

User Guide: Campaign for Safe Cosmetics' (CSC) Red List of Chemicals of Concern in Cosmetics (July 2022 Update)

This guide is designed to help you navigate and understand the CSC's Red List of Chemicals of Concern in Cosmetics (Red List). For more information on the Red List, [click here](#).

Red List Tiers

At the bottom of the Red List spreadsheet, you will notice several tabs indicating three tiers. The distinction between each tier is as follows:

- **Tier 1: Well-established chemicals of concern that should not be used in personal care or beauty products or as fragrance ingredients**
 - Chemicals that are included on an authoritative list (IARC, NTP, Prop 65 etc.) as being harmful to human health are listed as Tier 1 chemicals, and the relevant authoritative list is marked.
 - Chemicals that are not on authoritative lists but for which we found scientific evidence from multiple studies linking them to adverse human health effects of particular concern to Black women are listed as Tier 1 chemicals, and the citations are marked.
 - The entire class of Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) and Ortho-phthalates, as well as all Formaldehyde-Releasing Preservatives (FRPs) are also listed as Tier 1 chemicals, each of which can be found in their own distinct Tier 1 appendices. See below for a discussion on why we took a class-based approach to including these chemicals of concern.
- **Tier 2: Emerging chemicals of concern that should be avoided in products when possible**
 - Chemicals that only have a single study indicating a human health concern are listed as Tier 2 emerging chemicals of concern.
 - Chemicals that have been designated as ecotoxicants by authoritative bodies are also included on Tier 2.
- **Tier 3: Asthmagens, allergens, and irritants whose presence in products should be disclosed**
 - Chemicals that have been identified as asthmagens, allergens, or irritants by authoritative bodies should be disclosed if they are present in personal care and beauty products so that consumers with sensitivities to these chemicals can avoid them. If the chemical is also listed on Tier 2, they should be avoided in products when possible.

Reading the Red List

The first 3 columns of the Red List identify individual chemicals. Column A provides the CAS (Chemical Abstracts Service (CAS)) number, column B provides the chemical name, and column C provides synonyms, if applicable. Use columns D and E to see if the chemical is present in personal care products (PCP) and/or fragrances (FR). Columns F – AF show which health/ecological effect(s) are associated with the chemical, and the relevant authoritative lists or scientific studies linking the chemical and the outcome are also identified here. These effects are color coded as follows:

- **Red:** Indicates negative human health effects cited by scientific authoritative bodies.

- Yellow: Indicates human health outcomes of greater concern to Black women. This list of adverse health effects was generated with input from the Non-Toxic Black Beauty Project Advisory Committee.
- Orange: Indicates asthmagens, allergens, irritants, or effects related to ecotoxicity.

Authoritative Lists

Authoritative lists used to identify the Tier 1 chemicals of concern included in our Red List are as follows:

Carcinogens

- [Agents Classified by the International Agency for Research on Cancer \(IARC\) Monographs](#)
 - IARC Group 1: Known Human Carcinogen
 - IARC Group 2A: Probably Human Carcinogen
 - IARC Group 2B: Possible Human Carcinogen
- [National Toxicology Program Report on Carcinogens](#)
 - NTP Known: Known Human Carcinogen
 - NTP RA: Reasonably Anticipated to Be a Human Carcinogen
- [EU Globally Harmonized System](#)
 - GHS H350: May Cause Cancer
 - GHS H351: Suspected of Causing Cancer
- [California Proposition 65 Listed Chemicals](#)
 - Prop 65 Chemicals Known to the State of California to be Linked to Cancer
- [US Environmental Protection Agency \(EPA\) Integrated Risk Information System \(IRIS\)](#)
- [ChemSec Substitute It Now! \(SIN\) List](#)

Mammary Gland Carcinogens

- [Silent Spring Institute \(SSI\) List of Chemicals Linked to Mammary Gland Tumors](#)

Endocrine-Disrupting Compounds

- [EU Strategy for Endocrine Disruptors](#)
 - EU ED Category 1: Substances for which endocrine activity has been documented in at least one study of a living organism. These substances are given the highest priority for further studies.
 - EU ED Category 2: Substances without sufficient evidence of endocrine activity, but with evidence of biological activity relating to endocrine disruption.
- [EU Candidate List of Substances of Very High Concern \(SVHC\) for Authorization](#)
- [ChemSec Substitute It Now! \(SIN\) List](#)
- [International Panel on Chemical Pollution \(IPCP\)](#)

Reproductive/Developmental Toxicants

- [EU Globally Harmonized System](#)
 - GHS H361: Suspected of Damaging Fertility or the Fetus
 - GHS H361d: Suspected of Damaging the Fetus

- GHS H361f: Suspected of Damaging Fertility
- [California Proposition 65 Listed Chemicals](#)
 - Prop 65: Developmental
 - Prop 65-f: Developmental – female
 - Prop 65-m: Developmental – male
 - Prop 65-f,m: Developmental – male, female
- [Nominated for Study NIH](#)
 - National Toxicology Program (NTP)-R: Reproductive Toxicity
 - NTP-D: Developmental Toxicity
- [EU Candidate List of Substances of Very High Concern \(SVHC\) for Authorization](#)

Neurotoxic Chemicals

- [EU Globally Harmonized System](#)
 - GHS H336: May Cause Drowsiness or Dizziness

Respiratory/Asthmagens

- [EU Globally Harmonized System](#)
 - GHS H334: May Cause Allergy or Asthma Symptoms or Breathing Difficulties if Inhaled
- [Association of Occupational and Environmental Clinics \(AOEC\)](#)
 - AOEC R – Suspected Asthmagen
 - AOEC Rs – Asthmagen, Sensitizer
 - AOEC Rr – RADS: Reactive Airway Dysfunction Syndrome
 - AOEC G – Generally Accepted Asthmagen

Skin Irritation

- [EU Globally Harmonized System](#)
 - GHS H315: Causes Skin Irritation
 - GHS H314: Causes Severe Skin Burns and Eye Damage
- [EU Fragrance Allergen: Established Contact Allergen in Humans](#)

Eye Irritation

- [EU Globally Harmonized System](#)
 - GHS H318: Causes Serious Eye Damage
 - GHS H319: Causes Serious Eye Irritation
- [New Zealand Globally Harmonized System](#)
 - GHS 6.4A: Causes Eye Irritation (Category 2)

Chronic Aquatic Toxicity

- [EU Globally Harmonized System](#)
 - GHS H410: Very Toxic to Aquatic Life with Long-Lasting Effects
 - GHS H411: Toxic to Aquatic Life with Long-Lasting Effects

- GHS H412: Harmful to Aquatic Life with Long-Lasting Effects
- GHS H413: May Cause Long Lasting Harmful Effects to Aquatic Life
- [New Zealand Globally Harmonized System](#)
 - GHS 9.1A: Hazardous to the Aquatic Environment Acute (Category 1); Hazardous to the Aquatic Environment Chronic (Category 1)
 - GHS 9.1C: Hazardous to the Aquatic Environment Chronic (Category 3)
 - GHS 9.1D: Hazardous to the Aquatic Environment Chronic (Category 4)
- [Canadian Environmental Protection Act \(CEPA\) Environmental Registry – Domestic Substances List \(DSL\)](#)

Persistent, Bioaccumulative & Toxic (PBT)

- [OSPAR PBT: Chemicals for Priority Action](#)
- [EU Candidate List of Substances of Very High Concern \(SVHC\) for Authorization](#)

Fragrance Ingredients

- [International Fragrance Association list](#). Ingredients linked to adverse health effects that appear on IFRA's transparency list, a list of the ingredients used to create fragrance mixtures used in personal care products, and fine fragrance worldwide.

DTSC List

[California Department of Toxic Substance Control Candidate Chemicals List](#). This list is made up of chemicals identified in the Safer Consumer Products Regulations (California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 55, Section 69502.2) and was drawn from 23 authoritative lists. The authoritative lists fall into two categories: lists based on hazard traits (15 lists), and lists based on potential exposure concerns (8 lists).

Tier 1 Special Circumstances and Classes of Chemicals of Concern to Avoid in Cosmetics

We are recommending against the use of certain classes of chemicals of concern given the similar chemical structure and predicted biological activity. The class-based approach helps to minimize regrettable substitutions, where one toxic chemical is replaced with a similarly or more toxic alternative. These chemicals include:

- **Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS, or PFAS Chemicals)**
 - PFAS are a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom. The Agency for Toxic Substances and Disease Registry (ATSDR) states PFAS exposures may lead to increased cholesterol levels, decreased vaccine response in children, changes in liver enzymes, increased risk of high blood pressure or pre-eclampsia in pregnant women, small decreases in infant birth weights, and an increased risk of kidney or testicular cancer.¹ Several states have banned or restricted the use of PFAS in cosmetics, including Maine, California, and Maryland, and efforts are

¹ <https://www.atsdr.cdc.gov/pfas/health-effects/index.html>

currently underway to ban PFAS from cosmetics at the national level.² The entire class of PFAS chemicals should be avoided for use in cosmetics. See the “Tier 1_PFAS” tab for a list of the most prevalent PFAS chemicals currently being used in cosmetics.

- Formaldehyde Releasing Preservatives (FRPs)
 - FRPs include any chemical that slowly releases formaldehyde to preserve a personal care or beauty product. Formaldehyde is a Tier 1 chemical. See the “Tier 1_FRPs” tab for a list of FRPs that should be avoided in cosmetics.
- Ortho-phthalates
 - Ortho-phthalate is a class of chemicals that are esters of ortho-phthalic acid. This chemical class is known to have hormone-disrupting properties, and links have been found between ortho-phthalates and interference with fetal development, abnormalities in the male reproductive system, damage to DNA in sperm, reduced testosterone levels and altered thyroid hormone production, neurodevelopmental effects in infants or children, liver and kidney toxicity, cancer, and asthma.³ See the “Tier 1_OPhthalates” tab for a list of ortho-phthalates that should be avoided in cosmetics.
- P-Phenylenediamine (CAS no. 106-50-3)
 - The EU banned P-Phenylenediamine from cosmetics in Annex II of the EU Cosmetics regulation.
- Methyl Methacrylate (MMA) (CAS no. 80-62-6)
 - As of 2007, 30 states have registered or banned the use of liquid methyl methacrylate monomer. Methyl methacrylate monomer is an ingredient used in some artificial nail products which bond strongly with the nail. In the early 1970s, the FDA removed nail products containing 100 percent MMA from the market, and in 2015, California’s Board of Barbering and Cosmetology (BBC) prohibited the use of MMA-containing nail products in licensed hair and nail salons and cosmetology schools through regulation. Despite these regulatory actions, MMA continues to be detected in indoor air in nail salons. MMA exposure has been linked to adverse health effects including dermal toxicity and respiratory tract effects.⁴ NIOSH lists MMA as IDLH (immediately dangerous to life or health).
- Phenol (CAS no. 108-95-2)
 - Phenol is prohibited in cosmetics in Europe and in Canada.
- Cyclopentasiloxane (CAS no. 541-02-6)
 - According to the EU Scientific Committee on Consumer Safety: considered unsafe for use in hair styling aerosols and sun care spray products. In addition, this ingredient may contain traces of Cyclotetrasiloxane (D4), which is classified in the EU as toxic to reproduction, and a hormone disruptor.⁵
- Aloe Barbadensis Leaf Extract (Aloe Vera) (CAS no. 85507-69-3)
 - Aloe Vera leaf extract is listed as a Tier 2 chemical despite having health effects noted by an authoritative list. Aloe Vera leaf extract is a possible human carcinogen according to

² <https://www.ehn.org/pfas-in-makeup-2656887006.html>

³ <https://saferchemicals.org/get-the-facts/toxic-chemicals/phthalates/#section3>

⁴ <https://dtsc.ca.gov/scp/nail-products-containing-mma/>

⁵ https://ec.europa.eu/health/system/files/2021-08/sccs_o_174_0.pdf

IARC.⁶ This refers to the whole leaf extract, which includes the aloe vera gel, leaf pulp (the layer just inside the green rind), and the latex which runs through tubes in the leaf pulp. The studies identifying this chemical as a possible human carcinogen only assess oral ingestion, with no studies looking at skin absorption. Therefore, Aloe Vera should be avoided in products that could be ingested (lip balms, lip glosses, lip scrubs, etc.), but can otherwise be used.

- Petrolatum (CAS no. 8009-03-8)
 - Petrolatum is listed as a Tier 2 chemical despite having a GHS H361d hazard classification. Petrolatum is considered safe when it is refined, and only presents a hazard if contaminated with [polycyclic aromatic hydrocarbons \(PAHs\)](#).

⁶ <https://monographs.iarc.fr/wp-content/uploads/2018/06/mono108-01.pdf>