology, as well as other organizations and standards.

Basic Inventory Method: in an HPD, a simple listing of substances above the specified inventory threshold with their characteristics in descending order of quantity. No material-level information is communicated.

Biological Material: a naturally occurring material containing genetic information and capable of reproducing itself or being produced within a biological system, e.g., beech wood, cotton.

Bill of Materials: a list of the raw materials, sub-assemblies, sub-components, parts, and the quantities of each needed to manufacture an end product.

CDPH Standard Method: the "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" published by the California Department of Public Health (CDPH)[12].

Characterize: to provide information that describes, or characterizes, a specific facet of a substance, e.g., see 2.1.3.4: "An indication of whether any substances in the product have been *characterized* as a nanomaterial." More specifically, the HPD Open Standard has specific requirements [see 2.1.2.3] for considering a substance Characterized, i.e. that the percent weight and role are provided.

Chemical Abstract Services Registration Number (CAS RN): a unique numerical identifier assigned by the Chemical Abstracts Service to every chemical described in the open scientific literature of elements, chemicals compounds, polymers and other substances.

Chemical Substance: *See Substance.*

Complete HPD: An HPD that is compliant with the HPD Open Standard, with all required data fields for publishing.

Constituent: an Intentionally Used Substance that is intended to be incorporated into the final material/mixture, and for which the performance characteristics (including cost reduction) are desired parts of the final material/mixture.

Content(s): everything in a product or part, including substances and materials, and including residual chemicals.

[12] For more information: http://www.cdph.ca.gov/programs/IAQ/Pages/VolatileOrganicCompounds.aspx. For a direct link to the Version 1.2 standard: https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/CDPH%20Document%20Library/CDPH-IAQ_StandardMethod_V1_2_2017_ADA.pdf

Form-Specific Hazard: a hazard that is specifically associated with a particular form of a substance, such as the respirable form of crystalline silica, or a nanomaterial form.

Geological Material: a material extracted from the earth as largely unprocessed rock or crushed material, e.g., stone, aggregate.

Green Chemistry: the design of chemical products and processes that reduce or eliminate the use and/or generation of hazardous substances. See https://www.epa.gov/greenchemistry

GreenScreen: short for "GreenScreen® for Safer Chemicals," a method for comparative chemical hazard assessment. It is used to assess the inherent hazards of chemicals and their potential effect on human health and the environment.

- The List Translator score (LT-) is a designation based on initial stand-alone screening of a substance against GreenScreen Specified Lists which consist of Authoritative and Screening Lists, generated by state, national, or international governments, authoritative bodies, and expert organizations.
- The Benchmark score (BM-) is a designation based on a full GreenScreen assessment, which includes a comprehensive review of all available information including 1) measured data from standardized tests and scientific literature, 2) estimated data from suitable analogs and models, and 3) hazard lists.

Both are free, public protocols; however, a full GreenScreen assessment used for a public claim must be completed by a licensed GreenScreen Profiler.

Hazard: the inherent capacity of a substance to cause an adverse effect to health or to the environment. "Hazard" is distinct from but related to "risk" and/or "exposure." Hazard Screening is a first and necessary step in studies of risk and/ or exposure.

Homogeneous Material: See Material.

HPD Builder: The HPD Builder is an interactive online tool built and maintained by HPDC to facilitate the creation and publishing of an HPD. It guides manufacturers to enter data, perform hazard screening, and format HPD reports to help ensure compliance with the HPD Open Standard.

HPD Public Repository: Maintained by HPDC, the HPD Public Repository is the authoritative and required location for published, i.e., publicly released, HPDs. When a manufacturer publishes an HPD using the HPD Builder, it is automatically uploaded to the HPD Public Repository.

Identify: to disclose a substance or material by name and identifier in the HPD content inventory. See 2.1.2.3 for specific requirements to consider a substance "Identified" according to the HPD Open Standard.

Identifier: a code that specifically identifies a material or substance; in the HPD this typically refers to Chemical Abstract Service Registration Number (CAS RN) [see 2.2.2.2].

Impurity: an unintended constituent present in a substance as manufactured. It may, for example, originate from the starting materials or be the result of secondary or incomplete reactions during the production process. While it is present in the final substance, it was not intentionally added. In most cases impurities constitute less than 10% of the substance.

Intentionally Used Substance: any chemical substance that is used in the production of the homogeneous material/mixture, whether or not it is intended to remain in the manufacturer's finished product. This includes all substances used in production, whether used by the product manufacturer or by an upstream supplier. All impurities (see above) are intentionally used substances, but not vice versa.

Intended Reaction Product: the products of any chemical reaction that are an intentional part of the production/formulation process of the material/mixture.

Inventoried: the HPD Open Standard defines products as inventoried when all substances above the threshold indicated are Characterized and Screened in accordance with the Standard. Substances do not need to be Identified to be considered Inventoried.

Inventory: in addition to the specific technical definition of *Inventoried* above, the HPD Open Standard broadly defines an inventory as the result of gathering and providing information about substances at the material or product level. The *content inventory* contained in the HPD is the total collection of information about materials and substances in a product.

Material: a uniform solid, liquid, or gas composed of one or more substances and/or materials. Materials may be homogeneous or heterogeneous:

- Homogeneous materials cannot be separated, in principle, into different materials by mechanical actions such as unscrewing, cutting, crushing, grinding, and sanding or other abrasive processes. Examples of homogeneous materials are polypropylene, steel, coatings, finishes, and nylon yarn.
- Nonhomogeneous (heterogeneous) materials, can be separated into different materials through mechanical actions. Examples of non-homogeneous materials are powder-coated steel, a printed bottle label, plywood, laminate, chair casters, and blended textiles with more than one thread or yarn type woven together.

Metal Alloy: combination of two or more metallic elements, especially to give greater strength or corrosion resistance.

Nanomaterial: a substance intentionally engineered to achieve size-dependent properties and functions with one or more external dimensions or an internal structure measuring less than 100 nanometers.

Nested Materials Inventory Method: in an HPD, a listing of all materials in a product above the specified inventory threshold, with substances above reportable thresholds listed under each material in which they are present.

Part (Component): an optional functional grouping of content. The Part inventory identifies a portion of a finished product that is used modularly, e.g., cable, caster, chair arm, or supplied separately, e.g., a polymer resin, or wood fiber. A part may contain substance(s), material(s), or other part(s).

Priority Hazard List: authoritative chemical hazard list to be referenced when screening substances for hazard warnings, as identified by the Health Product Declaration Collaborative. Selections are primarily based on GreenScreen Specified Lists.

Product: a finished good with an end-use purpose of its own, or within another product. In an HPD content inventory, a Product is composed of one or more parts, materials, and/or substances.

Product HPD: A Product HPD is completed by a manufacturer using the Health Product Declaration (HPD) Open Standard, which specifies data and format requirements for reporting of product content, associated health information, and other information. The Product HPD is distinguished from a Supplier HPD, which is completed by an ingredient supplier and which uses a proper subset of the full HPD Open Standard.

Published: a completed Health Product Declaration that has been publicly released by the manufacturer and uploaded to the HPD Public Repository [see 1.5 Publishing an HPD, and http://www.hpd-collaborative.org/hpd-public-repository/].

Recycled Content:

- **Post-consumer** (PostC): waste materials generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for their intended purpose.
- **Pre-consumer** (PreC): also referred to as post-industrial, this is material diverted from the waste stream during a manufacturing process. Excluded from this category is re-utilization of materials such as scrap that are generated in a process and capable of being reclaimed within the same process.

Residual: an Intentionally Used Substance that may be present in the final material/mixture but which is not intended as a constituent. For example, this may refer to substances included in a manufacturing process to aid processing, as well as inputs to a reaction process such as reagents, catalysts, or monomers.

Screen: to check for the presence of substances on hazard lists. See 2.1.2.3 for specific requirements to consider a substance “Screened” according to the HPD Open Standard.

Special Conditions: policies for classes of materials and substances for which the typical HPD content inventory and/or hazard screening methodology are not appropriate, and where an alternate method is given. [See 3.2, and https://www.hpd-collaborative.org/special-conditions/].

Substance (Chemical Substance): matter of constant composition best characterized by the entities (molecules, formula units, and atoms) it is composed of and by its physical properties such as density, refractive index, electric conductivity, melting point, etc. May refer to intentionally used substances, intentional reaction products, and/or impurities.

Supplier HPD: The Supplier HPD is proper subset of the HPD, i.e., its instructions and format contain some but not all of the data elements of a complete Product HPD. The Supplier HPD is a specification for ingredient suppliers to provide complete and accurate content inventory and associated health information data directly to manufacturers for reporting in Product HPDs. As with the Product HPD, the Supplier HPD may provide hazard screening information while withholding proprietary substance identification, and be considered compliant with the HPD Open Standard if all other reporting requirements are met.

Threshold: concentration(s) at or above which the manufacturer or supplier itemizes substances present within the material or product, as applicable.

Appendices – Removed

Appendix A has been removed from the HPD Open Standard as of version 2.3. See Section 1.0 for information previously contained in this Appendix, regarding the HPD format.

Appendices B, C, D, and E have been removed from the HPD Open Standard as of version 2.3. These appendices covered the following topics:

- HPD Priority Endpoints (Appendix B)
- HPD Priority List Criteria (Appendix C)
- HPD Priority List Sources (Appendix D)
- HPD Priority List Warnings (Appendix E)

As of HPD v2.1.1 for Appendix C, and as of HPD v2.3 for B, D, and E, these topics are addressed in Best Practices for Hazard Screening, available on the HPDC website: https://www.hpd-collaborative.org/emerging-best-practices/.

Appendix F has been removed from the HPD Open Standard as of HPD v2.3. This topic is addressed in Best Practices for VOC Emissions Testing, available on the HPDC website: https://www.hpd-collaborative.org/emerging-best-practices/.