



Natural Products Association Standard and Certification for Natural Home Care Products

In order to protect the consumer and best equip the consumer and to maximize the consumer's well-being, we have developed Natural Products Association Standard and Certification for Home Care Products. It is a set of guidelines that will dictate whether a product can be deemed truly "natural." It encompasses select home care products including but not limited to laundry, dish, concentrated and ready-to-use hard surface cleaners, and wipes.

The following is the standard as of April 1, 2017:

- All products that are labeled or branded "Natural" must:
 - Be made with at least 95% all natural ingredients (not counting water) with the remainder of ingredients limited to "allowed synthetics" (see Appendix II)
- What is "Natural"?
 - Ingredients that come or are made from a renewable resource found in nature (Flora, Fauna, Mineral), with absolutely no petroleum compounds. These natural ingredients are made with the following illustrative list of allowed processes:

Amination of Alcohols and Fatty Acids

Reagents: Ammonia, Alkyl Amine

Catalysts: Nickel, Palladium, various known other reducing agents

Agricultural Inputs: Alcohols, Acids, Aldehydes, Ketones

Description: The process of introducing an amine into an alcohol or fatty acid.

Distillation of Essential Oils

Reagents: Water (high-pressure steam)



Catalysts: None

Agricultural Inputs: plant material (flowers, herbs, spices, etc.)

Description: The physical process to acquire essential oils from plant material.

Esterification OR Transesterification to Produce Esters

Reagents: None

Catalysts: Sulfuric/Phosphoric Acid; KCO_3 , $NaCO_3$, $NaOH$, or KOH

Agricultural Inputs: Acid and Alcohol, e.g. Fatty Alcohol, Glycerin, Ethanol, Acetic Acid

Description: The process of forming an ester bond between an acid and an alcohol, can be catalyzed by either an alkali or acid.

Etherification of Glycerin making PolyGlycerols

Reagents: None

Catalysts: Alkali ($NaOH$ or KOH)

Agricultural Inputs: Glycerin (product of fat-splitting)

Description: The process of forming ether bonds between two compounds of natural glycerin (see fat-splitting) to form polyglycerols by heating with an alkali. Polyglycerol products are indicated with a number to represent the number of glycerin molecules linked together.

Extraction

Reagents: CO_2

Catalysts: None

Agricultural Inputs: Plant material (flowers, herbs, spices, etc.)

Description: The physical process to acquire plant extracts from original plant material.

Fat-Splitting of Oils to Produce Glycerin and Fatty Acids

Reagents: Water (high-pressure steam)

Catalysts: Metal/Metal Compound Catalysts (Zinc Oxide, Nickel, Palladium, Platinum)

Agricultural Inputs: Triglyceride fats and oils; Carbohydrates, Sugars

Description: The process of splitting natural fats and oils into glycerin and fatty acids, a kind of hydrolysis.

Fermentation

Reagents: None

Catalysts: Enzymes

Agricultural Inputs: Carbohydrates, Sugars, Bacteria, Yeasts, Fungi

Description: The process of converting carbohydrates into alcohol and carbon dioxide or organic acids.

Glucosidation of Fatty Alcohol and Glucose

Reagents: None

Catalysts: Toluene Sulfonic Acid

Agricultural Inputs: Glucose and Fatty Alcohol

Description: The process of attaching glucose to an alcohol, a type of etherification (e.g. Coco Glucoside).

Hydrogenation of Oils

Reagents: Hydrogen

Catalysts: Nickel, Platinum or Palladium

Agricultural Inputs: Triglyceride fat/oil usually

Description: The process by which unsaturated bonds are reduced by the addition of hydrogen with a catalyst, specifically converting unsaturated fatty acids to saturated ones or waxes to oils.

Hydrogenolysis of Methyl Esters of an Oil to Make Fatty Alcohols

Reagents: Hydrogen from Natural Gas

Catalysts: Methanol; Nickel, Platinum, Palladium

Agricultural Inputs: Methyl or Ethyl Ester of Triglyceride fat/oil (fat/oil original ag input)

Description: The process by which hydrogen is utilized to break chemical bonds converting a fatty acid ester into the fatty alcohol and methyl or ethyl alcohol (whichever is used for the ester). This process can also be utilized directly on the fatty acid without conversion to the ester first.

Hydrolysis of Complex Proteins into Simple Amino Acids

Reagents: Water

Catalysts: Enzymes or Alkali (KOH or NaOH)

Agricultural Inputs: Proteins, Carbohydrates, Sugars

Description: The process of breaking down complex proteins into water-soluble amino acids or peptides (if partially hydrolyzed).

Oxidation with Mild Agents

Reagents: Dilute H₂O₂, O₂, Silver and Copper salts

Catalysts: Silver, Copper

Agricultural Inputs: Plant-based Alcohols, Aldehydes

Description: The process by which alcohols and aldehydes are converted to acids by oxidation.

Protein Fragment Acylation to make e.g. Cocoyl Glutamate

Reagents: KOH or NaOH

Catalysts: Phosphorous Trichloride or Thionyl Chloride

Agricultural Inputs: Fatty Acid and Protein Fragment



Description: The process of attaching a fatty acid to a nitrogen-containing compound. The fatty acid is converted to a fatty acid chloride before attachment to the nitrogen of a protein fragment (e.g. glutamic acid).

Saponification of Oils to Make Soap

Reagents: Alkali (KOH or NaOH)

Catalysts: None

Agricultural Inputs: Triglyceride fats and oils

Description: The process by which fats or oils are split into the glycerin and the free fatty acids by the addition of an alkali, a type of hydrolysis.

Sulfation of Fatty Alcohol to make e.g. Sodium Coco Sulfate

Reagents: Sulfate/SO₃ and NaOH

Catalysts: None

Agricultural Inputs: Fatty Alcohol

Additional Note: Sodium Lauryl Sulfate (SLS) from petrochemical sources not allowed

Description: The process of converting a fatty alcohol into the sulfate ester to produce a surfactant.

Sulfonation of Non-Alcohols to make Sulfonated Anionics (methyl esters, etc.)

Reagents: SO₂, SO₃, Sulfuric Acid

Catalysts: None

Agricultural Inputs: Methyl or Ethyl Ester of Triglyceride fat/oil (fat/oil original ag input) via dehydrated plant-based alcohol

Description: The process by which an SO₃ group is attached to the carbon atom of esters.



- An allowed synthetic* non-natural ingredient (see Appendix II) can be used:
 - Only when there is not a readily available, commercially viable, natural alternative ingredient equivalent
 - Only when there are no suspected human health hazards as identified by appearing in the authoritative lists of prohibited ingredients
 - Only when required for trade-acceptable product
 - Only when made using allowed processes
 - Only when synthetic does not appear on the Prohibited Processes nor Prohibited Ingredients list below
 - At no more than a 5% cumulative level in the final formulation (calculations do not include water)
 - *Synthetic definition is based on the NOP definition and is a substance which has been formulated or manufactured by a chemical process outside of the list of allowed processes or was derived from a source other than a naturally occurring plant, mineral or animal source.

- Ingredients that are prohibited:
 - Animal-based materials where the animal is harmed
 - By-products of animal renderings
 - Ingredients that have suspected human health hazards as indicated by authoritative organizations and appearing on the Prohibited Substance lists:
 - No carcinogens¹, mutagens² or reproductive toxicants³

¹ Carcinogens: IARC Group 1, 2A, 2B; REACH Carcinogens 1, 2; NTP – Known or Reasonably Anticipated Human Carcinogens; EPA IRIS; Prop 65 Carcinogen (relevant exposures for consumer product use or manufacturing); NIOSH Potential Carcinogen; EPA IRIS Carcinogen Assessment

- No endocrine disruptors⁴
- No ingredients identified as hazardous waste⁵
- No environmentally persistent, bioaccumulative, or toxic compounds⁶
- Ingredients that are made with, but not limited to the following processes:
 - Processes which are inconsistent with the 12 Principles of Green Engineering⁷
 - Processes which create undesirable by-products or impurities such as 1,4-dioxane, parabens, heavy metals, formaldehyde, such as:
 - Benzene processing which creates parabens
 - Acidification of ethoxylates which produces 1,4 dioxane
 - Petrolatum/Mineral Oil/Paraffin produced from petrochemical sources which contain undesirable impurities
 - Processes which create carcinogens, mutagens, reproductive toxins, or endocrine disruptors
 - Processes which use ingredients or create by-products that could become hazardous waste
 - Processes which use or create environmentally persistent, bioaccumulative, toxic, or neurotoxic compounds

² Mutagens: REACH Mutagen Category 2

³ Reproductive and Developmental: Prop 65 Devel; Prop 65 Male, Female Repro; REACH Repro Tox 1, 2

⁴ Endocrine Disruptors: EU Cat 1, 2 and with data quality category DQ1

⁵ Hazardous Waste: RCRA lists U, P, D

⁶ CERCLA/SARA 313 PBT; EU POPs; RCRA Waste Minimization; EPA Priority; Interim Review for the Strategy for Cooperation and Networking Between EU Member States and EFSA PBT Assessment; EU vPvT

⁷ P. Anastas, 2003, http://portal.acs.org/portal/PublicWebSite/greenchemistry/about/principles/WPCP_007505



- Processes which use animal by-products where the animal is harmed
- The following is an illustrative list of classifications of ingredients that are prohibited (see Appendix III for a longer list of prohibited ingredients):
 - Parabens – Synthetic preservatives that are potential endocrine disrupters
 - Petrolatum/Mineral Oil/Paraffin – Non-renewable byproducts of crude oil with potentially dangerous impurities
 - Synthetic Glycols – Petroleum derived synthetic chemicals that can potentially draw other chemicals into the bloodstream
 - Phthalates – Synthetic fragrance components that are potential toxins
 - Ethoxylated ingredients (like Sodium Myreth Sulfate and Sodium Laureth Sulfate, PEGs or PPGs) which are made in part with the petrochemical ethylene oxide and results in 1,4 Dioxane as a trace contaminant (1,4 Dioxane classified as a possible carcinogen)
 - Ethanolamines like MEA/DEA/TEA – Foam and viscosity boosting ingredients that can interact with other ingredients to form nitrosamines, a known carcinogen
 - Synthetic polymers (PVP/Acrylates) that contain residual PAHs (polycyclic aromatic hydrocarbons)
 - Formaldehyde Donors (DMDM Hydantoin/ Diazolidinyl Urea) – Preservatives that work by releasing formaldehyde
 - Synthetic fragrances
 - Synthetic colorants
- Other Product Requirements:
 - No animal testing except where required by law
 - Transparency and full disclosure of ingredients on product label per CSPA Voluntary Ingredient Communications Program utilizing INCI labeling standards



- Compliance with FTC and NAD guidelines
 - Strive to maximize use of recyclable and PCR materials in packaging
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- Other Requirements for Product Certification under the NPA Natural Program:
 - All ingredient information (i.e. raw material sources, processing information) must be disclosed in submission documentation
 - Product Certification term is two years and products will be reviewed every two years to maintain certification



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Appendices

I. Illustrative list of allowed natural ingredients

II. Allowed synthetic* (AS) ingredients – those temporarily allowed in the standard:

- Non-paraben, non-formaldehyde-donating synthetic preservatives
 - Methylisothiazolinone
 - Phenoxyethanol
 - Dehydroacetic acid
 - Sodium Benzoate
 - Potassium Sorbate

Notes:

- Total use of allowable synthetic ingredients may not exceed 5% of the total formula (calculated without water)
- These synthetic ingredients are reviewed annually for elimination from the standard
- These synthetic ingredients may not contain any of the prohibited ingredients or prohibited processes

III. Prohibited ingredients – illustrative (i.e., non-exhaustive) list

A. By Types/Classes:

- Synthetic Petrochemical Ingredients
- Synthetic Preservatives not otherwise specifically allowed
- Synthetic Fragrances
- Synthetic Colorants
- Compounds with “ethoxylate”, “PEG” or the suffix “-eth” in the ingredient name
- Compounds with “sarcosinate” in the ingredient name
- Compounds with “MEA”, “DEA” or “TEA” in the ingredient name
- Compounds with “taurate” in the ingredient name
- Compounds with “sultaine” in the ingredient name
- Compounds with “sulfosuccinate” in the ingredient name
- Compounds with “PPG” in the ingredient name



B. Specific ingredients:

- Ammonium Lauryl Sulfate
- Amodimethicone
- Behentrimonium Methosulfate
- Butylene glycol
- Carbomer
- Cetearth-20
- Cetrimonium Chloride
- Coco DEA
- Cocoamidopropyl Betaine
- Cyclopentasiloxane
- Diazolidinyl Urea
- Dimethicone
- Disodium Cocoamphodiacetate
- EDTA
- Ethylene Glycol
- EthylHexylGlycerin
- Glycereth-7 Cocoate
- Isoceteth 20
- Isopropyl Palmitate
- Lauramide MEA
- Lauryl DEA
- Methoxycinnamate
- Olefin Sulfonate
- Oleyl Betaine
- Parabens (methyl, propyl, butyl, etc.)
- PEG-150 Distearate
- PEG-7 Glyceryl Cocoate
- Polyquaternium 10
- Sodium Cocoyl Sarcosinate
- Sodium Hydroxymethylglycinate
- Sodium Laureth Sulfate
- Sodium Lauroyl Sarcosinate



- Sodium Lauryl Carboxylate
- Sodium Lauryl Sulfoacetate
- Sodium Myreth Sulfate
- Soyamidopropalkonium Chloride
- Stearamidopropyl Dimethyl Amine

Note:

- Includes synthetic silicone or petroleum compounds that are not specifically excepted elsewhere in the standard
- The Natural Standard requires all colorants in finished products to be all natural to receive certification. This eliminates any colorant ingredients that require the use of petrochemical materials for processing as well as other synthetically-sourced additives.
- The Natural Standard requires all fragrances in finished products to be all natural to receive certification. This effectively eliminates fragrance ingredients that require the use of petrochemical solvents for extraction as well as synthetically-sourced additives, these fragrance ingredients include absolutes, concretes, gums, resins, exudates, essential oils, isolates and chemicals*.

*Any natural fragrance ingredients are allowed, if the extraction/processing uses an allowed process as stated in The Natural Standard.