

# **EPA's DfE Standard for Safer Cleaning Products (SSCP)**

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*This document was developed with the purpose of making DfE criteria for recognition under the EPA Formulator Program more transparent and accessible. A group convened under the Green Chemistry and Commerce Council provided guidance to DfE for the development of this document to ensure that it would communicate well to its intended audience.*

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## Foreword

### EPA Design for the Environment (DfE) Program

**DfE partners to advance environmental protection.** The Design for the Environment (DfE) Program is one of the Environmental Protection Agency's (EPA's) most valued partnership programs. The DfE Program works in partnership with a broad range of stakeholders to reduce risk to people and the environment by preventing pollution. DfE focuses on industries that combine the potential for chemical risk reduction and improvements in energy efficiency with a strong motivation to make lasting, positive changes. DfE convenes partners, including industry representatives and environmental groups, to develop goals and guide the work of the partnership. Partnership projects evaluate the human health and environmental characteristics, performance, and cost of traditional and alternative technologies, materials, and processes. As incentives for participation and driving change, DfE offers unique technical tools, methodologies, expertise, and the potential for product recognition.

**DfE enables the selection of safer alternatives through informed substitution.** Located in the Office of Pollution Prevention and Toxics, the DfE Program promotes safer product design and green chemistry alternatives through "informed substitution," the considered transition from a chemical of particular concern to safer chemicals or non-chemical alternatives. The goals of informed substitution are to minimize the likelihood of unintended consequences, which can result from a precautionary switch away from a chemical of concern without fully understanding the profile of potential alternatives, and to enable a course of action based on the best information—on the environment and human health—that is available or can be estimated. To be considered safer choices, potential alternatives should exhibit as many of the following characteristics as possible: they should be technically feasible; deliver the same or better value in cost and performance; provide an improved profile for health and the environment; account for economic and social considerations; and have the potential to result in lasting change.

### DfE's Formulator Program

**DfE applies informed substitution to cleaning products.** The DfE Program applies informed substitution to critical areas of environmental and human health protection. In the cleaning industry, the DfE Program partners with product manufacturers or formulators, environmentalists, and others, exchanging information and collaborating on the development of safer products. Formulators have been invaluable in helping DfE understand the critical elements of product functionality and how to optimize product and health/environmental performance. Environmentalists have provided important insight on chemical characteristics, especially on defining the green end of the health/environmental spectrum, as well as ways to ensure confidence in partnership environmental results.

To inform substitution, DfE considers each ingredient in a product within its distinct functional class (e.g., surfactants, solvents, chelating agents, etc.) and compares the toxicity and fate profiles to identify the safest ingredients. DfE recognition is based on using the safest possible ingredients to make a high-performing, cost-effective product. DfE considers whole product characteristics, like possible negative synergies between ingredients and pH level, as well as lifecycle factors, like energy efficiency and water savings.

**DfE's functional class approach screens for safer ingredients.** Each ingredient in a formulation has a role to play in making a product work. Whether it is to aid in cleaning by reducing surface tension (surfactants), dissolve or suspend materials (solvents), reduce water hardness (chelating agents), or provide a scent (fragrances), each ingredient type has a function. Within these "functional classes," many ingredients share similar toxicological and environmental fate characteristics. As a result, DfE focuses its review of formulation ingredients on the key environmental and human health characteristics of concern within a functional class. This approach allows formulators to use those ingredients with the lowest hazard in their functional class, while still formulating high-performing products.

DfE has used the technical expertise of its workgroup of EPA scientists to compare ingredients in the same functional class and thereby identify those ingredients with the lowest hazard profile. The program is now developing *DfE Standards* for safer chemical ingredients to share this expertise and make it easier to formulate safer products. These Standards are used to identify safer chemical ingredients, particularly for use in cleaning products.

**A DfE-labeled product contains the safest possible ingredients.** The DfE logo offers a readily identified way to know that a product is as safe as possible for people and the environment. When you see the DfE logo on a product it means that the DfE scientific review team has screened each ingredient for potential human health and environmental effects and that—based on the best available information, EPA predictive models, and expert judgment—the product contains only those ingredients that pose the least concern among chemicals in their class. For example, if a DfE-recognized product contains a surfactant, then that surfactant will not be toxic to humans and it will biodegrade readily to non-polluting degradation products; many surfactants in conventional products biodegrade slowly or biodegrade to more toxic and persistent chemicals, which threaten aquatic life.

Product formulators or manufacturers who become DfE partners, and earn the right to display the DfE logo on recognized products, have invested heavily in research, development and reformulation, to ensure that their ingredients and finished product align at the green end of the health and environmental spectrum, while maintaining or improving product performance.

**DfE uses a rigorous, in-depth approach to review products.** By focusing at the ingredient level and on inherent characteristics, DfE is able to carefully scrutinize formulations and make meaningful calls on potential concerns. DfE starts its product reviews with information that scientists already know about each chemical ingredient, such as how it works in a detergent and how it affects living things. When that information doesn't tell the full story, EPA looks at an ingredient's chemical structure—its components and shape—to understand how it could impact the environment and people.

A chemical's structure can tell a lot about how the chemical will behave and what types of effects it may have when it comes in contact with people or the environment. DfE uses the special skills of the scientists at EPA who are expert in chemical analysis, hazard and risk assessment, and green chemistry.

**DfE review is especially discriminating and protective.** The DfE Program is unique because of two defining characteristics: its assessment methodology and its technical review team. The DfE technical review team has many years of experience and is highly skilled at assessing chemical hazards, applying predictive tools, and identifying safer substitutes for chemicals of concern. The review team applies the DfE assessment methodology by carefully reviewing every product ingredient. (The review includes all chemicals, including those in proprietary raw material blends, which supplier companies share with DfE in confidentiality).

*DfE reviews provide an extra measure of protection.* DfE uncovers chemicals of concern that can be masked by raw material blends or by dilution in water. By focusing at the ingredient level and on inherent characteristics, DfE is able to carefully scrutinize formulations and make meaningful calls on potential concerns. For example, a surfactant that is acutely toxic to aquatic organisms and environmentally persistent can appear to pose a low concern when blended with other less toxic and less persistent surfactants. Similarly, water, typically the largest percentage ingredient even in concentrates, can mask the toxicity of a hazardous chemical.

*DfE uses its expert knowledge and predictive tools to supplement lists of chemicals of concern.* Few chemicals in commerce have been completely characterized, especially for chronic effects, like cancer and developmental toxicity. For this reason, lists of chemicals with these effects can only be considered a work in progress. DfE uses its knowledge of the structural similarities between chemicals and its predictive models to flag ingredients with similar potential effects.

*DfE spots negative synergies between product components.* These potentially dangerous chemical combinations, which occur with surprising frequency in cleaning products, pose concerns for both acute and longer-term effects. For example, mixing nitro-containing compounds with amines will create nitrosamines, potent carcinogens.

*DfE screens all ingredients for chemicals that may present serious health or environmental effects.* This screening includes ingredients used in small percentages, like fragrances and dyes. Some of the chemicals of most potential concern in cleaning products are those used in small concentrations. Chemicals of concern include sensitizers, carcinogens, and environmentally toxic and persistent compounds. Small quantities don't necessarily mean small hazards: a person, once sensitized to a chemical, can have an allergic response even if exposed at minute levels.

*DfE recommends safer substitutes for chemicals of concern.* Movement toward sustainability requires innovation and continuous improvement. The DfE program works directly with EPA's Green Chemistry specialists to identify and recommend safer chemicals to its partners, continuously raising the bar and redefining the meaning of environmentally preferable products. DfE helps partners by sharing information and guiding the development of safer products. This is a win for industry, families and the environment.

# DfE Criteria for Cleaning Products

## 1 Purpose, scope, and normative references

### 1.1 Purpose

This document, the Design for the Environment (“DfE”) Criteria for Cleaning Products (the “DfE Criteria”), establishes minimum requirements for identifying cleaning products that meet the U.S. Environmental Protection Agency’s DfE Safer Product Recognition (also known as the Formulator Partnership) Program criteria.

### 1.2 Scope

The DfE Criteria are intended to cover cleaning products, including, but not limited to, glass cleaners, general purpose cleaners, washroom cleaners, carpet cleaners, floor care products, laundry detergents, graffiti removers, marine cleaning products, and drain cleaners. While this document includes the review criteria for both the whole product and each product component, the DfE recognition applies only to the finished cleaning product.

### 1.3 Normative references

The following documents are referenced in this text.

AATCC Test Method 171-1995.

ASTM D4488 - 95(2001)e1 Standard Guide for Testing Cleaning Performance of Products Intended for Use on Resilient Flooring and Washable Walls.

ASTM D5343 - 06 Standard Guide for Evaluating Cleaning Performance of Ceramic Tile Cleaners.

ASTM D6094 - 97 Standard Guide to Assess the Compostability of Environmentally Degradable Non-woven Fabrics.

ASTM G122 - 96(2002) Standard Test Method for Evaluating the Effectiveness of Cleaning Agents.

California’s Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1986.

CSPA DCC-03 - Performance Test Methods and Guidelines – Rug Shampoo.

CSPA DCC-09 - Performance Test Methods and Guidelines – Glass Cleaners.

CSPA DCC-09A - Performance Test Methods and Guidelines – Standard Guide for Evaluating the Filming and Streaking of Glass Cleaners.

CSPA DCC-10 – Performance Test Methods and Guidelines – Foam Stability of Hand Dishwashing Detergents.

CSPA DCC-11 - Performance Test Methods and Guidelines – Home Laundering Pre-Wash Spotter Stain Removal.

CSPA DCC-12 - Performance Test Methods and Guidelines – Guidelines for Screening the Efficacy of Oven Cleaners.

CSPA DCC-13 - Performance Test Methods and Guidelines – Fabric Softeners.

CSPA DCC-14 - Guidelines for Anti-Redeposition Properties of Laundry Products.

CSPA DCC-16 - Guidelines for Evaluating the Efficacy of Bathroom Cleaners.

CSPA DCC-17 - Greasy Soil Test Method for Evaluating Spray-and-Wipe Cleaners Used on Hard, Non-Glossy Surfaces.

CAN/CGSB 2-GP-11, Method 20.3.

DfE General Criteria for Safer Ingredients – See <http://www.epa.gov/dfe/pubs/projects/gfcp/index.htm>.

DfE Criteria for Safer Surfactants – See <http://www.epa.gov/dfe/pubs/projects/gfcp/index.htm>.

DfE Supplemental Environmental Criteria for Direct Release Ingredients – See <http://www.epa.gov/dfe/pubs/projects/gfcp/index.htm>.

DfE Criteria for Safer Solvents for Cleaning Products– See <http://www.epa.gov/dfe/pubs/projects/gfcp/index.htm>.

DfE Criteria for Fragrances – See <http://www.epa.gov/dfe/pubs/projects/gfcp/index.htm> (forthcoming).

DfE Partnership Agreement – Annex A.

Globally Harmonized System of Classification and Labeling of Chemicals (GHS)  
[http://www.unece.org/trans/danger/publi/ghs/ghs\\_rev02/02files\\_e.html](http://www.unece.org/trans/danger/publi/ghs/ghs_rev02/02files_e.html).

## 2 Reference section

### 2.1 Definitions

Terms used in the DfE Criteria document that have a specific technical meaning are defined here.

**2.1.1 absorbent:** A material with the tendency to take up another substance into the bulk of the material.

**2.1.2 adsorbent:** A substance that attracts other substances to its surface, often for odor control purposes.

**2.1.3 allergen:** An antigenic substance capable of producing immediate-type hypersensitivity. (See also skin and respiratory sensitizer)

**2.1.4 amine:** An organic compound containing a basic (alkaline) nitrogen atom. Amines may be primary (R-NH<sub>2</sub>), secondary (R<sub>2</sub>NH) or tertiary (R<sub>3</sub>N).

**2.1.5 analog:** Closely related chemical structures. (Reference: Analog Information Model)

**2.1.6 antifoamer:** A material that prevents or minimizes the formation of foam.

**2.1.7 antioxidant:** A chemical compound or substance that inhibits oxidation.

**2.1.8 antiredeposition agent:** An ingredient used in detergents to help prevent loosened soil from resettling after it has been removed during washing. (SDA glossary)

**2.1.9 Association of Occupational and Environmental Clinics (AOEC) list of occupational asthma-gens:** A list of respiratory sensitizers and irritants found in occupational settings. For more information, please see <http://www.aoec.org/>

**2.1.10 asthma:** A chronic disorder of the airways that is complex and characterized by variable and recurring symptoms, airflow obstruction, bronchial hyperresponsiveness (bronchospasm), and an underlying inflammation. Asthma symptoms may be induced by a sensitizer (allergen) or an irritant.

**2.1.11 asthmagen:** An agent that causes asthma.

**2.1.12 bacteria, spore:** A refractile body formed within bacteria, especially genera of the family Bacillaceae, which is regarded as a resting stage during the life history of the cell, and is characterized by its resistance to environmental changes.

**2.1.13 bacteria, vegetative:** Single-celled organisms belonging to Kingdom Monera that possess a prokaryotic type of cell structure, which means their cells are noncompartmentalized, and their DNA is found throughout the cytoplasm rather than within a membrane-bound nucleus. Vegetative bacteria are in growth phase or reproductive phase; nutrients are not limited and the bacteria are not in spore form.

**2.1.14 bioaccumulation:** The progressive increase in the amount of a substance in an organism or part of an organism which occurs because the rate of intake exceeds the organism's ability to remove the substance from the body.

**2.1.15 biodegradability:** The capability of organic matter to be decomposed by biological processes. Both the rate and the completeness of decomposition are factors in biodegradability.

**2.1.16 bleaching agent:** A chemical that acts by oxidizing stains to break them down and remove color.

**2.1.17 builder:** A broad category of materials that enhance or maintain the cleaning efficiency of the surfactant. Several types of compounds, with different performance capabilities, are used. Builders have a number of functions, principally to inactivate water hardness and to supply alkalinity. This is accomplished either by sequestration, i.e. holding hardness minerals in solution, by precipitation, or by ion exchange. Other functions of builders are to supply alkalinity to assist cleaning, especially of acid soils, to provide buffering so that alkalinity is maintained at an effective level, to aid in keeping removed soil from redepositing during washing. Builders for the purposes of this document include chelators, alkalinity boosters, pH Adjusters, and buffering agents.

**2.1.18 California Proposition 65:** A California law that regulates substances the state lists as causing cancer, birth defects, or other reproductive harm. For more information, see <http://www.oehha.org/prop65.html>

**2.1.19 chelating agent:** An organic chemical that forms two or more coordination bonds with a central metal ion. Heterocyclic rings are formed with the central metal ion as part of each ring. Chelating agents can change the properties of metal ions, help to transport metal ions, and prevent scale formation.

**2.1.20 coalescing agent:** A chemical that lowers the minimum film formation temperature of a polymer (typically in a floor finish) so that it will form a uniform film at normal indoor temperatures. These chemicals are typically solvents.

**2.1.21 colorant:** Any substance, natural or synthetic, whose primary use is to color various materials.

**2.1.22 component:** A chemical as identified by its Chemical Abstract Service (CAS) number.

**2.1.23 compostable:** Capable of undergoing biological decomposition in a compost site as part of an available program, such that the material is not visually distinguishable and breaks down into carbon dioxide, water, inorganic compounds, and biomass, at a rate consistent with known compostable materials.

**2.1.24 corrosion inhibitor:** Prevents the disintegration of a material into its constituent atoms.

**2.1.25 cross-linker:** A material that forms covalent bonds between polymer chains, either within or across chains.

**2.1.26 defoamer:** Agent used to reduce foam.

**2.1.27 denaturation:** 1. To render unfit to eat or drink without destroying usefulness in other applications, for example to add methanol or a bittering agent to ethyl alcohol. 2. Change in molecular structure of proteins so that they cannot function normally, often caused by splitting of hydrogen bonds following exposure to reactive substances or heat.

**2.1.28 direct release products:** Products that are intended for use in applications that result in their immediate release to the environment, so that they bypass sewage treatment or septic systems, shortening the time for degradation prior to entering sensitive environments. Home car washes, boat cleaners and graffiti removers are examples of direct-release products.

**2.1.29 dispersing agent:** A material that increases the stability of particles in a liquid formulation.

**2.1.30 endocrine disruption list: European Commission** list of substances prioritized for testing for endocrine disruption as identified in the June 2000 BKH report, "*Towards the establishment of a priority list of substances for further evaluation of their role in endocrine disruption*" and its subsequent revisions.

**2.1.31 enzyme:** A protein that acts as a catalyst in biochemical reactions. Each enzyme is specific to a particular reaction or group of similar reactions.

**2.1.32 enzyme stabilizer:** A chemical that maintains the activity of enzymes in the formulation by preventing degradation and denaturation prior to use.

**2.1.33 foam booster:** An additive used in detergents to increase suds production and stabilize lather.

**2.1.34 formulator:** A company that designs and makes chemical choices for the manufacture of products. DfE partners with formulator companies. Formulators may private label or license their DfE-recognized formulas and thereby extend DfE recognition to their licensees or private label customers. Key in DfE's decision to extend recognition to private label or licensed products is a demonstration that the partner retains full control of the recognized formulation.

**2.1.35 fluorescent whitening agent:** (optical brightener) Complex, organic molecules that adhere to fabrics as though they were dyes. Ultraviolet (UV) energy is absorbed, converted, and emitted as visible blue light to enhance fabric appearance and maintain whiteness or brightness.

**2.1.36 fluorosurfactant:** Any organic substance which contains fluorine-based functional groups and has surface-active properties.

**2.1.37 fragrance:** A raw material or a mixture of fragrance raw materials for use in a cleaning product for the primary purpose of imparting a scent and/or masking base odor.

**2.1.38 fragrance raw material:** Any basic substance, obtained by chemical synthesis or derived from a natural source, present in a fragrance at greater than 0.01% by weight. Fragrance raw materials include aroma chemicals, fragrant extracts (essential oils), and all auxiliary materials, including--but not limited to--solvents, surfactants/solubilizers, UV inhibitors, antioxidants, stabilizers, preservatives, and fixatives.

**2.1.39 hydrotrope:** A substance that increases the solubility in water of another material, which is only partially soluble.

**2.1.40 ingredient:** One component or a blend of components that are intentionally added to make up a finished product. All ingredients are subject to this standard, regardless of percentage in the formulation. See Section 5.13 for information on residuals.

**2.1.41 irritant:** An agent that induces inflammation. Respiratory irritants may produce Reactive Airway Dysfunction Syndrome (RADS), also called irritant induced asthma.

**2.1.42 licensee product:** A product whose contents are identical to those in a DfE-recognized product that is manufactured by a third-party, non-DfE partner under a contract between the DfE-partner/manufacturer and the third party/licensee.

**2.1.43 manufacturer:** A company that manufactures a finished product formulation. DfE may partner with product manufacturers.

**2.1.44 mesophilic:** A descriptive term for a phase in the composting process that occurs between temperatures of 20 to 45°C (68 to 113°F) and is characterized by the presence and activity of organisms capable of thriving at these temperatures.

**2.1.45 optical brightener:** An alternate name for fluorescent whitening agent. (FWA]

**2.1.46 persistence:** The length of time the chemical can exist in the environment before being destroyed (i.e., transformed) by natural processes.

**2.1.47 pH adjuster:** Acids or bases that decrease or increase pH as needed in a formula.

**2.1.48 photosensitizer:** A chemical which causes a photoallergy. Photoallergy is a form of allergic reaction due to a metabolite formed by the influence of light. The second and subsequent exposures produce photoallergic skin conditions, which are often eczematous.

**2.1.49 plasticizer:** Plasticizers are additives that give hard plastics the desired flexibility, durability or other functional characteristics.

**2.1.50 polymer:** A chemical substance consisting of molecules characterized by the sequence of one or more types of monomer units and comprising a simple weight majority of molecules containing at least three monomer units which are covalently bound to at least one other monomer unit or other reactant and which consists of less than a simple weight majority of molecules of the same molecular weight.

**2.1.51 preservative:** A substance that protects against the natural effects of aging, such as decay, discoloration, oxidation, and bacterial degradation.

**2.1.52 private label product:** A product whose contents are identical to those in a DfE-recognized product, or vary only as to minor components (reviewed by DfE and specified in the partnership agreement), that is manufactured by a DfE partner for a third-party/private-label company or distributor.

**2.1.53 protease:** An enzyme, also called a peptidase, that catalyzes the cleavage of internal peptide bonds in a polypeptide or protein.

**2.1.54 residual:** Trace amounts of chemicals that are incidental to manufacturing. Residuals are not part of the intended chemical product, but are present because of factors such as the nature of the synthesis and engineering pathways used to produce the chemical. Residuals include: unintended by-products of chemical reactions that occur in product formulation and chemical synthesis, impurities in an ingredient that may arise from starting materials, incompletely reacted components, and degradation products.

**2.1.55 residual of concern:** A residual that fails to meet the criteria in the General Standard for carcinogenicity, mutagenicity, reproductive toxicity and other human health effects, or fails to meet the criteria for persistence, bioaccumulation and toxicity, as defined by the Final PB&T Rule. See Section 5.13 for more information.

**2.1.56 rheology modifier:** A chemical that modifies the viscosity of a formulation.

**2.1.57 sensitization:** The progressive amplification of a response following repeated administrations of a stimulus.

**2.1.58 sensitizer, respiratory:** A substance that will lead to hypersensitivity of the airways and resultant effects following inhalation.

**2.1.59 sensitizer, skin:** A substance that will induce an allergic response following skin contact.

**2.1.60 solubility enhancer:** A chemical additive that prevents chemicals or materials from separating or falling out of solution. Solubility enhancers are often used in concentrated formulations. Solubility enhancers consist of subcategories such as hydrotropes and small amines.

**2.1.61 solvent:** A liquid that has the ability to dissolve, suspend, or extract other materials without causing chemical change to the material or solution.

**2.1.62 supplier:** A manufacturer of a chemical component or ingredient, which is not an end-use product. A supplier furnishes raw materials to formulators.

**2.1.63 surfactant:** Any organic substance and/or preparation which has surface-active properties and which consists of one or more hydrophilic and one or more hydrophobic groups of such a nature and size that it is capable of reducing the surface tension of water, and of forming spreading or adsorption monolayers at the water-air interface, and of forming emulsions and/or microemulsions and/or micelles, and of adsorption at water-solid interfaces. Surfactants may also be used for purposes other than detergents such as emulsifiers, foaming agents, wetting agents, and stabilizers for dispersions.

**2.1.64 terpenes:** Unsaturated hydrocarbons occurring in most essential oils and oleoresins of plants. Their structures are based on isoprene units, and may be cyclic or linear.

**2.1.65 toll manufacture product:** A product whose contents are identical to those in a DfE-recognized product that is manufactured by a third-party, non-DfE partner under an agreement between the DfE partner and the third-party/toll manufacturer.

**2.1.66 vapor:** The gaseous form of a substance or mixture released from its liquid or solid state.

## 2.2 Abbreviations

AATCC – American Association of Textile Chemists and Colorists

ANSI – American National Standards Institute

AOEC – Association of Occupational and Environmental Clinics

ASTM – American Society for Testing and Materials

CAS – Chemical Abstract Service

CSPA – Consumer Specialty Products Association

DfE – Design for the Environment

DOT – Department of Transportation

EPA – US Environmental Protection Agency

FDA – Food and Drug Administration

FIFRA – Federal Insecticide, Fungicide, Rodenticide Act

GHS – Globally Harmonized System of Classification and Labeling of Chemicals

HAP – Hazardous Air Pollutant

IARC – International Agency for Research on Cancer

ISO – International Standards Organization

IUPAC – International Union of Pure and Applied Chemistry

MSDS – Material Safety Data Sheet

NTP – National Toxicology Program

OECD – Organisation for Economic Co-operation and Development  
OSHA – Occupational Health and Safety Administration  
PBT – Persistent, Bioaccumulative and Toxic  
SIDS – Screening Information Data Set  
TRI – Toxic Release Inventory  
TSCA – Toxic Substances Control Act  
VOC – Volatile Organic Compound

### **3 General requirements**

#### **3.1 General**

**3.1.1** Product and material information described in Section 3.2 shall be used to determine the specific section under which a product and its ingredients shall be evaluated.

**3.1.2** Products or ingredients whose intended uses fall under more than one section of the DfE Criteria document shall be evaluated under the section having the most rigorous evaluation criteria.

**3.1.3** To obtain DfE recognition for a product, the applicant must comply with the information requirements in Section 3.2 et seq. and must enter into a partnership agreement with EPA. The partnership agreement governs the relationship between EPA/DfE and its partner, the product formulator or manufacturer. It contains, among other elements, provisions covering the following: full ingredient disclosure; notification of changes in formula and the need for prior DfE approval; the partner's commitment to continuous product improvement; limitations and responsibilities regarding use of the DfE recognition and logo; and partnership sunset and opportunity for renewal. A sample partnership agreement, containing all required elements, appears in Annex A.

#### **3.2 Information and formulation requirements**

**3.2.1** The applicant shall submit, at a minimum, the complete product formulation information. All ingredients shall be reviewed to ensure that the potential environmental and human health effects of products and ingredients are accurately and adequately identified. Applicants must report all ingredients intentionally added to the formulation, regardless of percentage. Known residuals must be reported if present at greater than 0.01 percent; see the discussion of residuals in Section 5.13. Applicants must report:

- The intended function or end use of the product or the material;
- The composition of the formulation, including the percent or percent range of each ingredient in the formulation and its corresponding function;
- A Chemical Abstract Service (CAS) number, functional name, trade designation, and supplier for each chemical present in the formulation;
- A Material Safety Data Sheet (MSDS) for the product and each ingredient, when available;
- The pH of the finished product, if applicable;
- Effective use concentrations;
- The expected yearly production volume of the end-use product;
- Product performance data;
- Information on environmental considerations in packaging;

- When available, a list of published and unpublished toxicological studies relevant to the chemicals and impurities present in the product, component, or material; and
- Any other available supplemental product or ingredient environmental health and safety information, including biodegradation tests on individual ingredients; acute aquatic toxicity tests on product as a whole or individual ingredients; and human health and safety tests.

**3.2.2** By reviewing the formulation information provided by the applicant, DfE or its designate shall determine any formulation-dependent contaminants to be evaluated in addition to the product-specific analytes identified in each product section.

### **3.3 Renewals**

As described in Section A.13 of the Partnership Agreement, DfE partners must renegotiate and renew the partnership prior to its expiration date (i.e., three years from the date of initiation). As part of the renegotiation, DfE will consider the partner's performance under the partnership, including, but not limited to, its achievement of any continuous improvement targets specified in the agreement. Discussion of green chemistry innovations and opportunities for formulation improvements will be part of the renegotiations.

### **3.4 End-user education**

Formulators of DfE-recognized products shall provide their end-user(s) with information on environmental, consumer, and worker safety matters. DfE encourages partners to provide customers with a 16-section format MSDS as established by the American National Standards Institute (ANSI) standard for preparation of MSDSs (Z400.1). The partner or its distributor shall offer training on the proper use of the product (instructions on how to dilute, use and dispose of the product). OSHA, DOT, and other authorities require manufacturers to provide handling and other worker safety information.

### **3.5 Compliance**

As described in Section A.10 of the Partnership Agreement, partners agree to make available to the EPA/DfE, on a confidential basis, formulation bills of material (e.g., batch tickets) to confirm that the recognized products contain the ingredients as described in the Partnership Agreement.

### **3.6 Verification of Partnership Compliance**

**3.6.1 Annual desk audit.** DfE partners will submit to the third-party verifier specified materials (elements of the desk audit are listed in Annex B.1). These materials will include a list of ingredients for each recognized product and a statement that the ingredients and all claims made regarding the Agency's recognition (e.g. use of the DfE logo) comport with the Partnership Agreement.

**3.6.2 On-site audit.** DfE partners will allow the third-party verifier to visit their manufacturing facilities and conduct audits (elements of the on-site audit are listed in Annex B.2). The audit will focus on the manufacturing process and the procedures in place to ensure that recognized products comport with the Partnership Agreement.

If a single facility produces a recognized product, that facility will be subject to a site audit once per three-year partnership period. If multiple facilities produce a recognized product, two sites will be selected for an audit once per three-year partnership period. Licensees and toll manufacturers are subject to the same rules as primary partners and their facilities will be considered separately from the facilities of the primary partner.

**3.6.3 External verifier.** An external verifier—a person or body carrying out the verification—will conduct the site visits or paper audits. The external verifier must meet the criteria for qualified third parties in section 7 of this document, as well as the competencies for external verifiers for products in ISO/IEC Guide

65: General criteria for bodies operating product certification systems. Competence criteria are specified in sections 5.1.1, 5.1.2 and 5.2.1. An external verifier must be free of any potential conflicts of interest.

**3.6.4 Results.** If the audit reveals items of noncompliance, the partner shall promptly correct the non-compliance. The noncompliant company shall submit to the external verifier and to DfE, in writing and within 30 days of receiving written notice of noncompliance, the following: a root-cause analysis, an explanation of corrective action, and a preventive action plan. In collaboration with DfE, the external verifier shall confirm that the partner has taken the remedial action necessary to assure DfE of the partner's ability to satisfy the terms of the partnership agreement. Unaddressed or egregious noncompliance may serve as grounds for terminating the partnership. In any case of serious noncompliance, the DfE partner may be asked to immediately cease use of the DfE logo; procedures for handling existing stocks of products and labels will be determined on a case-by-case basis. The noncompliant partner must provide written confirmation that they have ceased using the DfE logo and an estimate of the quantities of currently labeled product.

### **3.7 Third-party Manufacture of DfE-labeled Products**

#### **3.7.1 Private label products**

A private label product may carry the DfE logo provided that its contents are either identical to those in a specified DfE-recognized product, or very similar, and the ingredients that are different have been approved in the partnership agreement. Before manufacture of the private label product that will carry DfE recognition, the DfE partner must inform and receive permission from DfE, indicating the name of the private label product, the label owner, and the specific DfE-recognized product to which it is identical or on which it is based. Private label products are subject to the audit provisions contained in section 3.6.

#### **3.7.2 Licensee products**

A licensee product may carry the DfE logo provided that its contents are identical to those in a specified DfE-recognized product. Before manufacture of the licensee product, the DfE partner must inform and receive permission from DfE, indicating the name of the licensee manufacturer and of the specific DfE-recognized product to which the licensee product is identical. To assure quality, the licensee product must be manufactured under an agreement between the DfE partner and the licensee and the agreement must be available to DfE on request. DfE partners must ensure that their licensees submit to the audit provisions contained in section 3.6.

#### **3.7.3 Toll manufacture products**

A toll manufacture product may carry the DfE logo provided that its contents are identical to those in a specified DfE-recognized product. Before toll manufacture of the DfE-recognized product, the DfE partner must inform and receive permission from DfE, indicating the name of the toll manufacturer and of the specific DfE-recognized product to which the toll manufacture product is identical. To assure quality and compliance with the partnership agreement, the toll manufacture product must be manufactured under an agreement between the DfE partner and the toll manufacturer and the agreement must be available to DfE on request. DfE partners must ensure that their toll manufacturers submit to the audit provisions contained in section 3.6.

## **4 Product-level requirements**

### **4.1 Scope**

The requirements in this section apply to finished cleaning products, including those in the following categories: hard surface, glass, degreasers, biological-based cleaning and maintenance, hand soaps, floor care, carpet care, laundry, dish detergents, marine cleaning, graffiti removers and odor abatement.

## **4.2 Criteria for all products**

### **4.2.1 Performance**

To ensure a baseline measure of performance, the applicant shall make a good faith demonstration that their products perform effectively. Applicants may submit appropriate test results as specified below or provide equivalent performance tests agreed upon by DfE.

Performance testing requirements are product-category specific; any valid and scientifically sound method of demonstrating product performance shall be accepted. Examples of performance requirements that are acceptable to DfE include but are not limited to:

#### **4.2.1.1 Glass cleaners**

The product shall meet user requirements for cleaning, streaking and smearing when tested according to CSPA method DCC-09 or equivalent method agreed upon by EPA DfE.

#### **4.2.1.2 General purpose cleaners**

The product shall meet user requirements for soil removal on relevant substrates when tested according to ASTM method D4488-95, ASTM G122, CAN/CGSB 2-GP-11, Method 20.3 or an equivalent method agreed upon by EPA DfE.

#### **4.2.1.3 Carpet cleaners/spot cleaners**

The product shall meet user requirements when tested according to CSPA DCC-03 and AATCC Test Method 171-1995 or equivalent method agreed upon by EPA DfE.

#### **4.2.1.4 Washroom cleaners**

The product shall meet user requirements for soil removal using ASTM D5343, CSPA DCC-16 or equivalent method agreed upon by EPA DfE.

#### **4.2.1.5 Degreasers**

The product shall meet user requirements for soil removal on relevant substrates when tested according to ASTM method D4488-95, ASTM method G122, CAN/CGSB 2-GP-11, Method 20.3, CSPA DCC-17 or an equivalent method agreed upon by EPA DfE.

#### **4.2.1.6 Laundry and related products**

A consumer pre-wash spotter stain remover shall meet user requirements in CSPA DCC-11 or an equivalent method agreed upon by DfE.

A fabric softener shall meet user requirements in CSPA DCC-13 or an equivalent method agreed upon by DfE.

A laundry detergent shall meet user requirements in CSPA DCC-14 or an equivalent method agreed upon by DfE.

#### **4.2.1.7 Oven cleaners**

An oven cleaner shall meet user requirements in CSPA DCC-12 or an equivalent method agreed upon by DfE.

#### **4.2.1.8 Hand dish soaps**

An hand dish soap shall meet user requirements in CSPA DCC-10 or an equivalent method agreed upon by DfE.

#### **4.2.2 pH**

To minimize potential for dermal and eye irritation or injury, product pH shall be  $\geq 2$  and  $\leq 11.5$ . Products with  $\text{pH} < 2$  or  $> 11.5$  may be considered for recognition if *in vivo* assays prove the product is not corrosive to the skin or to the eyes.

#### **4.2.3 Life-cycle considerations**

##### **4.2.3.1 Energy**

DfE encourages the use of energy-saving technologies including the use of concentrates and detergents that work in cold water. DfE considers energy efficiency by comparing product efficiency to that typical of the class, recognizing the importance of reducing energy use and generation of Greenhouse Gases. DfE expects that energy-efficient products would continue to meet the hazard criteria in Section 5.

##### **4.2.3.2 Ozone depleting compounds**

DfE-recognized products shall not contain ozone-depleting compounds as defined by the Montreal Protocol. (1987) (<http://www.epa.gov/ozone/science/ods/index.html>)

#### **4.2.5 Labeling requirements**

The DfE partner shall provide its customers with information on environmental, consumer, and worker safety matters. The DfE partner shall also meet OSHA, DOT, and any other authority's requirements to provide safe handling and other worker safety information, as applicable.

#### **4.2.6 Packaging**

DfE encourages the use of environmentally friendlier packaging, and asks partners to describe their efforts in this regard. Use of the tools provided by the Sustainable Packaging Coalition to revamp packaging would be considered a significant effort.

#### **4.2.7 Volatile organic compounds (VOCs), hazardous air pollutants (HAPs), and EPA's Toxic Release Inventory (TRI)**

DfE seeks to minimize the VOC content of partnership products. At a minimum, DfE limits product VOC content as prescribed by EPA's Office of Air and Radiation, as applicable (see 40 CFR 59, Subpart C). TRI-listed chemicals or HAPs are not allowed in DfE products.

#### **4.2.8 Flammability**

DfE takes note of product flashpoint, as appropriate, and seeks to ensure low concerns for combustibility. Flashpoint is generally not a concern when dealing with water-based mixtures. Products shall meet the regulations for flammable liquids, which include:

- 49CFR173.120 (a) (5) - Flammable Liquid Definition
- 49CFR173.150 (e) - Aqueous Solutions of Alcohol
- 40CFR261.21 (a) (1) - Characteristic of Ignitability

### **4.3 Cleaning systems**

A cleaning system, such as a laundry system, is not eligible for recognition unless every component meets the DfE Criteria. The DfE logo may be used to indicate recognition for the cleaning system, but not on individual components in the system unless they have independent, end-use applications.

#### **4.4 Continuous Delivery Systems for Consumer Products**

DfE will consider for recognition consumer products in innovative continuous delivery systems (as distinct from products poured from a bottle or manual spray pumps) that reduce the potential for inhalation exposure and meet other environmental goals. Recognition candidates must demonstrate significant innovation and environmental leadership. Product ingredients must satisfy the DfE criteria set forth in this document.

If their ingredients satisfy DfE criteria, products in continuous delivery systems may be recognized if they meet the following conditions:

1) Propellant. The system propellant does not pose concerns for the environment and human health (e.g., compressed air; inert gas, like nitrogen; or CO<sub>2</sub>, if captured from combustion processes, with zero net increase in atmospheric CO<sub>2</sub>).

2) Particle size distribution. Either a) the product contents from nozzle to the point of delivery are in a form that does not contain inhalable or respirable particles (e.g., foam); or, b) if the product contents are delivered in particle form, the distribution of particles below 10 microns (the inhalation threshold) must be less than 1% and below 3.5 microns (the deep-lung respirability threshold) must be at 0%, as demonstrated by the Malvern Mastersizers or other generally accepted method for measuring particle size of liquid sprays.

3) Packaging. a) Internal packaging. Any internal product packaging must not contain chemicals of concern per the DfE criteria; b) External packaging. The product container and other external packaging is made, to the extent feasible, of recycled materials and is itself recyclable.

## **5 Component-specific requirements**

### **5.1 Scope**

The requirements of this section apply to the components of a finished cleaning product. The general requirements outlined in Section 5.2 will apply to all chemicals unless noted differently in the functional-class-specific criteria.

### **5.2 General requirements**

The general requirements listed in the DfE General Criteria for Safer Ingredients (<http://www.epa.gov/dfe/pubs/projects/gfcp/index.htm>), as applied by experts in the DfE Program, are intended to be a minimum set of criteria all ingredients must meet to be acceptable for use in a DfE-recognized product. The subsequent sections are additional requirements or exceptions to the general requirements for specific functional-use ingredient categories.

For every chemical, ingredient data are required for each endpoint to confirm that the ingredient meets the DfE criteria. Established lists from authoritative bodies, such as the IARC and NTP carcinogen lists, may be used to screen ingredients, where available and as noted in the criteria below. When an ingredient is not found on a list, raw data for each endpoint are preferred. Appropriate analog data, applied via models and expert judgment, may also be used to fill data gaps.

#### **5.2.1 Supplemental Requirements for Components that Appear on Certain Lists of Chemicals of Potential Concern**

If a component appears on one of the following lists of chemicals of potential concern, it will be screened as described in section 5.2: the California Proposition 65 list, which includes substances the state lists as

causing cancer, birth defects, or other reproductive harm; the list of substances prioritized for testing for endocrine disruption by the European Commission; and the list of potential sensitizers published by the Association of Occupational and Environmental Clinics.

### **5.3 Surfactants**

Surfactants shall meet the criteria described in detail in the DfE Criteria for Safer Surfactants: The Surfactant Screen.

(<http://www.epa.gov/dfe/pubs/projects/gfcp/index.htm>).

### **5.4 Direct release ingredients**

Ingredients that are used in products that are intended for use in applications that result in their immediate discharge to the environment, so that they bypass sewage treatment or septic systems shall meet the criteria in the DfE Criteria Environmental Toxicity and Fate for Chemicals in Direct Release Products.

(<http://www.epa.gov/dfe/pubs/projects/gfcp/index.htm>)

### **5.5 Solvents**

Solvents shall meet the general requirements in Section 5.2 unless otherwise noted below.

#### **5.5.1 Alcohols, esters, ethylene glycol ethers, and propylene glycol ethers**

Solvents classified as alcohols, esters, ethylene glycol ethers, or propylene glycol ethers shall meet the solvent criteria described in detail in the DfE Criteria for Safer Solvents in Cleaning Products(phase I): the Solvent Screen.

<http://www.epa.gov/dfe/pubs/projects/gfcp/index.htm>

#### **5.5.2 d-Limonene**

D-limonene may be used in a DfE-recognized product in concentrations at which the potential oxidation products may be present at 20 millimoles per liter (mmol/L) or less (corresponding to a limonene concentration of 1.36% or less) in an overall formulation.

### **5.6 Fragrances**

Fragrances shall be evaluated according to the requirements of the DfE Criteria for Fragrances.

(<http://www.epa.gov/dfe/pubs/projects/gfcp/index.htm>)

### **5.7 Builders**

Builders shall meet the general requirements in Section 5.2 unless otherwise noted below.

#### **5.7.1 Chelators**

Chelators shall meet the general requirements in Section 5.2. In addition, DfE-recognized products shall not contain inorganic phosphates that contribute to the process of eutrophication, or NTA, a potential carcinogen. Chelators that have MW above 1000 shall be evaluated under the polymer criteria.

#### **5.7.2 Alkalinity boosters, pH adjusters & buffering agents.**

Alkalinity boosters, pH adjusters & buffering agents shall meet the general requirements in Section 5.2. In addition, see the pH restrictions for the formulated product under Section 4.2.2.

### **5.8 Polymers**

Polymers shall meet the general requirements in Section 5.2.

In addition, the following information is required for all polymers:

- molecular weight;
- ratio of each monomer in the polymer, if applicable;
- percent residual monomer;
- percent of polymer with a molecular weight of <1000; and
- percent of polymer with a molecular weight of <500.

Polymers shall not consist of monomers known to cause occupational asthma (for example, diisocyanates are used in isocyanate-based polyurethanes).

### **5.9 Bacteria (spores & vegetative)**

Bacteria (spores & vegetative) strains shall be evaluated using complete human health and environmental risk assessments. These risk assessments shall include hazard assessments and exposure to workers, users and the environment during product use and end-of-life.

### **5.10 Toxic elements**

DfE-recognized products shall not contain toxic elements such as heavy metals. Unavoidable, de minimis levels may be present, e.g., from inorganic materials mined from the earth.

### **5.11 Enzyme stabilizers**

Enzyme stabilizers shall meet the general requirements in Section 5.2.

Products containing protease enzymes may conditionally use boric acid as an enzyme-stabilizing material.

### **5.12 Disposable wipes**

Disposable wipes shall be demonstrated to be compostable or flushable as formulated.

DfE considers wipe composition and ability to decompose under mesophilic conditions (20-45°C) as key characteristics for disposable cleaning wipes when they are the intended method of application for a cleaning formulation. At a minimum, wipes shall be made entirely of compostable material (ASTM D5338-98).

As an alternative to testing, companies may have their suppliers submit a certificate of analysis, showing that the wipe is made of natural, compostable materials.

To be flushable, a disposable wipe must pass through the toilet and drainline system, be transported in wastewater conveyance systems, and be compatible with wastewater treatment systems where they exist, or in some regions, discharges of untreated wastewater. An example of an acceptable test protocol is the Guidance Document for Assessing the Flushability of Nonwoven Consumer Products, published by INDA, the U.S.-based association of nonwoven fabrics industry and EDANA, the European-based international association serving the nonwovens and related industries.

### **5.13 Residuals**

Residuals of concern shall be limited to less than 0.01% (by weight) or 100ppm in the formulation. For ingredients known to contain residuals of concern, DfE's goal will be to limit those residuals to the lowest practicable levels. Dilution will not be considered in calculating the percentage of residuals in concentrates. Formulators should understand that residuals may be present and should encourage chemical

manufacturers to carefully monitor and control processes to limit residuals of concern. [Note: DfE is working to ascertain whether the state of green chemistry can support the restrictions imposed by this section.]

#### **5.14 Other ingredients**

The following ingredients shall meet the general requirements in Section 5.2.

- Cross-Linkers
- Solubility enhancers
  - Hydrotropes
  - Small Amines
- Bleaching agents
- Preservatives/Antioxidant
- Rheology Modifiers
- Plasticizers
- Foam Boosters, Defoamers and Antifoamers
- Denaturants
- Absorbents and Adsorbents
- Corrosion inhibitors
- Antiredisposition agent
- Dispersing agent
- Coalescing agent
- Dyes & Optical Brighteners

## **6 Use of the mark**

### **6.1 Terms of use**

**6.1.1** The partner may use the DfE logo, shown below, on containers or container packaging of Qualifying Products or on advertising related solely to these products, provided that EPA/DfE has reviewed and approved the intended use of the logo. The partner shall not use the logo or describe EPA/DfE's recognition on any general company materials, non-Qualifying Products or associated literature, or advertising not related to the Qualifying Products. The partner is not permitted to use the EPA official seal or logo at any time.

**6.1.2** Use of the DfE logo must be accompanied by the following informational tagline, in close proximity to the logo: "Recognized for Safer Chemistry." The tagline should also include the EPA Web address, [www.epa.gov/dfe](http://www.epa.gov/dfe), as shown below. Additionally, the partner shall include in advertising of the Qualifying Products an endorsement disclaimer and various educational information for the consumer regarding the DfE partnership. The partner and EPA/DfE shall work to find an appropriate place (e.g. company Web site) connected with advertising for the Qualifying Products to include the following language along with educational information:

EPA/DfE recognition does not constitute endorsement of this product. The Design for the Environment logo signifies that the formula for this product, as «Company\_Name» has represented it to the EPA, contains ingredients with more positive health and environmental characteristics than conventional cleaners. EPA/DfE relies solely on «Company\_Name», its integrity and good faith, for information on the composition, ingredients, and attributes of this product. EPA/DfE has not independently identified, i.e., via chemical analysis, the ingredients in the product formula, nor evaluated any of «Company\_Name»'s non-ingredient claims. EPA/DfE expresses its judgment and professional opinion only as to the environmental and human health characteristics of the product, based on currently available information and scientific understanding.

**6.1.3** The partner and EPA/DfE acknowledge that under 5 C.F.R. §2635.702(c), EPA may not endorse the purchase or sale of commercial products and services provided by the partner. The Parties agree to ensure that promotional materials describing or resulting from this Agreement do not contain statements implying that EPA/DfE endorses the purchase or sale of commercial products. This includes statements to the public in news releases, publications, on web sites or any other media.

**6.1.4** The partner shall make available to EPA/DfE for review and approval any materials, including press releases, promotional materials and advertisements that the partner develops in connection with the partnership, and especially information that describes or characterizes the DfE Formulator Program or EPA/DfE's position on issues related to the cleaning product sector.

**6.1.5** The partner shall discontinue use of the DfE logo or any other form of EPA/DfE recognition, within 30 days, under the following circumstances: If the partner stops formulating the Qualifying Products using the agreed-upon ingredients; upon the termination of this Agreement; or, if so notified by EPA in writing.

## 6.2 Examples of appropriate use of the EPA/DfE certification mark

### Example 1:



Recognized for Safer Chemistry  
[www.epa.gov/dfc](http://www.epa.gov/dfc)

### Example 2:



Recognized for Safer Chemistry  
[www.epa.gov/dfc](http://www.epa.gov/dfc)

## 7 Profiler requirements

Candidates for DfE recognition must use the services of a qualified third party profiler to prepare product recognition applications. To become a qualified third party profiler the candidate must submit a paper application to provide evidence of competency against the requirements in Sections 7.1 and 7.2, and undergo the pilot review described in Section 7.3.

### 7.1 Elements of technical competence

The profiler shall have the skills, experience, and resources to perform chemical hazard assessments.

#### 7.1.1 Staff

A profiler shall have the appropriate personnel to perform hazard assessments. Staff shall include chemists, biologists, toxicologists, or others with science/technical backgrounds.

#### 7.1.2 Assessment and interpretation abilities

A profiler shall establish the ability to assess and interpret diverse toxicological and other health and environmental information. This shall include maintaining appropriate staffing; a track record as a data reviewer; experience as a standards developer, or certifier to standards or criteria. The profiler shall meet the criteria of International Standards Organization (ISO) 65 to demonstrate a commitment to maintaining these capabilities.

### **7.1.3 Access and management of hazard information**

A profiler shall establish the ability to access and manage chemical, health and environmental hazard information, including fluency with chemicals at the structural level. This shall be indicated by appropriate staffing, with chemical and information technology expertise; protocol and equipment for data searching, storage and retrieval; relevant experience and work products.

### **7.1.4 Use of estimation models and software**

A profiler shall demonstrate skill at using EPA and other physical-chemical and environmental estimation models and software. This shall be indicated by involvement with EPA's Sustainable Futures Program; submission of Sustainable Futures Premanufacture Notices; relevant experience and work products.

### **7.1.5 Secure handling of proprietary business information**

A profiler shall have the appropriate systems and procedures in place to ensure the protection of all proprietary business information obtained through the review process for this program.

## **7.2 Elements of credibility and good standing**

The profiling organization must be able to establish neutrality, trustworthiness, and reliability.

**7.2.1** A profiler shall demonstrate a commitment to objectivity and due process approach by meeting the criteria of ISO 65.

**7.2.3** A profiler shall demonstrate familiarity with DfE Formulator review process and assessment methodology by having training and interacting with DfE and companies interested in DfE recognition.

**7.2.4** A profiler shall demonstrate a track record of high performance. This shall be supported by testimonials from clients and others in a position to evaluate performance.

## **7.3 Pilot review requirements**

**7.3.1** As the final step in the process the profiler shall demonstrate competency through a review of a formulation(s) judged by DfE to be representative of those recognized by the program. DfE will review the results against the criteria in this section and determine whether the applicant has demonstrated competence.

## Annex A

### Partnership Agreement

# **PARTNERSHIP AGREEMENT BETWEEN «COMPANY» AND U.S. ENVIRONMENTAL PROTECTION AGENCY DESIGN FOR THE ENVIRONMENT PROGRAM**

## **A.1 Statement of purpose**

The purpose of this Partnership Agreement (“Agreement”) is to set forth the basis, terms, and goals of the Design for the Environment (“DfE”) voluntary partnership between «Company» (“«Company\_Name»”) of «City\_State\_Zip\_» and the U.S. Environmental Protection Agency (“EPA”). The partnership is part of the DfE safer chemical use initiative for commercial formulators. The basic goal of the initiative is to seek and promote innovative chemical products, technologies, and practices that benefit human health and the environment.

A key purpose of the partnership program is to recognize and encourage the formulation of products with environmentally preferable chemistry. For the purpose of this Agreement, these products include the following «Company\_Name» products: «*Trade\_Names*» (the “Qualifying Products”). The partnership will strive to promote and advance the environmental, technological, and efficiency benefits of these and future Qualifying Products.

This Agreement describes in general terms how «Company\_Name» formulates the Qualifying Products, their environmental and human health benefits, and how «Company\_Name» and EPA/DfE will work together to continually improve the health and environmental profile of the Qualifying Products and educate the consumer on these improvements and the DfE Program.

## **A.2 Statement of context and challenge**

Each year, commercial formulators use billions of pounds of chemical ingredients to make a wide variety of general purpose and specialized cleaning products. EPA is concerned about the effect certain chemicals might have on environmental quality and on the health and safety of workers and the public who use cleaning products or may come in contact with them.

EPA believes that cleaning product formulators can improve the environmental and health profile of their products by using ingredients that are inherently less toxic, less environmentally persistent, less bio-accumulative, and that degrade to substances with similar desirable characteristics when compared to ingredients in some conventional formulations. Additional benefits can be derived through environmentally oriented reformulation. Energy efficiency, resource conservation, and sound management practices offer important additional components for measurable and sustainable improvement in cleaning products and programs.

EPA believes that conventional cleaning formulations, especially those for industrial/institutional (“I/I”) use, may rely on certain ingredients whose environmental and human health profiles can be improved.

### **A.3 «Company\_Name»'s improved cleaning chemistries**

In conjunction with the DfE review process, «Company\_Name» has reformulated a set of cleaning products for I/I cleaning and maintenance that, according to «Company\_Name», meet EPA/DfE's recommendations and offer improved health and environmental characteristics. These Qualifying Products contain no (e.g. inorganic phosphates, hazardous solvents, or environmentally harmful surfactants). Instead, they use a proprietary blend of (e.g. surfactants, solvents, pH adjustors, and other ingredients), which exhibit more positive environmental and human health characteristics than conventional cleaning formulations.

In addition, these Qualifying Products only use surfactants that biodegrade readily to non-polluting substances, which helps relieve stress on the environment, especially threats to aquatic life. By not including environmentally harmful builders or extreme pH in these formulations, the environment-friendly profile and safety characteristics of these products is further enhanced. For example, an inorganic phosphate-free formula may promote a better balance of nutrients in the environment and healthier fresh water bodies. Safer sequestrants biodegrade readily to non-hazardous compounds and protect against environmental loading of metals. Mild pH formulas help protect workers, the environment, and building infrastructure. (For more information on the attributes and benefits of these products, see Section 7.)

Please Note: EPA/DfE relies solely on «Company\_Name», its integrity and good faith, for information on the composition, ingredients, and attributes of its Qualifying Products. EPA/DfE has not independently identified, i.e., via chemical analysis, the ingredients in the submitted formulas, nor evaluated any of «Company\_Name»'s non-ingredient claims. EPA/DfE expresses its judgment and professional opinion only as to the environmental and human health characteristics of the Qualifying Products, based on currently available information and scientific understanding. «Company\_Name»'s obligations under any federal, state, or local regulations governing the company or these products are in no way altered by its partnership with EPA/DfE.

### **A.4 «Company\_Name»'s commitment to formulate for the environment**

As part of the «Company\_Name»–EPA/DfE partnership, «Company\_Name» agrees to formulate and produce the Qualifying Products using agreed upon ingredients which have a more positive health and environmental profile than conventional formulations. To preserve the non-confidential nature of this document, a generic description of the ingredients in the Qualifying Products and their key characteristics appears below.

As documentation of the Qualifying Products at the time of this Agreement, and to set a baseline for future improvements and formula changes, «Company\_Name» has provided to EPA/DfE the specific and complete chemical composition for these products. This section's ingredient-by-ingredient descriptions are intended to serve as surrogates for the actual formulas. «Company\_Name» reserves the right, however, to change ingredients, provided that their health/environmental profile is equal to or better than those in the current formulations and that any substitution occurs in consultation and agreement with EPA/DfE (see Section 11).

If any change is made to the agreed formulation, «Company\_Name» agrees to notify EPA/DfE of the change and provide the new formulation. EPA/DfE agrees to notify «Company\_Name» of the need for ingredient profiling and will make recommendations for changes to the formulation as needed in order to remain a Qualifying Product.

The following is a non-confidential representation of the ingredients in the Qualifying Products, with their key characteristic (including green chemistry status or areas identified for future improvement), as evaluated by EPA/DfE:

<u>Ingredient</u>	<u>Key Evaluation Characteristic</u>
«Product_Name» e.g. Surfactant	<i>Readily biodegradable, low concerns for byproducts. Meets DfE Standard for Surfactants.</i>
Solvent	<i>Low health and environmental concerns.</i>
Builder	<i>Low health and environmental concerns.</i>
Colorant	<i>Could be improved (see sec. 5)</i>

Adoption and use of the formulations described in this Agreement does not preclude, nor should it impede, «Company\_Name» in its efforts to further improve the health and environmental profile of the Qualifying Products. In fact, a main element of the «Company\_Name»–EPA/DfE partnership is to provide «Company\_Name» the opportunity to work with EPA chemists, environmental scientists, and risk reduction staff in investigating materials to further improve the health and environmental profile of its Qualifying Products.

### **A.5 Continuous environmental improvement**

«Company\_Name» agrees to make continuous environmental improvement an important element of its research and development activities related to its Qualifying Products. In addition to the environmentally oriented formulations set forth in Section 4, «Company\_Name» agrees to investigate the feasibility of making additional improvements in the environmental and health profile of the Qualifying Products. Specifically, «Company\_Name» agrees to consider use of an alternative preservative and colorants, as recommended by EPA/DfE. «Company\_Name» agrees to undertake this formulation review during the period of the Agreement

«Company\_Name» may consult with EPA/DfE about other products and, following EPA/DfE review and assessment, may request that one or more new Qualifying Products be added to this Agreement. With EPA/DfE’s approval, this Agreement may be amended as set forth in Section 11 to include new Qualifying Products.

«Company\_Name» and EPA/DfE agree to discuss on a yearly basis the status of «Company\_Name»’s reformulation research and continuous improvement activities related to the Qualifying Products. «Company\_Name» may, at any time, request consultation and technical assistance from EPA in determining which chemical ingredients possess more positive health/environmental characteristics. «Company\_Name» may use informational materials from DfE’s website, for example, the *DfE Formulator Program: A Discriminating and Protective Approach to Cleaning Product Review and Recognition* ([http://www.epa.gov/dfe/pubs/formulat/formulator\\_review1.pdf](http://www.epa.gov/dfe/pubs/formulat/formulator_review1.pdf)), as general guides to environmentally desirable attributes for cleaning products.

### **A.6 Formulator right to know**

Cleaning product formulators have a right to know the properties and potential risks – to their employees, customers, and communities – of the chemicals they use. Manufacturers of raw materials for detergents and other cleaning products should ascertain and communicate the properties and potential toxicity of their products, especially those made and sold in large quantities.

As part of its partnership with EPA/DfE, «Company\_Name» agrees to ask its raw material suppliers for test data on the chemicals they sell and that «Company\_Name» uses in its products. If the raw material suppliers do not have test data on their chemicals, «Company\_Name» agrees to encourage them to perform basic physico-chemical and toxicity testing. Upon request by EPA/DfE, «Company\_Name» agrees to share with EPA/DfE any available chemistry or toxicity information on its ingredients that it obtains from its suppliers.

To help ensure that any new testing serves to enhance the profile and general understanding of a particular chemical, all prospective studies should be considered in the context of the guidance offered in EPA’s High Production Volume Challenge Program (<http://www.epa.gov/chemrtk/volchall.htm>) and the

Screening Information Data Set (SIDS) Program of the Organization for Economic Co-operation and Development (OECD) (to learn more, visit <http://www.epa.gov/oppt/chemtest/oecdids.htm> and the SIDS Test Guidelines at <http://www.epa.gov/chemrtk/sidsappb.htm>).

## **A.7 User benefits**

«Company\_Name»'s Qualifying Products offer users the following set of benefits:

### Environmental protection

The Qualifying Products are formulated with the environment and human health strongly in mind and use the following types of ingredients: biodegradable surfactants, with byproducts that are less toxic than the parent compound; solvents that are not hazardous air pollutants and pose no threat to the Earth's ozone layer; fragrances that have been screened for potential hazardous and persistent ingredients; and other components with a more positive environmental profile than in conventional cleaning products.

### Worker/consumer safety

The Qualifying Products are also formulated to help ensure a safer workplace. Users of these products benefit from ingredients that include no components that pose serious hazards. This benefit is amplified for janitors, maintenance staff, housekeepers, and others who must use cleaning chemicals in confined spaces on a daily basis. Importantly, a safer health profile especially benefits children, who spend a large part of their day in indoor environments and can be particularly sensitive to the chemicals in some cleaning products. Also, the mild pH, low volatility, and low potential to catch fire enhance the safety profile of these products.

### Resource conservation

The Qualifying Products also have certain attributes that may significantly reduce wear and tear on substrates, fabrics, and other surfaces with which the products come in contact, thereby extending their usable life.

### Customer education

«Company\_Name» acts as a product steward by providing its customers information on environmental and worker safety matters and trains its sales force on the benefits of formulations with improved environmental and health characteristics.

«Company\_Name» agrees to inform customers of Qualifying Products about the «Company\_Name»-EPA/DfE partnership, the meaning of the DfE logo, and the DfE Program's role in helping to protect human health and the environment. «Company\_Name» agrees to make available to its customers an EPA/DfE contact to who they may direct questions or comments on the partnership.

## **A.8 EPA recognition and support**

«Company\_Name» may use the Design for the Environment (DfE) logo, shown on Attachment A to this Agreement, on containers or container packaging of Qualifying Products or on advertising related solely to these products, provided that EPA/DfE has reviewed and approved the intended use of the logo. «Company\_Name» agrees to not use the logo or describe EPA/DfE's recognition on any general «Company\_Name» materials, non-Qualifying Products or associated literature, or advertising not related to the Qualifying Products. «Company\_Name» is not permitted to use the EPA official seal or logo at any time.

Use of the DfE logo must be accompanied by the following informational tagline, in close proximity to the logo: "Recognized for Safer Chemistry." The tagline should also include the EPA web address, [www.epa.gov/dfe](http://www.epa.gov/dfe), as shown on Attachment A. Additionally, «Company\_Name» agrees to include in advertising of the Qualifying Products an endorsement disclaimer and various educational information for the consumer regarding the DfE partnership. «Company\_Name» and EPA/DfE agree to work to find an appropriate place (e.g. company website) connected with advertising for the Qualifying Products to include the following language along with educational information:

EPA/DfE recognition does not constitute endorsement of this product. The Design for the Environment logo signifies that the formula for this product, as «Company\_Name» has represented it to the EPA, contains ingredients with more positive health and environmental characteristics than conventional cleaners. EPA/DfE relies solely on «Company\_Name», its integrity and good faith, for information on the composition, ingredients, and attributes of this product. EPA/DfE has not independently identified, i.e., via chemical analysis, the ingredients in the product formula, nor evaluated any of «Company\_Name»'s non-ingredient claims. EPA/DfE expresses its judgment and professional opinion only as to the environmental and human health characteristics of the product, based on currently available information and scientific understanding.

The Parties acknowledge that under 5 C.F.R. §2635.702(c), EPA may not endorse the purchase or sale of commercial products and services provided by «Company\_Name». The Parties agree to ensure that promotional materials describing or resulting from this Agreement do not contain statements implying that EPA/DfE endorses the purchase or sale of commercial products. This includes statements to the public in news releases, publications, on web sites or any other media.

«Company\_Name» agrees to make available to EPA/DfE for review and approval any materials, including press releases, promotional materials and advertisements that «Company\_Name» develops in connection with the partnership, and especially information that describes or characterizes the DfE Formulator Program or EPA/DfE's position on issues related to the cleaning product sector.

«Company\_Name» agrees to discontinue use of the DfE logo or any other form of EPA/DfE recognition, within 30 days, under the following circumstances: If «Company\_Name» stops formulating the Qualifying Products using the agreed upon ingredients; upon the termination of this Agreement; or, if so notified by EPA in writing.

#### **A.9 Limitations**

All commitments made by EPA in this Agreement are subject to the availability of appropriated funds and budget priorities. Nothing in this Agreement, in and of itself, obligates EPA to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or incur other financial obligations. This Agreement does not exempt «Company\_Name» or any other organization from EPA policies for competition for financial assistance agreements or procurement contracts. «Company\_Name» agrees not to submit a claim for compensation for services rendered to EPA in connection with any activities it carries out in furtherance of this Agreement. Any endeavor involving reimbursement or contribution of funds between the parties to this Agreement will be handled in accordance with applicable laws, regulations, and procedures, and will be subject to separate agreements.

This Agreement does not create any right or benefit, substantive or procedural, enforceable by law or equity against «Company\_Name» or EPA/DfE, their officers or employees, or any other person. This Agreement does not direct or apply to any persons outside «Company\_Name» or EPA.

#### **A.10 Measures of success**

On an annual basis, «Company\_Name» agrees to provide to EPA/DfE its best estimate of the production volume of the Qualifying Products (if possible, both in aggregate pounds or gallons and broken out by ingredient class).

At EPA's request, «Company\_Name» agrees to make available to EPA/DfE, on a confidential basis, formulation bills of materials that confirm that the Qualifying Products contain the ingredients agreed to in this Agreement or have been modified in accordance with its terms.

«Company\_Name» agrees to make reasonable attempts to monitor the cleaning product market and agrees to inform EPA/DfE about the Qualifying Products' influence on the market, including growth in sales and number of new customers, as well as the perceived value in DfE recognition.

«Company\_Name» agrees to report on customer acceptance of and satisfaction with these products when this information is available.

As discussed in Section 5, «Company\_Name» agrees to furnish periodic updates to EPA on the continuous improvement component of its research and development activities and on its ongoing efforts to improve the health/environmental profile of the Qualifying Products. As a condition of partnership, «Company\_Name» has demonstrated to EPA/DfE the performance of its Qualifying Products according to the guidelines provided by DfE ([http://www.epa.gov/dfe/pubs/formulat/formulator\\_review1.pdf](http://www.epa.gov/dfe/pubs/formulat/formulator_review1.pdf)). «Company\_Name» agrees to also share with EPA/DfE the results of any additional performance testing or verification when that information becomes available.

#### **A.11 Confidentiality**

In matters relating to this DfE partnership and Agreement, EPA agrees to handle all information claimed by «Company\_Name» as confidential business information in accordance with EPA confidentiality procedures (see 40 CFR part 2, subpart B). EPA and «Company\_Name» agree that information supplied to EPA by «Company\_Name» on the formulas of any «Company\_Name» products is covered by the foregoing sentence.

EPA/DfE agrees to only use the information provided by «Company\_Name» for purposes related to the «Company\_Name»-EPA/DfE partnership and disclose the information only to EPA employees and EPA contractors cleared for confidential information with a specific need to know.

#### **A.12 Amendments to the agreement**

As discussed in the Continuous Environmental Improvement section, «Company\_Name» may request that EPA/DfE add new Qualifying Products to this Agreement when reformulated. If EPA agrees to the addition, «Company\_Name» may amend the Agreement by submitting a letter that addresses the essential elements from Sections 3, 4, 5 and 7 of the current Agreement. «Company\_Name» and EPA/DfE agree to collaborate in developing the specific language for the amendment, which must be signed by an appropriate official for both parties. All other provisions of the Agreement shall be incorporated by reference.

#### **A.13 Termination or renewal of the agreement**

Either party may, upon written notification, terminate this Agreement. In any event, the terms and provisions in the Agreement will sunset three years from the date of signature, unless the parties renegotiate and renew a partnership agreement prior to the expiration date.

We agree to these terms and provisions:

For «Company»

For the U.S. Environmental Protection Agency

\_\_\_\_\_  
Signatory  
Title

\_\_\_\_\_  
Robert E. Lee II  
Director, Economics, Exposure, and  
Technology Division

Date \_\_\_\_\_

Date \_\_\_\_\_

## Annex B

### Elements of Desk Audits and On-Site Audits

#### B.1 Desk audits

DfE partners will submit to the third-party verifier the following items, which are drawn from elements of the partnership agreement and DfE Criteria:

- List of all ingredients for each recognized product;
- Statement that the ingredients have not changed since they were provided to DfE and referenced in the Partnership Agreement or in a DfE-approved amendment to the agreement;
- Example of all product labels showing use of the DfE logo or mention of the DfE recognition;
- Example of any product or company literature that use the DfE logo or mention the DfE recognition;
- Any private or licensed product labels and literature that bear the DfE logo;
- Summary of continuous improvement efforts as required by the Partnership Agreement; and
- Documentation of education offered to end user.

#### B.2 On-site audits

The third-party verifier will seek the following information, based on the terms of the partnership agreement and DfE Criteria, at subject facilities:

- Verification that qualifying products are being manufactured using accepted ingredients and suppliers and at proper use levels. Authorized formula will be compared to manufactured product through review of production records, batch tickets, bills of lading, certificates of analysis and any other documentation necessary;
- Verification that any private label and licensed products packaged on-site are identical in formulation to the original recognized product (i.e., no dilution, concentration, no added dyes or fragrances);
- Review customer complaint file;
- Verification of end-user education;
- Review documentation of training offered to end users;
- Confirm labeling requirements including safety matters, DfE logo requirements (use of the Mark) and verify no logo or mention of the DfE program is found on non-qualifying products;
- Confirmation of appropriate product packaging;
- Review of Good Manufacturing Practices (i.e., manufacturing and packaging operations conducted within the scope of an effective quality system (e.g. ISO 9001) and in accordance with defined quality procedures appropriate for the manufacture of cleaning products). For this component the audit may include:
  - Production walk-through;
  - Review of practices for minimizing contamination of the Product during measuring, blending, packaging, and transport;
  - Verification that bulk product containers, transfer equipment, and holding vessels for Certified Product are maintained in good repair;
  - Review of records for cleaning, maintenance, and calibration of manufacturing equipment; and
  - Review of supplier qualification records (including test data) for raw materials, packaging, and ingredients.