

## Common Fragrance Ingredients

**Acetic acid, benzyl ester** - CAS# 140-11-4

Target organs: nerves, kidneys; possible carcinogen

**Benzyl alcohol** - CAS# 100-51-6 Central Nervous System (CNS) depressant

**p-Cresol, 2,6-di-tert-butyl-** - CAS# 128-37-0

Target organ: lungs; possible carcinogen

**Coumarin** - CAS# 91-64-5 Animal carcinogen

**p-Cymene** - CAS# 99-87-6 Chronic effects: damage to lungs, liver, kidneys; Target organ: CNS

**Diethyl phthalate**- CAS# 84-66-2 Possible risk of congenital malformation in the fetus; targets nerves

**Iso E Super** CAS #54464-57-2 - The chemical, physical, and toxicological properties have not been thoroughly investigated.

<http://www.ehnca.org/FDApetition/analysis.htm>

**Musk ketone** - CAS# 81-14-1 Increases carcinogenic effects of other materials. Found in blood, fat tissue, and breast milk; crosses placental barrier

**Musk xylene** - CAS# 81-15-2 Carcinogenic in animal studies. Found in blood, fat tissue, and breast milk; crosses placental barrier

**6-Octen-1-ol, 3,7-dimethyl-** CAS# 106-22-9

Extremely destructive to the tissue of the mucous membranes and upper respiratory tract

**Toluene** - CAS# 108-88-3 Target organs: liver, kidneys, brain, bladder. One of nine major starting materials for synthesis of fragrance chemicals

**4-Vinylphenol** - CAS# 2628-17-3 Toxic. May impair fertility. Toxic by inhalation. Respiratory and skin sensitizer

**2,6-Xylenol** - CAS# 576-26-1 Toxic. Harmful by inhalation. Material is extremely destructive to upper respiratory system, eyes, and skin. Corrosive

Sources for information: MSDS sheets from Aldrich Chemical Company, National Toxicology Program Studies, as well as other medical and scientific literature. CAS stands for Chemical Abstract Services, which provides a unique identifying number for each chemical.

### References & Resources

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## FRAGRANCES THE HEALTH RISKS

Sensitivity and other adverse effects from fragrances are hardly isolated events. There are growing numbers of people that are adversely impacted by the widespread use of scented products.

This brochure is provided to help increase awareness of the negative impact fragrances may have on your health and the health of others. The information provided is based on medical, scientific, and industry literature.

***FRAGRANCE: Materials added to give the product a scent, mask the odor of other ingredients, or alter mood and emotions. Materials used may be synthetic, natural, or both.***

The use of fragrance has increased tenfold since the 1950s. The industry sales of fragrance materials used to scent products doubled between 1980 and 1989. This phenomenal growth means that exposure to the materials used in fragrance has increased as well. Fragrance is added to toiletries, cosmetics, household products, pesticides and many other items. With this increase in exposure, problems associated with fragrance have emerged. **Not only has the incidence of adverse health effects to users of scented products increased,<sup>1</sup> there are problems from "second-hand" exposures as well.**

Substances used in fragrance are volatile compounds that get into the air and linger. These compounds add to indoor air pollution and contribute to poor indoor air quality. According to the EPA, poor air quality can cause headaches, irritation to eyes, nose, and throat, dizziness, fatigue, forgetfulness and a host of other symptoms. Long-term exposure to air pollutants can contribute to the development of cancer, respiratory conditions, allergies, asthma, chemical sensitivity, and other diseases.

In spite of the ubiquitous exposure, there is little regulation or monitoring of the use of fragrance or the materials that are used in them. **Fragrance formulas are considered trade secrets and do not have to be revealed to the public or regulatory agencies. Regulation is fragmented, there are few laws in place, and these are rarely enforced. By all accounts the fragrance industry is primarily self-regulated with very little oversight.<sup>2</sup>**

## HEALTH CONCERNS

Fragrance can enter the body through lungs, airways, skin, ingestion, and via pathways from the nose directly to the brain.<sup>3</sup>

An EPA-sponsored literature review grouped fragrance, secondhand smoke, and formaldehyde together as triggers for asthma.<sup>4</sup>

Up to 72% of asthmatics cite fragrance as a trigger.<sup>5</sup>

Fragrance contributes to indoor air pollution and can irritate the eyes, nose, throat, and lungs.<sup>6</sup>

As much as 15% of the general population find fragrance a lower airway irritant.<sup>7</sup>

Fragrance in the air can cause airborne contact dermatitis.<sup>8</sup>

Research suggests as much as 11% of the general population may have skin allergy to fragrance.<sup>9</sup>

According to the information at the FDA website, fragrance is the number one cause of skin allergic reactions to cosmetics.<sup>10</sup>

Scented products often contain several known skin sensitizers.<sup>11</sup>

Common fragrance chemicals like coumarin, methyl eugenol and others are suspected carcinogens.<sup>12</sup>

Musk xylene is a suspected carcinogen.<sup>13</sup>

Musk ketone is suspected of increasing carcinogenic effects of the other materials.<sup>13</sup>

Musk ketone and musk xylene are found in fat tissue and breast milk.<sup>13</sup>

Synthetic musk compounds may cross the placental barrier.<sup>13</sup>

Synthetic musk<sup>14</sup> and other materials have estrogenic effects.<sup>15</sup>

Materials used in fragrance (such as some phthalates) are suspected hormone disrupters.<sup>16</sup>

Fragrance has neurological effects that can alter blood pressure, pulse, and mood, and have sedative effects.<sup>17</sup>

## OTHER CONCERNS

80 - 90% of materials used in fragrance are synthesized, most from petroleum products. Less than 1300 of the over 3000 fragrance materials in use have been evaluated for skin safety.

Industry testing focuses on skin effects and rarely evaluates respiratory, neurological, reproductive or systemic effects.

The materials used in fragrance are not on the label and do not have to be disclosed to anyone, including regulatory agencies. The only way to avoid problematic materials is to avoid all scented products.

Products claiming to be "Fragrance Free" or "Unscented" may still contain fragrance, which may or may not be listed as an ingredient on the label.

Modern fragrance formulas often contain high concentrations of potent and long lasting synthetic materials with little history of use and little available health and safety data. Modern formulations are designed to quickly get into the air and some fragrance chemicals linger in fabric and on surfaces for months. When a person has an adverse effect from fragrance, it is almost impossible to pinpoint the responsible ingredient.

Virtually every segment of the population has exposure to fragrance.

Fragrance accumulates and persists in the aquatic environment like other persistent organic pollutants such as pesticides.

Fragrance is ubiquitous in air inside and found outside, even in remote areas.

Many fragrance chemicals are on the EPA's High Production Volume List, meaning that over one million pounds are manufactured or imported annually.