



CRITERIA FOR CERTIFICATION
ENVIRONMENTAL INNOVATION, GS-20 Edition 2.1
Sub-Category: Cleaning Equipment – Single Use Dust Sheets

APPLICANT INFORMATION:	
Company:	3M
Product Name:	Easy Trap Sweep and Dust Sheets
Website:	https://www.3m.com/3M/en_US/commercial-cleaning-us/resources/easy-trap-sweep-dust-sheets

Introduction. Green Seal’s Environmental Innovation Standard (GS-20) provides a framework for the certification of environmental innovations. This certification demonstrates an independent third party has verified that the innovative aspect(s) of a product results in a significant reduction of human health and environmental impacts compared to products of the same functional class, achieving innovations not previously demonstrated within a product category. Certification neither constitutes the development of a product category standard or benchmark, nor does it require competitors within a product category to use the same innovation strategies in their approach to claiming innovation.

Certification of Environmental Innovation. Conformance to the requirements in this document will result in the applicant noted above receiving the Green Seal Certification of Environmental Innovation.

Innovation Claim. The applicant claims that this product differs from comparable alternatives on the market by using a formulation with at least 90% post-consumer recycled content polyethylene terephthalate (PET), while also achieving significant reductions in manufacturing life cycle impacts. Manufacturing a single-use product with 90% post-consumer recycled PET is estimated to achieve a minimum of a 30% reduction of greenhouse gas emissions associated with the resource extraction, resin production, and manufacturing lifecycle phases associated with this product category.¹

Disclaimer. This Certification is not intended to identify all possible negative impacts and cannot rule out any unknown negative consequences from the use of this product.

Public Comment. A first public comment period was held from March 18 – April 19, 2020. A second public comment period will be held from May 17 – June 18, 2021.

¹ The percent of reduced greenhouse gases has been updated to reflect the requirements in the [GS-20 Standard](#) (Criterion 3.0).

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OVERVIEW

1.0 Eligibility

Easy Trap Sweep and Dust Sheets by the company 3M is eligible to be certified under the Environmental Innovation Standard (GS-20, Edition 2.0) because the product:

1. Is a commercially available manufactured product
2. Exists within a market that has comparable options that achieve the same function, and
3. Has lifecycle phases for which published health and environmental impact information from credible sources is available.

Product Function

This product is a single-use, adhesive-coated dusting cloth made from polyethylene terephthalate (PET), the chemical name for polyester. When used as intended, this product provides commercial surface clearing to remove dust, dirt, and debris from floors and surfaces (e.g., out-of-reach surfaces such as fans, wall corners, and light fixtures) in order to prepare surfaces for disinfection and cleaning. This product may be used with a variety of flat floor tools.

The product is intended for use in commercial spaces including, but not limited to, industrial, hospitality, educational, healthcare, and commercial office settings, and may also be used in residential settings.

Comparable Alternatives

Comparable alternatives are prevalent on the market and include single-use cotton and plastic-based cloths and reusable cotton and microfiber cloths that require laundering after use, such as those that attach to flat floor tools.

Legal Compliance

Manufacturer shall not be in violation of any applicable environmental regulations or laws nor any applicable regulations under the authority of the U.S. Federal Trade Commission, U.S. Food and Drug Administration, or the U.S. Environmental Protection Agency (or equivalent if based outside the United States).

2.0 Product Lifecycle Impact Review

This section documents the anticipated human health and environmental lifecycle impacts associated with the applicant product category, noting the most significant (i.e., greatest in negative effect) impacts.

The applicant product is a single-use, adhesive-coated dusting cloth made from PET synthetic polyester, 90% of which is post-consumer recycled content PET. PET is the most common thermoplastic polymer resin of the polyester family and is used to produce fibers, containers for liquids and foods, thermoforming for manufacturing, and in combination with glass fiber for engineering resins.²

Summary of Lifecycle Impact Review

Lifecycle Phase	Primary Impacts Identified
Resource Extraction	Greenhouse gas emissions and water use.
Manufacturing	Greenhouse gas emissions, emissions to air, water, and soil. Water and energy use. Solid waste generation.
Use	No significant impacts identified.
Waste Management and Disposal	Solid waste generation.

Resource Extraction Phase

PET is petroleum-based which presents significant resource extraction impacts particularly related to greenhouse gas emissions. Dust sheets (both the applicant product as well as competitor products) are designed to be single use, therefore requiring continuous resource extraction for the production of virgin plastic fibers at a more rapid rate than the production of products that are designed for to be reused dozens

² https://en.wikipedia.org/wiki/Polyethylene_terephthalate

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or hundreds of times including microfiber dust wipes and cloths and cotton fringe mops. Reusable alternatives require laundering after use and thus require energy consumption during the use phase.

According to a 2019 study by the Center for International Environmental Law,³ “the extraction and transport of fossil fuels for plastic production [(i.e., cradle-to-resin)] produces significant greenhouse gases [an estimated 1.89 metric tonnes of CO₂e are emitted per metric tonne of plastic resin produced]. Sources include direct emissions, like methane leakage and flaring, emissions from fuel combustion and energy consumption in the process of drilling for oil or gas, and emissions caused by land disturbance when forests and fields are cleared for wellpads and pipelines.”

In addition to greenhouse gas emissions, Muthu et al. estimates 62 litres of water consumed in the resource extraction phase per kg of fiber to create synthetic polyester.⁴

Manufacturing Phase

Greenhouse gas emissions are a significant impact within the manufacturing phase for PET production. According to the Center for International Environmental Law,⁵ “plastic refining is among the most greenhouse gas-intensive industries in the manufacturing sector—and the fastest growing. The manufacture of plastic is both energy intense and emissions intensive in its own right, producing significant emissions through the cracking of alkanes into olefins, the polymerization and plasticization of olefins into plastic resins, and other chemical refining processes.”

According to Material Economics,⁶ plastic materials require 5.1 metric tonnes of CO₂ per metric tonne of plastic produced for 100% virgin content (inclusive of the 1.89 MTCO₂e extraction impact noted above), and only 1.4 metric tonnes of CO₂ per metric tonne of plastic produced for 100% recycled content. Incorporating recycled content into plastic materials significantly reduces the greenhouse gas profile of the product, which is arguably the most significant lifecycle impact of a single-use petroleum-based product.

In addition to greenhouse gas emissions, the manufacturing of adhesive-coated dust sheets is chemically intensive and, depending on the manufacturing processes, can result in significant environmental releases to air, water, and soil, demand for energy and water resources, and creation of waste. The chemical industries are the second largest user of energy in the manufacturing sector. In 2002 they accounted for 29% of the total energy consumed in U.S. Manufacturing.⁷ Quality chemical handling, management, and disposal processes can reduce the potential for environmental release.

Use Phase

During the use phase, single use dust sheets can provide human health benefits compared to reusable microfiber and cotton fringe mops and reusable cotton and microfiber cloths that require laundering after use. In some cases, single use dust sheets may be the preferred product, the only choice, or the best choice to conduct surface cleaning as the first step of a comprehensive cleaning strategy, in preparation for cleaning, sanitization, and disinfection. In the instances when a single use product is the preferred option for surface cleaning, it is important that the product is formulated and functions to reduce the significant impacts created through the resource extraction, manufacture, use, and disposal.

Waste Management & Disposal Phase

³ Center for International Environmental Law, *Plastic & Climate: The Hidden Costs of a Plastic Planet*. May 2019; p2. <https://www.ciel.org/wp-content/uploads/2019/05/Plastic-and-Climate-FINAL-2019.pdf>

⁴ Muthu, S., et al., 2012. Quantification of environmental impact and ecological sustainability for textile fibers. *Ecological Indicators* 13(1), 66–74.

https://www.researchgate.net/publication/234028337_Quantification_of_Environmental_impact_and_ecological_sustainability_of_textile_fibres

⁵ Center for International Environmental Law, *Plastic & Climate: The Hidden Costs of a Plastic Planet*. May 2019; p2. <https://www.ciel.org/wp-content/uploads/2019/05/Plastic-and-Climate-FINAL-2019.pdf>

⁶ Material Economics. *The Circular Economy - a Powerful Force for Climate Mitigation*, Exhibit 3.4.

<https://materialeconomics.com/publications/the-circular-economy-a-powerful-force-for-climate-mitigation-1>

⁷ U.S. Energy Information Administration, Manufacturing Energy Consumption Survey Table 1.2: First Use of Energy for All Purposes (Fuel and Nonfuel), 2002. <https://www.eia.gov/consumption/manufacturing/briefs/chemical/index.php>

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While many PET materials can be recycled, adhesive-coated dust sheets designed to pick up dust, dirt, and debris would require significant processing to be a viable recyclable material. This prevents dust sheets from being recycled.⁸

Single use dust sheets create significantly more waste over time than reusable microfiber and cotton products. Given that the assumed end-of-life destination for dust sheets is the landfill after single use, it is important to minimize the greenhouse gas emissions profile of the product and minimize resource use in production, as possible, by using post-consumer recycled content.

CERTIFICATION REQUIREMENTS

3.0 Environmental Innovation Review

This section details the applicant's proposed innovation claims, including:

- **Innovation Summary:** describes how the applicant claims their product differs from comparable products on the market,
- **An Impact Reduction Statement:** describes how the applicant claims their product's innovation results in reductions of significant lifecycle impacts identified in the Product Lifecycle Impact Review (Section 2.0 herein),
- **Market Analysis:** describes the parameters for the applicant to demonstrate their claim that the product is the first product of its type to achieve this innovation during the Certification Phase, and
- **Drawbacks Analysis:** contains a summary of any potential drawbacks that Green Seal has identified and mitigations necessary.

The applicant shall demonstrate that a product is environmentally innovative via the following process: the applicant shall provide evidence that a specific new approach to the product results in reductions of significant health or environmental impacts with at least a 30% reduction of one significant environmental or human health impact, as identified in Section 2.0, as compared to available alternatives.

3.1 *Innovation Summary – How does this product differ from others on the market?*

The applicant claims that this product differs from comparable alternatives by using a formulation with at least 90% post-consumer recycled content PET, while also achieving significant reductions in manufacturing life cycle impacts. This formulation allows their product to achieve at least a 30% reduction in greenhouse gas emissions associated with the resource extraction, resin production, and manufacturing lifecycle phases.⁹

During the Certification Phase, Green Seal will verify these claims through a technical review.

3.2 *Impact Reduction Summary – How does the innovation result in impact reduction?*

Manufacturing a single-use product with 10% virgin PET and 90% post-consumer recycled content PET is estimated to deliver a 65% reduction in greenhouse gas emissions associated with the resource extraction, resin production, and manufacturing lifecycle phases when compared to a product made from entirely virgin material. This calculation is based on comprehensive greenhouse gas emissions data evaluating each lifecycle phase of single use plastics, as documented by Material Economics,¹⁰ where plastic materials require 5.1 metric tonnes of CO₂ per metric tonne of plastic produced for 100% virgin content, and only 1.4 metric tonnes of CO₂ per metric tonne of plastic produced for 100% recycled content.

⁸ For example, the U.S. Environmental Protection Agency estimates that the 3.17 Mt of plastic waste recycled in the US in 2014 resulted in 3.2 million metric tonnes of CO₂e savings, which is equivalent to 670,000 less cars on the road over the course of a year. See US EPA, Advancing Sustainable Materials Management: 2014 Fact Sheet (2016), https://www.epa.gov/sites/production/files/2016-11/documents/2014_smmfactsheet_508.pdf

⁹ The percent of reduced greenhouse gases has been updated to reflect the requirements in the [GS-20 Standard](#) (Criterion 3.0).

¹⁰ Material Economics. *The Circular Economy - a Powerful Force for Climate Mitigation*, Exhibit 3.4. <https://materialeconomics.com/publications/the-circular-economy-a-powerful-force-for-climate-mitigation-1>

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In addition, achieving reductions in manufacturing waste, water and energy usage, and air emissions reduce the impacts associated with the manufacturing process, resulting in less burden associated with the end product.

During the Certification Phase, Green Seal will verify these claims through a technical review.

3.3 *Market Analysis – How unique is this innovation?*

A market analysis conducted in January 2020 demonstrated that within the market of single use dust sheets, the applicant is the first product on the market making the following claims relevant to environmental innovation:

- The dust sheet substrate, PET, is made from at least 90% post-consumer recycled content by weight.
- Both sides of the product are usable, maximizing the surface clearing capability per square inch of product (note, at least one other manufacturer provides double-sided, adhesive coated single use dust sheets).

The public engagement periods did not produce feedback indicating that other products of the same function currently make all the above claims.

3.4 *Drawbacks Analysis – Has burden shifting occurred?*

As a result of a drawbacks analysis, Green Seal has identified significant impacts associated with single-use, petroleum-based products when compared to reusable alternatives. These impacts, along with the benefits these products provide in instances when single use items are the preferred choice (i.e., when a reusable product is not an available option or the preferred option), were discussed previously in Section 2.0.

This single use, petroleum-based product creates the following environmental burdens when compared to reusable alternatives: greenhouse gas emissions within the resource extraction and manufacturing phases, as well as solid waste generation from ongoing disposal. To mitigate these burdens, the applicant must address both product design (to reduce the greenhouse gas impacts embedded within the product) and the environmental impacts of the manufacturing process (to reduce the impacts associated with product manufacturing). See Section 5.21.4.

4.0 **Evaluation of Functional Performance and Fitness for Purpose**

This section details the requirements to demonstrate that the applicant product functionally performs as well as or better at surface clearing than at least one nationally recognized or market-leading product of its type, to be approved by Green Seal, including test methods and test reports submitted during the Certification Phase.

Test Methods

Applicant shall meet the requirements in this section to demonstrate the product functionally performs at least as well as a nationally recognized or market-leading product of its type, to be approved by Green Seal. The application shall use objective, scientifically validated testing methods conducted under controlled and reproducible laboratory conditions to demonstrate functional performance for surface cleaning.

Purpose and Scope of Test.

The applicant product is tested for surface clearing against a comparison product and measures in grams each product's removal of dirt, dust, and debris from a floor surface.

All tests use brand new products. All tests performed in corporate R&D laboratory by technical personnel.

Products included in the test are processed and delivered by the manufacturer and distributor. This provides a procurement and delivery method similar to that of a typical customer.

Terminology.

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- **Surface Clearing** – the removal of dirt, dust, and debris from floors and surfaces in preparation for cleaning, disinfection, and/or sanitization, measured in grams.

Personnel.

One technical FTE is necessary to conduct the test.

Facilities.

All testing shall be completed on the 3M R&D laboratory floor under standard conditions:

- Room temperature: 72°F
- Relative humidity: 30-50%

Equipment.

The following equipment is necessary to conduct this test:

- Balance capable of recording 25 grams of material accurate to 2 decimal points.
- Flat-mop, with 18” head
- Dusting sheets, 5” width and perforations every 6”
- Lab Dirt Mixture
- Autoscrubber

Test, Control, and Reference Substrates.

The applicant shall follow the process outlined below to test and calculate surface clearing and for each product.

To ensure test repeatability,¹¹ applicant shall hold as many factors constant as possible when conducting the test. In this application, constants shall include:

- the laboratory where tests are conducted,
- the qualified technician conducting the tests,
- the days on which the tests are conducted (i.e., over the course of as few days as possible),
- the instruments used (see Equipment),
- the test steps followed (see below),

Applicant shall complete the following steps to conduct tests:

1. Clean the floor using the autoscrubber to remove all loose dirt, dust and debris from the test area. Use only water in the machine. If the machine has any ionizing/ ozone generating features, turn them off.
2. If present, allow any residual moisture to dry and evaporate before beginning the test.
3. Once the test area is dry, mark off the following using tape or similar unobtrusive marker: “Starting Line”, “Half-way Line”, “End line”.
4. Prior to adding the Lab Dirt Mixture to the test area, sweep the area with Easy Trap Sweep & dust sheets to remove any particles that may have been missed.
5. Distribute Lab Dirt Mixture evenly across the testing area.
6. Weight the dusting material to be tested immediately before use to determine its “Pre” weight.
7. Place the dusting material flat on the ground and then place the flat mop head on top to engage the dusting material.
8. Beginning with the flat mop head inside the starting line, begin pushing the flat mop across the test area.
9. Once the head of the mop reaches the End Line mark but not crossing it, lift the mop and then remove the dusting material, taking care not to release or dislodge any particles beyond what would be considered normal use.
10. Weigh the dusting material sample after use. This is the “Post” weight.

¹¹ This approach is consistent with the principles of a Repeatability (r) Test defined in ISO 5725-1: Accuracy (Trueness and Precision) of Measurement Methods and Results – Part 1: General Principles and Definitions (1994), where variables are limited and constants are maximized.

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11. Subtract the Pre weight from the Post weight to determine the amount of material collected.
12. Repeat steps 1-11 for each sample being tested.

Test Results

Test results shall be documented and demonstrated for the applicant product and at least one nationally recognized, market leading product of its type.

Records and Reports

During Certification, applicant shall submit all test reports and results to Green Seal.

Quality Assurance and Quality Control.

During Certification, applicant shall provide documentation of their quality assurance and quality control procedures to Green Seal.

5.0 Environmental and Human Health Requirements

This section describes the Environmental and Human Health requirements with which the applicant product must demonstrate compliance. Green Seal uses the following factors to determine requirements for this section:

- **Product Form:** the applicant product is a polyester fiber based product with an adhesive coating.
- **Potential for Direct Human Exposure:** through regular handling and use of the product, the potential for absorption through the skin and inhalation from the use of adhesives are present.
- **Potential for Environmental Releases:** as described in herein, when the product is used as intended, the product does not create environmental releases to air, water, or land.

See Annex A and the [GS-20 Standard](#) for definitions and full criteria details and Annex B for Environmental and Human Health Requirements that do not apply to this product.

5.1 Disclosure

Applicant shall disclose all product ingredients and components to the certification program, including the chemical name, the Chemical Abstracts Service (CAS) registry number, and the levels (% by weight) present for each in the product.

The product shall meet all requirements as described below, based on the presence of dermal and inhalation exposure pathways with the potential to affect human health.

5.2 Carcinogens, Mutagens, and Reproductive Toxins

The product shall not contain any components that are carcinogens, mutagens, or reproductive toxins.

5.3 Prohibited Components

The product shall not contain the following components.

- 1,2-dichlorobenzene
- 2-butoxyethanol
- Alkylphenol ethoxylates
- Formaldehyde donors
- The heavy metals lead, mercury, cadmium, hexavalent chromium, and antimony in the elemental form or compounds
- o-Phenylphenol
- Neonicotinoid pesticides
- Nitro-musks
- Phthalates
- Polycyclic musks
- Triclosan
- Triphenyl tins and tributyl tins

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5.4 Volatile Organic Compounds

The VOC content of the *product as used* shall contain no more than the current regulatory limits of the Air Resources Board for the State of California (CARB) for its product category.¹²

5.5 Animal Testing

Green Seal will accept previous test results as evidence of meeting a criterion in order to avoid new animal testing.

5.7 Skin and Eye Damage

The product shall not cause skin corrosion or cause serious eye damage.

5.8 Asthmagens

The product shall not contain any *components* that have been identified as *asthmagens*.

5.10 Skin Sensitization

Each of the product's components shall not be shown to be a skin sensitizer.

5.11 Skin Absorption

The product shall not contain components present at 1% or more in the product that are listed on the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV) list carrying a skin notation or substances that are listed on the German Deutsche Forschungsgemeinschaft (DFG) maximum allowable concentrations (MAK) list with a skin absorption H notation. Further, the product shall not contain components at 0.01% or more in the product that sum to 1% in the formula that are listed on ACGIH or DFG with the same target organ.

5.20 Bleaching

Fiber-based materials used in the product shall not be bleached with chlorine during the manufacturing process.

5.21 Product-Specific Requirements

5.21.1 The polyethylene terephthalate (PET) in the product shall be made from at least 90% post-consumer recycled content.

5.21.2 Applicant shall disclose formulation, chemical management, and disposal information for ingredients that function as optical brighteners used by the applicant, including the following:

- Ingredient Name/Formulation
- Amount (percent by weight) of ingredient found in product
- Amount (in ounces) of ingredient used to produce each pound of end product
- Volume (in ounces) of liquid waste created per pound of Easy Trap Dust Sheets produced
- Percent volume of liquid waste that is optical brightener

5.21.3 Liquid waste from manufacturing shall not become effluent. Applicant shall provide detailed attestation of liquid waste handling procedures, which will be verified during site visit.

5.21.4 Manufacturing Reporting Requirements –Energy, Water, Air and Waste. The applicant must achieve a 20% reduction in one or 10% reduction in two or more life cycle impacts from manufacturing over the preceding four (4) year reporting period.

The following information shall be reported for the manufacturing processes included in the converting of the raw materials into the finished product (excluding the production of raw materials and package – it is a gate-to-gate report) as annual data for a period of four (4) years preceding the certification year, with

¹² Instructions for calculating VOC content and methods for determining VOCs can be found in GS-53: Specialty Cleaning Products for Industrial and Institutional Use, Section 3.12. <https://www.green Seal.org/gS53.aspx>

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alternate reporting units acceptable upon approval by Green Seal. The information may be reported at the manufacturing plant level instead of for a specific product line.:

Report	Units
Energy	Million British thermal unit (MMBTU)/1000 lbs of product
Water	US gallons/1000 lbs of product
Air Emissions (VOCs)	tons/year
Solid Waste	lbs/1000 lbs of product

6.0 Packaging Requirements

Applicant shall meet the following packaging requirements as applicable.

Primary and Secondary Packaging.

Primary and secondary packaging shall meet the following requirements, based on the packaging material type:

Packaging made from paper or paperboard shall be recyclable and made from 100% recovered material.

Packaging made from containerboard (corrugated cardboard) shall be recyclable and made from at least 30% recovered material.

Packaging made from plastic shall be recyclable, or source-reduced by 20%, or shall contain 25% recovered material content (pre- or post-consumer material).

Heavy Metal Restrictions

The heavy metals lead, mercury, cadmium, and hexavalent chromium shall not be *intentionally introduced*. Further, the sum of the concentration levels of these metals shall not exceed 100 ppm; an exception is allowed for *refillable packages* or packages that would not exceed this maximum level but for the addition of *post-consumer material*.

Other Restrictions

Phthalates, bisphenol A, and chlorinated packaging material are prohibited from being intentionally introduced to plastic packaging; an exception is allowed for packages that would not have added phthalates, bisphenol A, or chlorinated packaging material but for the addition of post-consumer material.

7.0 Product Labeling Requirements

Not applicable to this product category. See the [GS-20 Environmental Innovation Standard](#) for reference.

8.0 Trademark Use Guidelines

Trademark Use.

Any use of the Green Seal® Certification Mark or Green Seal name, e.g., on the product, product label, packaging, secondary documents, or promotional materials, must be in accordance with Green Seal's Trademark Use Guidelines.

Misleading Claims.

The Green Seal Certification Mark shall not be used in conjunction with any modifying terms, phrases, or graphic images that might mislead the consumers as to the extent or nature of the certification.

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ANNEX A (Glossary of Terms)

Note that the defined terms are italicized throughout the Environmental Innovation Standard, GS-20.

Asthmagen. A substance designated as an *asthma*-causing agent as specifically listed by Chemical Abstracts Service (CAS) number by the Association of Occupational and Environmental Clinics (AOEC), which after review by AOEC has met the AOEC sensitization criteria (i.e., A with Rs or Rrs), or if classified as a *respiratory sensitizer*, and with a probable/plausible route of inhalation exposure.

Benchmark Product. A product used for comparison in performance testing; for the purposes of this standard either a *reference product* could be used, or else a national market-leading product, typically selected from the top three or four selling brands or companies for its category from nation-wide data.

Burden Shifting. A concept within product lifecycle review frameworks that defines an unintentional consequence of a change in the system that results in a reduction in one impact category and a significant increase in another impact category, e, g., carbon emissions.

Carcinogen. A substance listed as a known, probable, reasonably anticipated, or possible human *carcinogen* by any of the following agencies or programs: International Agency for Research on Cancer (Groups 1, 2A, and 2B); National Toxicology Program (Groups 1 and 2); EPA Integrated Risk Information System (weight-of-evidence classifications A, B1, B2, C, carcinogenic, known/likely human carcinogen, likely to be carcinogenic to humans, and suggestive evidence of carcinogenicity or carcinogen potential); Occupational Safety Health Administration (as *carcinogens* under 29 Code of Federal Regulations (CFR) 1910.1003(a)(1)); or under the GHS (hazard categories 1 (H350, may cause cancer) and 2 (H351, suspected of causing cancer)).

Colorant. A product *component*, such as a dye or pigment, whose only function is to change the product's color.

Component. A constituent that is deliberately added at any level for its continued presence in the final product to provide a specific characteristic, appearance, or quality¹³ or a contaminant that was not deliberately added but is present above 0.01% by weight in the product.

Exposure Pathway. The way in which a person can be exposed to a hazardous substance. A complete exposure pathway includes (1) the source of chemical and mechanism for release, (2) the exposure point, (3) the transport medium (i.e., from source to exposure point, if different), and (4) the exposure route (e.g., ingestion, inhalation, absorption, etc.).

Fragrance. An additive, often (but not limited to) a multi-*component* additive, used in a product with the purpose of imparting a scent to the product.

Independent Laboratory. A laboratory that (1) has been recognized by a laboratory accrediting organization to test and evaluate products to a related product standard, and (2) is free from commercial, financial, and other pressures that may influence the testing and evaluation process.

Intentionally Introduced. The use of substances for their desired or deliberate presence in the *primary package* for the purpose of providing a specific characteristic or quality. It does not refer to the use of substances as processing aids or the use of an intermediate that imparts certain chemical or physical changes during manufacturing, as long as the substance or intermediate is present in the *primary package* at concentrations below 100 ppm.

Mutagen. A chemical that meets the criteria for Category 1, chemicals known to induce heritable mutations or to be regarded as if they induce heritable mutations in the germ cells of humans, under the GHS.

¹³ Naturally occurring elements and chlorinated organics that may be present as a result of chlorination of the water supply are not considered intentional components if the concentrations are below the applicable maximum contaminant levels in the National Primary Drinking Water Standards found in 40 CFR Part 141.

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Natural Colorant. A *colorant* that comes from biological products, forestry or agricultural materials (including plant, animal, and marine materials), or minerals.

Post-Consumer Material. Material that would otherwise be destined for solid waste disposal, having completed its intended end-use and product life cycle. Post-consumer material does not include materials and by-products generated from, and commonly reused within, an original manufacturing and fabrication process.

Primary Package. Package material that physically contains and contacts the product, not including the cap or lid.

Product As Used. The most concentrated form of the product that the manufacturer recommends for a product's intended use.

Recyclable. The package can be collected in a substantial majority of communities, separated or recovered from the solid waste stream and used again, or reused in the manufacture or assembly of another package or product through an established recycling program.

Refillable Package. A container that is routinely returned to and refilled by the product manufacturer at least five times with the original product held by the package, and demonstrated in practice. For the purpose of this standard, the product manufacturer or the product manufacturer's agent may refill a package.

Reproductive Toxin. A chemical listed as a reproductive toxin (including developmental, female, and male toxins) by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (California Code of Regulations, Title 22, Division 2, Subdivision 1, Chapter 3, Sections 1200, et. Seq., also known as Proposition 65).

Respiratory Sensitizer. A substance designated as leading to hypersensitivity of the airways following inhalation of the substance and meeting the classification criteria of Category 1 respiratory sensitization (H334) in accordance with the GHS.

Secondary Packaging. Packaging used to contain *primary package/s* and typically used for merchandizing. This does not include case or shipping packaging or the *primary package*.

Serious Eye Damage. The production of tissue damage in the eye, or serious physical decay of vision, following application of a test substance to the anterior surface of the eye, which is not fully reversible within 21 days of application. Substances identified under Category 1 for Serious Eye Damage/Eye Irritation (H318) under the GHS are also considered to cause serious eye damage.

Skin Corrosion. The production of irreversible damage to the skin, namely visible necrosis through the epidermis and into the dermis, following the application of a test substance for up to 4 hours. Corrosive reactions are typified by ulcers, bleeding, bloody scabs, and, by the end of observation at 14 days, by discoloration due to blanching of the skin, complete areas of alopecia, and scars. Substances designated as Category 1A, 1B or 1C for Skin Corrosion/Irritation (H314) under the GHS are also considered to cause skin corrosion.

Skin Sensitizer. A substance that will lead to an allergic response following skin contact. Identified under Category 1 for skin sensitization (H317) under the GHS.

Source-Reduced Package. A primary package that has at least 20% less material (by weight) compared to containers commonly used for that product type.

Undiluted Product. The most concentrated form of the product produced by the manufacturer for transport outside its facility.

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ANNEX B (Environmental and Human Health Requirements that Do Not Apply)

5.6 Acute Toxicity

No inhalation or ingestion exposure pathway present; this requirement does not apply.

5.9 Respiratory Sensitization

No inhalation exposure pathway present; this requirement does not apply.

5.12 Chronic Inhalation Toxicity

Exposure pathway relevant to chronic inhalation toxicity not present. This requirement does not apply.

5.13 Combustability

The applicant product is an article.

5.14 Fragrances

The applicant product does not contain fragrances.

5.15 Colorants

The applicant product does not contain colorants.

5.16 Bioaccumulating Compounds

This requirement is a mechanism for water pollution prevention. Product manufacturing process does not result in industrial liquid effluent. The product is intended for dry / water-less use. Therefore, this requirement does not apply. Applicant must meet requirement 5.21.3 to demonstrate liquid waste from manufacturing does not become effluent.

5.17 Eutrophication

Product manufacturing process and use does not create water effluent. Applicant must meet requirement 5.21.3 to demonstrate liquid waste from manufacturing does not become effluent.

5.18 Aquatic Biodegradability

Product manufacturing process and use does not create environmental releases. Applicant must meet requirement 5.21.3 to demonstrate liquid waste from manufacturing does not become effluent.

5.19 Toxicity to Aquatic Life

Product manufacturing process and use does not create environmental releases. Applicant must meet requirement 5.21.3 to demonstrate liquid waste from manufacturing does not become effluent.