

Allergens by AccuStandard®

Of all the chemicals found in the environment today, only a small portion has been tested for toxicity. “Of the 10,500 chemical ingredients used in personal care products, only 11 percent have been safety assessed (including their allergen properties) and the assessments were not conducted by government officials, but by a panel funded by manufacturers”¹. Further, it is alarming to note that, “chemicals in combinations of two or more can create a synergy, making the toxicity significantly higher than any of the individual chemicals”². This is of concern because, “one-quarter of all women use at least 15 (personal-care) products a day”³.

“In addition to allergens, cosmetics and toiletries contain numerous other hazardous ingredients, including almost 100 carcinogens and 15 endocrine (hormonal) disrupters, particularly phthalates”⁴.

Did you know?

- 10% of the U.S. population is affected by allergens⁵.
- The Institute of Medicine placed fragrance in the same category as secondhand smoke in triggering asthma in adults and school-age children⁶.
- 5,000 is the approximate number of different fragrances in cosmetics⁷.
- 1/3 is the percentage of cosmetic and toiletry products that contain chemicals (including fragrances) which have been linked to cancer⁸.

The cosmetic known as “ceruse” was used by wealthy women in Europe from the 2nd century until well into the 19th century in order to make their faces look fashionably pale. Unfortunately, this was a fatal vanity because ceruse is essentially white lead⁹.

Pale is not currently chic, but using sun block is. However, common ingredients in sun blocks, such as PABA and 4-MBC, are now a health concern. An answer to address this concern is to increase the awareness and understanding of the effects of common chemicals. This awareness has already happened as is evidenced by increasing governmental and industrial (self-regulation) actions.

The European Union has banned Phthalates from cosmetics¹⁰. The European Parliament, through the SCCNFP, has limited the use of cosmetic allergens and has proposed the banning of 36 more. The \$124 billion a year cosmetics industry will be required to reformulate their products for EU consumers by September 2004. Many companies — such as The Body Shop, Urban Decay, and OSEA Skin Care — have already begun to remove these chemicals from their products or pledged to do so¹¹.

In the U.S., Senator Edward Kennedy (D-MA) has been asked by environmental organizations to consider legislation mandating labeling for cosmetics and toiletries that pose serious, irreversible health risks¹². Representative Jan Schakowsky, D-IL, has reintroduced legislation, “The Safe Notification and Information for Fragrances (SNIFF) Act,” to amend the Food, Drug, and Cosmetic Act. The Act requires that Allergens in fragrance products be labeled accordingly. More explicitly, the European Parliament has issued a Directive that all products containing 26 well-known Allergens should be labeled¹³. In another effort, California Bill AB 2025 seeks to prohibit dangerous chemicals in cosmetics¹⁴. All this will lead to increased testing to meet the new criteria.



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Allergen standards offered by AccuStandard:

Standards include those found in everything from shampoos to skin creams. Since personal care products have proliferated, we look better and smell better. However, the average person is now exposed to significantly higher levels of chemicals than people were exposed to only a generation ago. The resulting synergistic effect, coupled with environmental exposure to chemicals, is the focus of an ever increasing number of studies.

Some of these chemicals cause, or are suspected of causing, allergic reactions. Some chemicals are toxic. Phthalates are a cosmetic issue as well as a Food Safety concern as an Indirect Food Additive. They tend to migrate from plastic containers and wrappings into food. Finally, pesticides are a cosmetic ingredient issue since they can be present with other ingredients such as lanolin. AccuStandard offers the widest selection of Certified Reference Standards for pesticide and pesticide metabolite analysis (see [www. AccuStandard.com](http://www.AccuStandard.com) for a full list). The **Allergen Check** Standards were introduced by AccuStandard to meet analytical requirements.

Three Reasons to buy cosmetic Standards from AccuStandard instead of making them in your own lab:

- 1. Safety** The less exposure to concentrated chemicals, the fewer safety issues a company will have.
- 2. Certification** Full Certificates of Analysis come with all products. AccuStandard's quality system is ISO 9001:2000 accredited. AccuStandard is the only major organic standards manufacturer to be approved by NIST (under the NVLAP Program, Lab Code 200389-0) as a Proficiency Test (PT) provider.
- 3. Savings** Buying and manufacturing efficiencies along with storage and disposal issues make it more cost effective to get your standards from AccuStandard.

AccuStandard is the largest manufacturer dedicated solely to the synthesis, manufacture and analysis of certified chemical reference standards in the world. Known for its synthesis of all 209 PCB congeners, over 130 PBDE congeners, and almost all of the more important POPs (Persistent Organic Pollutants), AccuStandard's selection of over 30,000 standards is the widest available. All standards ship with Certificates of Analysis.

Many Standards are synthesized by AccuStandard and are not available elsewhere. If you do not see the chemicals or their metabolites that you need, let us know and we may be able to synthesize them. Additionally, if a certain custom mixture of allergens would make your analysis easier, we can provide you with a custom formulation that will save you time.



References:

- ¹ www.healthy-communications.com/6-04envcosmeticnews.html
- ² www.mindfully.org/Pesticide/2002/Chemical-Stats.htm
- ³ www.healthy-communications.com/6-04usatodaycosmetics.html
- ⁴ www.healthy-communications.com/02-8AS-label-allergens.htm
- ⁵ www.health.discovery.com/centers/allergyasthma/allergy/living2.html
- ⁶ www.fpinva.org/
- ⁷ www.health.discovery.com/centers/allergyasthma/allergy/living2.html
- ⁸ www.healthy-communications.com/04-6-14cosmetic dangers.html
- ⁹ <http://allallergy.net/articles/index.cfm/cdeoc/PU/entered/z/rview/z/whom/z/tingra/1/page/p3>
- ¹⁰ www.organicconsumers.org/bodycare/fda060104.cfm
- ¹¹ www.healthy-communications.com/04cosmeticregulationstobechanged.html
- ¹² www.healthy-communications.com/02-8AS-label-allergens.htm
- ¹³ www.ascribe.org/cgi-bin/spew4th.pl?ascribid=20040806.095645&time=10%2034%20PDT&year=plblic=1
- ¹⁴ www.healthy-communications.com/04cosmeticregulationstobechanged.html



Allergens listed in the EU Directive

EU Directive 76/768/EEC, Annex VIII (a), the work of the Scientific Committee on Cosmetic Products and Non-Food Products (SCCNFP), identified 26 fragrance allergens. They include cut-off levels beyond which the products must be labeled. These levels are 0.01% for rinse-off products and 0.001% for leave-on products. These allergens are also of concern outside the EU. The Directive lists another 36 allergens that may be banned, 28 are currently available.

Each is 1 mL at 1000 µg/mL. For Solvent see Key

EU DIRECTIVE LIST OF 26 REGULATED CONTACT ALLERGENS

	CAS #	Cat. No.
Amyl cinnamal	122-40-7	ALR-001S-CN-10X
Benzyl alcohol	100-51-6	ALR-002S-ET-10X
Cinnamyl alcohol	104-54-1	ALR-003S-ET-10X
Citral	5392-40-5	ALR-004S-CN-10X
Eugenol	97-53-0	ALR-005S-ET-10X
Hydroxy-citronellal	107-75-5	ALR-006S-CN-10X
Isoeugenol	97-54-1	ALR-007S-ET-10X
Amylcinnamyl alcohol	101-85-9	ALR-008S-ET-10X
Benzyl salicylate	118-58-1	ALR-009S-ET-10X
Cinnamal	104-55-2	ALR-010S-CN-10X
Coumarin	91-64-5	ALR-011S-CN-10X
Geraniol	106-24-1	ALR-012S-ET-10X
Hydroxymethylpentylcyclohexenecarboxaldehyde	31906-04-4	ALR-013S-CN-10X
Anisyl alcohol	105-13-5	ALR-014S-ET-10X
Benzyl cinnamate	103-41-3	ALR-015S-ET-10X
Farnesol	4602-84-0	ALR-016S-ET-10X
2-(4-tert-Butylbenzyl)propionaldehyde	80-54-6	ALR-017S-CN-10X
Linalool	78-70-6	ALR-018S-ET-10X
Benzyl benzoate	120-51-4	ALR-019S-ET-10X
Citronellol	106-22-9	ALR-020S-ET-10X
Hexyl cinnamaldehyde	101-86-0	ALR-021S-ET-10X
d-Limonene	5989-27-5	ALR-022S-ET-10X
Methylheptin carbonate	111-12-6	ALR-023S-ET-10X
Cetone Alpha	127-51-5	ALR-024S-CN-10X
Tree Moss	N/A	ALR-025S-ET-10X
Oak Moss	N/A	ALR-026S-ET-10X

Set of all 26 EU Allergens ALR-EU26-SET 26 x 1 mL

Each is 1 mL at 1000 µg/mL. For Solvent see Key

EU DIRECTIVE LIST THAT MAY BE BANNED:

	CAS #	Cat. No.
Alanroot (<i>Inula helenium</i>)	97676-35-2	ALR-027S-ET-10X
Allylthiocyanate	57-06-7	ALR-028S-ET-10X
Benzyl cyanide	140-29-4	ALR-029S-ET-10X
p-tert-Butylphenol (<i>Wormseed oil</i>)	98-54-4	ALR-030S-ET-10X
Diethyl maleate	141-05-9	ALR-033S-ET-10X
Dihydrocoumarin	119-84-6	ALR-034S-A-10X
(<i>6,7-Dihydrogeraniol</i>)		
Dimethyl citraconate	617-54-9	ALR-038S-ET-10X
6,10-Dimethyl-3,5,9-undecatrien-2-one (<i>Pseudoionone</i>)	141-10-6	ALR-040S-A-10X
Diphenylamine	122-39-4	ALR-041S-ET-10X
Ethyl acrylate	140-88-5	ALR-042S-ET-10X
trans-2-Heptenal	18829-55-5	ALR-044S-CN-10X
trans-2-Hexenal diethyl acetal	67746-30-9	ALR-045S-ET-10X
trans-2-Hexenal dimethyl acetal	18318-83-7	ALR-046S-10X
Hydroabietyl alcohol	13393-93-6	ALR-047S-ET-10X
Hydroquinone monoethyl ether (<i>4-Ethoxyphenol</i>)	622-62-8	ALR-048S-ET-10X
7-Methoxycoumarin	531-59-9	ALR-050S-CN-10X
4-(p-Methoxyphenyl)-3-butene-2-one	943-88-4	ALR-051S-CN-10X
1-(p-Methoxyphenyl)-1-penten-3-one	104-27-8	ALR-052S-CN-10X
Methyl trans-2-butenate	623-43-8	ALR-053S-10X
7-Methylcoumarin	2445-83-2	ALR-054S-CN-10X
5-Methyl-2,3-hexanedione (<i>Acetyl isovaleryl</i>)	13706-86-0	ALR-055S-CN-10X
Musk Ambrette (solution only)	83-66-9	ALR-056S-CN-10X
4-Phenyl-3-buten-2-one	122-57-6	ALR-058S-CN-10X
Verbena oil (<i>Lippia citriodora Kunth</i>)	8024-12-2	ALR-060S-ET-10X
Methyleugenol	95-15-2	ALR-061S-ET-10X

Set of 25 Allergens listed above ALR-EU36-R1-SET 25 x 1 mL



AllergenCheck™

For an alphabetical listing of Standards in this brochure, see last page.



Parabens

Parabens are used as a preservative in a wide range of products including over 13,200 cosmetics, and even in some foods. Until recently, parabens were thought to have no serious health risks. Recent testing has indicated a link between breast tumors and the use of underarm deodorants¹⁵.

Each is 1 mL at 100 µg/mL. For Solvent see Key
Each is available Neat 100 mg at same price.
Replace "S" with "N" in Cat. No.

Parabens:	CAS #	Cat. No.
4-Hydroxybenzoic acid (<i>Paraben</i>)	99-96-7	ALR-069S-CN
Benzyl paraben	94-18-8	ALR-083S
Butyl paraben	94-26-8	ALR-085S
Ethyl paraben	120-47-8	ALR-113S
Heptyl paraben	1085-12-7	ALR-117S
Isobutyl paraben	4247-02-3	ALR-121S
Isopropyl paraben	4191-73-5	ALR-122S
Methyl paraben	99-76-3	ALR-130S
Potassium sorbate	24634-61-5	ALR-152S
Propyl paraben	94-13-3	ALR-153S
Protocatechuic acid	3943-89-3	ALR-155S-CN

Reference:

¹⁵ <http://envirocancer.cornell.edu/Newsletter/General/v9i1/rc.parabens.cfm>



Phthalates †

Phthalates are the most commonly used plasticizers. "In cosmetics they are used to add texture and luster to the product."¹⁶ "A 2002 study at the University of Puerto Rico in San Juan linked phthalates (which are used to soften plastic) to early puberty in girls. Studies conducted at Harvard University in Cambridge in 2002 and 2003 linked the chemicals to decreased sperm counts in men. ... a 2002 study by the Atlanta based Center for Disease Control and Prevention, which found that phthalate levels in young women (who represent the bulk of cosmetic consumers) may be 20 times higher than average."¹⁷

Each is 1 mL at 100 µg/mL. For Solvent see Key

Phthalates:	CAS #	Cat. No.
Benzyl butyl phthalate	85-68-7	ALR-082S
Di(2-ethyl hexyl) phthalate (<i>DEHP</i>)	117-81-7	ALR-097S
Di-amyl phthalate	131-18-0	ALR-098S
Di-cyclohexyl phthalate	84-61-7	ALR-099S
Di-hexyl phthalate	84-75-3	ALR-100S
Di-iso-decyl phthalate	26761-40-0	ALR-101S
Di-iso-nonyl phthalate	68515-48-0	ALR-102S
Di-iso-octyl phthalate	27554-26-3	ALR-103S
Di-n-butyl phthalate (<i>DBP</i>)	84-74-2	ALR-104S
Di-n-octyl phthalate	117-84-0	ALR-105S
Dibutyl phthalate (<i>DBP</i>)	84-74-2	ALR-108S
Diethyl phthalate	84-66-2	ALR-110S
Dimethyl phthalate (<i>DMP</i>)	131-11-3	ALR-111S
Monobenzyl phthalate (<i>mBzP</i>)	2528-1-6	ALR-134S-CN
Monobutyl phthalate (<i>mBP</i>)	131-20-4	ALR-135S-CN
Monoethyl phthalate (<i>mEP</i>)	2306-33-4	ALR-137S-CN
Monoethylhexyl phthalate (<i>mEHP</i>)	4376-20-9	ALR-138S-CN
Monomethyl phthalate	4376-18-5	ALR-139S-CN

References:

¹⁶ www.alternet.org/story/13530

¹⁷ www.organicconsumers.org/bodycare/fda060104.cfm

† Although not strictly allergens, phthalates in cosmetics are toxic and suspected carcinogens.

Key to Catalog Numbers

N	Neat, 100 mg
S	Solution in Methanol
S-A	Solution in Acetone
S-CN	Solution in Acetonitrile
S-ET	Solution in Ethanol
S-T	Solution in Toluene
S-W	Solution in Water

Contact us to get your choice of concentrations, solvents, or if you need them neat rather than in solution.



Metals

Many metals, such as Mercury and Chromium, have long been known to cause health problems. The “mad hatters” of the 19th century suffered from mercury poisoning, as did the hat makers in Danbury, Connecticut, who called their disease the Danbury Shakes¹⁸. These metals have also found their way into everyday personal care products.

Each is 100 mL at 1000 µg/mL

METALS:	CAS #	Solvent	Cat. No. (100 mL)
Arsenic	7440-38-2	2-5% HNO ₃	ALR-MET-01S
Chromium	7440-47-3	2-5% HNO ₃	ALR-MET-02S
Cobalt	7440-48-4	2-5% HNO ₃	ALR-MET-03S
Lead	7439-92-1	2-5% HNO ₃	ALR-MET-04S
Mercury	7439-97-6	2-5% HNO ₃	ALR-MET-05S
Nickel	7440-02-0	2-5% HNO ₃	ALR-MET-06S
Potassium dichromate	7778-50-9	Water	ALR-MET-07S
Zirconium	7440-67-7	2-5% HNO ₃	ALR-MET-08S

Metals Set: ALR-MET-SET 8 x 100 mL

Reference:

¹⁸ www.epa.gov/grtlakes/seahome/mercury/src/effects.htm

Chlorofluorocarbon Propellants †

Each is 1 mL at 200 µg/mL. For Solvent see Key. Solution only.

Chlorofluorocarbon Propellants (CFC):	CAS #	Cat. No.
Freon #13b1 (Bromotrifluoromethane)	75-63-8	ALR-CFC-001S-2X
Freon #142b (1-Chloro-1,1-difluoroethane)	75-68-3	ALR-CFC-002S-2X
Freon #22 (Chlorodifluoromethane)	75-45-6	ALR-CFC-003S-2X
Freon #160 (Chloroethane)	75-00-3	ALR-CFC-004S-2X
Freon #40 (Chloromethane)	74-87-3	ALR-CFC-005S-2X
Freon #115 (Chloropentafluoroethane)	76-15-3	ALR-CFC-006S-2X
Freon #13 (Chlorotrifluoromethane)	75-72-9	ALR-CFC-007S-2X
Freon #12 (Dichlorodifluoromethane)	75-71-8	ALR-CFC-008S-2X
Freon #21 (Dichlorotrifluoromethane)	75-43-4	ALR-CFC-009S-2X
Freon #114 (1,2-Dichloro-1,1,2,2-tetrafluoroethane)	76-14-2	ALR-CFC-010S-2X
Freon #152a (1,1-Difluoroethane)	75-37-6	ALR-CFC-011S-2X
Freon #134a (Tetrafluoroethane)	811-97-2	ALR-CFC-012S-2X
Freon #11 (Trichlorotrifluoromethane)	75-69-4	ALR-CFC-013S-2X
Freon #113 (1,1,2-Trichloro-1,2,2-trifluoroethane)	76-13-1	ALR-CFC-014S-2X
Freon #23 (Trifluoromethane)	75-46-7	ALR-CFC-015S-2X

CFC Set: ALR-CFC-SET 15 x 1 mL

Sun Block †

Research at the Institute of Pharmacology and Toxicology at the University of Zurich in Switzerland tested six common UV screening chemicals used in sunscreens, lipsticks, and other cosmetics. Five of the six behaved like estrogen in lab tests. Hormone disrupters cause a variety of health problems¹⁹.

Each is 1 mL at 100 µg/mL. For Solvent see Key

SUN BLOCK:	CAS #	Cat. No.
4-Methyl-benzylidene camphor (4-MBC)	36861-47-9	ALR-073S
Benzophenone-3 (Bp-3)	131-57-7	ALR-081S-CN
Butyl-methoxydibenzoylmethane (B-MDM) (Parsol1789)	70356-09-1	ALR-086S
Homosalate (HMS)	118-56-9	ALR-119S
Octyl-dimethyl-PABA (OD-PABA) (Padimate O)	21245-02-3	ALR-146S
Octyl-methoxycinnamate (OMC)	5466-77-3	ALR-144S

Reference:

¹⁹ www.newscientist.com/news/news.jsp?id=ns9999641



AllergenCheck™

† Although not strictly allergens, these chemicals are known to be toxic or a regulatory concern.

Read the list of ingredients on your label!

Those ingredients in Fragrances which cause allergic and toxic reactions will penetrate the skin and enter the blood stream to extent of 30%¹. Furthermore, OSHA, NCI, and WHO named 125 cosmetic chemicals that are suspected carcinogens and mutagens of which nine, according to 1970 study, can be absorbed up to 43% of the applied dose².

Sources:

¹ *Cosmetics & Toiletries* magazine, Vol. 119, No. 8/August 2004, p 69.

² www.healthgoods.com/Education/Health_Information/Personal_Care

Key to Catalog Numbers

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Contact us to get your choice of concentrations, solvents, or if you need them neat rather than in solution.



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