

EPA's Safer Choice Criteria for Specialized Industrial Products

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Specialized Industrial Products (SIPs) are a distinct subgroup of products that meet tailored criteria under the Safer Choice Program. Safer Choice is using the term “specialized” for this subset of I/I products to distinguish them based on performance requirements from other, more common I/I products, like cleaners and detergents, and to indicate that they require certain ingredients with special, high-performance functionalities. Nevertheless, to earn the Safer Choice label, a candidate product and its ingredients must meet the general SIP criteria, in section II, as well as the subclass-specific requirements, in section III.

I. Context

The Safer Choice approach to product review and recognition focuses on identifying the safest possible chemical ingredients within the functional classes that are necessary for a product to perform well. Evaluating the human and environmental health characteristics of ingredients in their functional-class context allows Safer Choice to: Compare the toxicological characteristics of chemistries that serve a similar purpose; identify the characteristics that help distinguish the safer members of the class; determine which members of the class meet Safer Choice safer chemical criteria, as well as drive the class toward innovative new formulations. Safer Choice has developed ingredient criteria based on these principles to define safer chemicals for use in cleaning formulations in general and for the following component-specific classes: surfactants, solvents, chelating agents and fragrances (see [Safer Choice Master Criteria and ingredient class criteria](#)).

Recognizing the potential to encourage and ensure safer formulations in specialized and technical applications, like floor finishes and strippers, the Safer Choice Program has included recognition for safer specialized industrial and institutional products. To accommodate the greater functional demands placed on the chemistry in specialized products, Safer Choice will allow limited exceptions to its standard criteria (designed for chemicals used in basic cleaning and similar applications), as described below.

To be specific, high-performance ingredients for industrial products that do not meet the Master Criteria must: Serve a critical and specialized functional need in the formulation; be present at the lowest level that achieves its function, but for any product category, not to exceed, in aggregate, 10% of finished product ingredients; and be the subject of active continuous improvement efforts and a search for innovative alternatives. These ingredients may become the focus of a Safer Choice Safer Chemistry Challenges and be added to a new “Challenge” page on our website (see section IV, below).

Manufacturers must also design and market qualifying products for use only in industrial and institutional settings and monitor them for potential adverse health effects and report any such occurrences to Safer Choice. Further, Safer Choice will ensure that the ingredients allowed will be from the safest in their functional component class, and, at a minimum, no ingredient in a specialized industrial product will be a listed carcinogen, mutagen or reproductive or developmental toxicant, or a persistent, bioaccumulative and toxic chemical.

As product types appropriate for application of these criteria come to Safer Choice's attention, they will be posted in section III, along with the specific product and component-class criteria under which they qualify for the Safer Choice label. Please note that specialized product ingredients will be included in EPA's Safer Chemical Ingredients List (at www2.epa.gov/saferchoice/safer-ingredients), with restricted high-performance ingredients designated by a yellow triangle.

II. General Criteria

Given the significant potential for safer formulation, Safer Choice will recognize certain products designed for specialized industrial and institutional applications. To qualify for recognition, candidate products must comply with the provisions in the Safer Choice Standard, with the following limited exceptions and conditions:

- 1) All ingredients must comply with the general component-specific requirements in section 5 of the Safer Choice Standard, except for certain high-performance ingredients;
- 2) High-performance ingredients that do not meet the Safer Choice Master Criteria must:
 - a. Serve a critical and specialized functional need in the formulation;
 - b. Be selected from among the safest in their class, as measured against the Safer Choice Master Criteria;
 - c. Exclude listed carcinogens, mutagens and reproductive or developmental toxicants, and persistent, toxic and bioaccumulative substances, as per the Master Criteria;
 - d. Be limited in the finished product to the maximum extent possible, as appropriate to the product class, but not to exceed a total of 10% of finished product ingredients (unless noted otherwise);
 - e. Be the subject of active continuous improvement efforts and a search for innovative alternatives, as verified during annual audits; and
 - f. Be added to EPA's Safer Chemical Ingredients List as a yellow-triangle chemical and highlighted as a target for improvement/safer chemistry challenge (see section IV).

- 3) In addition, manufacturers must design and market qualifying products for use only in industrial and institutional settings; and
- 4) Must monitor qualifying products for potential adverse health effects and report any occurrences to EPA's Safer Choice program.

As product categories qualify under these provisions, EPA will specify on its web site the ingredient limits and other conditions that are required for the sector. Companies may use the Safer Choice label on qualifying products, but must modify the tagline to read: "Recognized as a Safer Industrial Product." Qualifying products will appear on Safer Choice's products web page, now with a SIP notation. As with all Safer Choice products, annual audits will verify SIP compliance with the Safer Choice Standard and ingredient criteria.

III. Qualifying SIP Classes and Components

A. Floor finishes and strippers. Floor finishes and strippers that meet the Safer Choice Standard and the safer ingredient criteria—with special requirements for leveling agents and plasticizers in floor finishes, and solubilizers in floor strippers—will be eligible for recognition by Safer Choice and to use the Safer Choice label with a modified tagline, "Recognized as a Safer Industrial Product."

To qualify, any leveling agents, plasticizers, or solubilizers in a candidate product must be among the safest functional alternatives and, at a minimum, not be listed as a carcinogen, mutagen, or reproductive or developmental toxicant, as per the Safer Choice Master Criteria (at www2.epa.gov/saferchoice/standard#tab-2, specifically, tables 2, 3, and 6b; or per authoritative flagging lists for reproductive and developmental toxicity). In addition, the formulation must meet the following parameters:

- a) Fluorosurfactant leveling agents in finishes must have carbon-chain lengths less than eight molecules and must not degrade to perfluorooctanoic acid (PFOA) or perfluorooctane sulfonate (PFOS);
- b) Plasticizers in finishes must have a human and environmental health profile at least on a par with tributoxyethyl phosphate and not exceed 3.0 percent (weight-by-weight) in the formulation;
- c) Small amine solubilizers, only allowed in floor strippers, must have a human and environmental health profile at least on a par with monoethanolamine and not exceed 8.0 percent (weight-by-weight) in the formulation;
- d) Any pH adjusters must have a human and environmental health profile at least on a par with ammonium hydroxide (ammonium carbonate or ammonium bicarbonate) and not exceed 1.0 percent (weight-by-weight) in the formulation; and

- e) The total percentage of fluorosurfactants, plasticizers, and yellow-triangle solvents/coalescents (for finishes), and solubilizers and yellow-triangle solvents (for strippers) must not exceed 10% (weight-by-weight).

(*Small amines: Water-soluble compounds having a basic nitrogen functional group. The amine nitrogen atom may be mono- (primary amines), di- (secondary amines) or tri-substituted (tertiary amines). The organic aliphatic substituent(s) may include ether and/or hydroxyl functional groups. Small amines serve as solubilizing agents and pH adjustors. Typical small amines will have MW <200 and no more than 9 carbon atoms.)

For a list of Safer Choice floor finishes and strippers, see the Safer Choice products web page at www2.epa.gov/saferchoice/products.

B. Field paints [1/9/14]. Field paints that meet the Safer Choice Standard and the safer ingredient criteria—with special requirements for solubilizers/pH adjusters and certain non-readily-biodegradable components—will be eligible for recognition by Safer Choice and to use the Safer Choice label with a modified tagline, “Recognized as a Safer Industrial Product.”

To qualify, any pH adjusters in a candidate product must be among the safest functional alternatives and, at a minimum, not be listed as a carcinogen, mutagen, or reproductive or developmental toxicant, as per the Safer Choice Master Criteria (at www2.epa.gov/saferchoice/standard#tab-2, specifically, tables 2, 3, and 6b; or per authoritative flagging lists for reproductive and developmental toxicity). In addition, the formulation must meet the following parameters:

- a) Any pH adjusters must have a human and environmental health profile at least on a par with ammonium hydroxide and not exceed 1.0 percent (weight-by-weight) in the formulation; and
- b) The total percentage of non-readily-biodegradable ingredients (excluding inorganics) must not exceed 10.0 percent (weight-by-weight) in the formulation.

C. Di-electric fluids [2/3/14]. Di-electric fluids that meet the Safer Choice Standard and the safer ingredient criteria—with special requirements for antioxidant preservatives—will be eligible for recognition by Safer Choice and to use the Safer Choice label with a modified tagline, “Recognized as a Safer Industrial Product.”

To qualify, any antioxidant preservatives in a candidate product must be among the safest functional alternatives and, at a minimum, not be listed as a carcinogen, mutagen, or reproductive or developmental toxicant, as per the Safer Choice Master Criteria (at www2.epa.gov/saferchoice/standard#tab-2, specifically, tables 2, 3, and

6b; or per authoritative flagging lists for reproductive and developmental toxicity). In addition, the formulation must meet the following parameters:

- a) Any antioxidant preservatives must have a human and environmental health profile at least on a par with butylated reaction products of p-cresol and dicyclopentadiene (CAS # 68610-51-5) and not exceed 1.0 percent (weight-by-weight) in the formulation.

D. Grease and Paint Removers [2/11/15] and Stainless Steel Cleaners [9/3/15]. Grease and paint removers and stainless steel cleaners that meet the Safer Choice Standard and the safer ingredient criteria—with special requirements for methyl soyate solvents—will be eligible for recognition by Safer Choice and to use the Safer Choice label with a modified tagline, “Recognized as a Safer Industrial Product.”

To qualify, any solvent in a candidate product must be among the safest functional alternatives and, at a minimum, not be listed as a carcinogen, mutagen, or reproductive or developmental toxicant, as per the Safer Choice Master Criteria (at www2.epa.gov/saferchoice/standard#tab-2, specifically, tables 2, 3, and 6b; or per authoritative flagging lists for reproductive and developmental toxicity). In addition, the formulation must meet the following parameters:

- a) Any solvent must have a human and environmental health profile at least on a par with methyl soyate (CAS # 67784-80-9); on this basis, a 10% maximum does not apply; and
- b) Labeled formulations must carry a notice stating: “When used outdoors, avoid environmental releases,” or similar language approved by Safer Choice.

IV. Safer Chemistry Challenges

Through its work in the Safer Choice Program and especially in reviewing specialized industrial and institutional products, Safer Choice has become aware of components in products that do not meet its standard criteria for safer ingredients. To complement its recognition program for SIP formulations, Safer Choice is announcing a safer chemistry challenge for ingredients in recognized products that have not met its safer chemical criteria.

The following chart presents a potential set of elements for a possible Safer Chemistry Challenge based on the qualifying SIP classes and components: floor finishes and strippers, and field paints. It indicates the product type, components and their functional attributes, and current alternatives for which Safer Choice, its product manufacturer partners, health and environmental advocates, and others are seeking safer alternatives. (Safer Choice would welcome your comments on the Safer Chemistry Challenge

concept and any aspects of these hypothetical floor care and field paint challenges and their elements.)

Product Type	Component	Functional Attributes	Current Alternatives
Floor Finish	Leveling agent	Ensures that coating has an even and smooth finish	Shorter chain fluorinated surfactants, \leq 6 carbon atoms
	Plasticizer	Causes components to form a surface coating that is durable, slip resistant, and has other properties	Tributoxyethyl phosphate (TBEP)
	pH adjuster	Modifies the product pH	Ammonium hydroxide, ammonium carbonate, ammonium bicarbonate
Floor Stripper	Solubilizer	Serves multiple functions, including pH adjustment, keeping ingredients in solution, and solvency to break down the finish	Small amines
Field Paint	pH adjuster	Modifies the product pH	Ammonium hydroxide
Di-electric Fluid	Preservative-antioxidant	Prevents spoilage of bio-based di-electric fluid over long periods of use.	Butylated reaction products of p-cresol and dicyclopentadiene; or butylated hydroxytoluene
Grease and Paint Remover and Stainless Steel Cleaner	Solvent	Removes difficult-to-dissolve materials from a variety of substrates.	Solvents that raise human health and environmental concerns, like methylene chloride, trichloroethane, and n-methylpyrrolidone; methyl soyate, which has a safer human health profile, raises concerns for aquatic toxicity.