

Health Risks from Perfume: The Most Common Chemicals Found in Thirty-One Fragrance Products by a 1991 EPA Study

by Julia Kendall, 1995

Compiled by Julia Kendall*, Co-Chair, Citizens for a Toxic-Free Marin. Phone: (415) 485-6870. Reference: Lance Wallace, Environmental Protection Agency; Phone (703) 341-7509 Excerpts from "Health Hazard Information." References: Material Safety Data Sheets (MSDS). Provided with permission by Barbara Wilkie wilworks@lmi.net of the [Environmental Health Network \(of California\)](http://EnvironmentalHealthNetwork.org). [*NOTE: [Julia Kendall](http://JuliaKendall.com) died July 12, 1997 from Multiple Chemical Sensitivities and Leukemia caused by pesticide poisoning.]

Principal chemicals found in scented products are:

ACETONE

(in: cologne, dishwashing liquid and detergent, nail enamel remover) - On EPA, RCRA, CERCLA Hazardous Waste lists. "Inhalation can cause dryness of the mouth and throat; dizziness, nausea, incoordination, slurred speech, drowsiness, and, in severe exposures, coma." "Acts primarily as a central nervous system (CNS) depressant."

BENZALDEHYDE

(in: perfume, cologne, hairspray, laundry bleach, deodorants, detergent, vaseline lotion, shaving cream, shampoo, bar soap, dishwasher detergent) - Narcotic. Sensitizer. "Local anesthetic, CNS depressant"... "irritation to the mouth, throat, eyes, skin, lungs, and GI tract causing nausea and abdominal pain." "May cause kidney damage." "Do not use with contact lenses."

BENZYL ACETATE

(in: perfume, cologne, shampoo, fabric softener, stickup air freshener, dishwashing liquid and detergent, soap, hairspray, bleach, after shave, deodorants) - Carcinogenic (linked to pancreatic cancer); "From vapors: irritating to eyes and respiratory passages, exciting cough." "In mice: hyperaemia of the lungs." "Can be absorbed through the skin causing systemic effects." "Do not flush to sewer."

BENZYL ALCOHOL

(in: perfume, cologne, soap, shampoo, nail enamel remover, air freshener, laundry bleach and detergent, Vaseline lotion, deodorants, fabric softener) - "irritating to the upper respiratory tract" ... "headache, nausea, vomiting, dizziness, drop in blood pressure, CNS depression, and death in severe cases due to respiratory failure."

CAMPHOR

(in: perfume, shaving cream, nail enamel, fabric softener, dishwasher detergent, nail color, stickup air freshener) - "local irritant and CNS stimulant" ... "readily absorbed through body tissues" ... "irritation of eyes, nose and throat" ... "dizziness, confusion, nausea, twitching muscles and convulsions" "Avoid inhalation of vapors."

ETHANOL

(in: perfume, hairspray, shampoo, fabric softener, dishwashing liquid and detergent, laundry detergent, shaving cream, soap, Vaseline lotion, air fresheners, nail color and remover, paint and varnish remover) - On EPA Hazardous Waste list; symptoms: "...fatigue; irritating to eyes and upper respiratory tract even in low concentrations..." "Inhalation of ethanol vapors can have

effects similar to those characteristic of ingestion. These include an initial stimulatory effect followed by drowsiness, impaired vision, ataxia, stupor..." Causes CNS disorder. [Note: this refers to denatured ethanol, which is commonly used in the cosmetic industry, not to drinking alcohol.]

ETHYL ACETATE

(in: after shave, cologne, perfume, shampoo, nail color, nail enamel remover, fabric softener, dishwashing liquid) - Narcotic. On EPA Hazardous Waste list; "...irritating to the eyes and respiratory tract" ... "may cause headache and narcosis (stupor)" ... "defatting effect on skin and may cause drying and cracking" ... "may cause anemia with leukocytosis and damage to liver and kidneys" "Wash thoroughly after handling."

LIMONENE

(in: perfume, cologne, disinfectant spray, bar soap, shaving cream, deodorants, nail color and remover, fabric softener, dishwashing liquid, air fresheners, after shave, bleach, paint and varnish remover) - Carcinogenic. "Prevent its contact with skin or eyes because it is an irritant and sensitizer." "Always wash thoroughly after using this material and before eating, drinking, ...applying cosmetics. Do not inhale limonene vapor."

LINALOOL

(in: perfume, cologne, bar soap, shampoo, hand lotion, nail enamel remover, hairspray, laundry detergent, dishwashing liquid, Vaseline lotion, air fresheners, bleach powder, fabric softener, shaving cream, after shave, solid deodorant) - Narcotic. ... "respiratory disturbances" ... "Attracts bees." "In animal tests: ataxic gait, reduced spontaneous motor activity and depression ... development of respiratory disturbances leading to death." ... "depressed frog-heart activity." Causes CNS disorder.

METHYLENE CHLORIDE

(in: shampoo, cologne, paint and varnish remover) - Banned by the FDA in 1988! No enforcement possible due to trade secret laws protecting chemical fragrance industry. On EPA, RCRA, CERCLA Hazardous Waste lists. "Carcinogenic" ... "Absorbed, stored in body fat, it metabolizes to carbon monoxide, reducing oxygen-carrying capacity of the blood." "Headache, giddiness, stupor, irritability, fatigue, tingling in the limbs." Causes CNS disorder.

a-PINENE

(in: bar and liquid soap, cologne, perfume, shaving cream, deodorants, dishwashing liquid, air freshener) - Sensitizer (damaging to the immune system).

g-TERPINENE

(in: cologne, perfume, soap, shaving cream, deodorant, air freshener) - "Causes asthma and CNS disorders."

a-TERPINEOL

(in: perfume, cologne, laundry detergent, bleach powder, laundry bleach, fabric softener, stickup air freshener, Vaseline lotion, cologne, soap, hairspray, after shave, roll-on deodorant) - ... "highly irritating to mucous membranes"... "Aspiration into the lungs can produce pneumonitis or even fatal edema." Can also cause "excitement, ataxia (loss of muscular coordination), hypothermia, CNS and respiratory depression, and headache." "Prevent repeated or prolonged skin contact."

Unable to secure MSDS for the following chemicals: 1,8-CINEOLE; b-CITRONELLOL; b-MYRCENE; NEROL; OCIMENE; b-PHENETHYL ALCOHOL; a-TERPINOLENE

Relevant Facts:

- 95% of chemicals used in fragrances are synthetic compounds derived from petroleum. They include benzene derivatives, aldehydes and many other known toxics and sensitizers - capable of causing cancer, birth defects, central nervous system disorders and allergic reactions. Neurotoxins: At Home and the Workplace, Report by the Committee on Science & Technology, U.S. House of Representatives, Sept. 16, 1986. (Report 99-827)
- Central Nervous System disorders (brain and spine) include Multiple Sclerosis, Parkinson's Disease, Alzheimer's Disease, Sudden Infant Death Syndrome.
- Chloroform was found in tests of fabric softeners: EPA's 1991 study.
- A room containing an air freshener had high levels of p-dichlorobenzene (a carcinogen) and ethanol: EPA's 1991 study.
- An FDA analysis (1968-1972) of 138 compounds used in cosmetics that most frequently involved adverse reactions, identified five chemicals (alpha-terpineol, benzyl acetate, benzyl alcohol, limonene and linalool) that are among the 20 most commonly used in the 31 fragrance products tested by the EPA in 1991!
- Thirty-three million Americans suffer from sinusitis (inflammation or infection of sinus passages).
- Ten million Americans have asthma. Asthma and asthma deaths have increased over 30% in the past 10 years.
- Headaches cost \$50 billion in lost productivity and medical expenses and 157 million lost work days in 1991. "Focus on Fragrance and Health," by Louise Kosta, The Human Ecologist, Fall 1992.

Patricia P. Wilcox has written an excellent [addendum](#) describing some of the chemicals Julia Kendall was unable to get information on.

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Addendum to the Most Common Chemicals Found in Thirty-One Fragrance Products by a 1991 EPA Study

by Patricia P. Wilcox, wilcox.18@osu.edu, December 1995

This is an addendum to Julia Kendall's article, The Most Common Chemicals Found in Thirty-One Fragrance Products by a 1991 EPA Study.

1,8-cineole is the same thing as eucalyptol (eucalyptus oil), which is a well known porphyria-inducing chemical. Malaleuca oil (tea tree oil) contains the same ingredient, and has been observed to cause severe central nervous system symptoms in pets and small children. Eucalyptol is also called limonene oxide. Actually, limonene (d-limonene)

is not a skin irritant until it undergoes oxidation (probably to the eucalyptol/cineole form of limonene oxide). For this reason you are supposed to store limonene in air-tight containers in the dark.

1 - CHEMID
CAS REGISTRY NUMBER 470-82-6
OTHER CAS REG NUMBER 8024-52-0
[TSCAINV]
OTHER CAS REG NUMBER 8024-53-1
[TSCAINV]
OTHER CAS REG NUMBER 10458-11-4
[TSCAINV]
MOLECULAR FORMULA C10-H18-O
[EINECS:HSDB:RTECS:TSCAINV:USPDDN]
SYSTEMATIC NAME Cineole [EINECS]
SYSTEMATIC NAME p-Menthane, 1,8-epoxy- (VAN) (8CI) [RTECS]
SYSTEMATIC NAME 1,8-epoxy-p-menthane [MESH]
SYSTEMATIC NAME 2-Oxabicyclo(2.2.2)octane, 1,3,3-trimethyl- (9CI) [TSCAINV]
NAME OF SUBSTANCE Cineole [HSDB:MESH]
NAME OF SUBSTANCE Eucalyptol [CTFA]
NAME OF SUBSTANCE Eucalyptol [USAN] [USPDDN]
NAME OF SUBSTANCE [LIST] Eucalyptol [PAFA]
SYNONYMSAI3-00578 [NLM]
SYNONYMS Cajeputol [CTFA:HSDB:RTECS]
SYNONYMS Cineol [NLM]
SYNONYMS Cineole (VAN) [CTFA:RTECS]
SYNONYMS Cucalyptol [NLM]
SYNONYMS Eucalyptol [HSDB:MESH:RTECS]
SYNONYMS Eucalyptole [HSDB:RTECS]
SYNONYMS Eucapur [HSDB]
SYNONYMS Eukalyptol [Czech] [RTECS]
SYNONYMS HSDB 991 [HSDB]
SYNONYMS Limonene oxide [HSDB:RTECS]
SYNONYMS NCI-C56575 [RTECS]
SYNONYMS NSC 6171 [NLM]
SYNONYMS p-Cineole [HSDB]
SYNONYMS P-METHANE, 1,8-EPOXY- [HSDB]
SYNONYMS Terpan [HSDB]
SYNONYMS Zedoary oil [HSDB]
SYNONYMS Zineol [NLM]
SYNONYMS 1,3,3-Trimethyl-2-oxabicyclo(2.2.2)octane [CTFA:HSDB]
SYNONYMS 1,8-Cineol [HSDB:RTECS]
SYNONYMS 1,8-Cineole [HSDB:MESH:RTECS]
SYNONYMS 1,8-Epoxy-p-menthane [HSDB:RTECS]
SYNONYMS 1,8-Oxido-p-menthane [RTECS]
SYNONYMS 1,8-OXIDO-P-METHANE [HSDB]
SYNONYMS 2-Oxa-1,3,3-trimethylbicyclo(2.2.2)octane [HSDB]
SYNONYMS 2-Oxabicyclo(2.2.2)Octane, 1,3,3-Trimethyl- [CTFA:HSDB:RTECS]
LIST LOCATOR PAFA
LOCATOR TOXLINE ; TOXLIT ; TOXLINE65 ; TOXLIT65 ; MEDLINE ; MED86 ; MED83 ; MED80 ; MED77 ; MESH ; RTECS ; EMICBACK ; ETICBACK ; HSDB ; TSCAINV ; EINECS ; SUPERLIST