

What is an Aroma Chemical?



Aroma Chemicals refer to chemical substances that impart odor. They are often highly volatile which makes sense since their purpose is to provide scent or flavor. Along with Essential Oils, aroma chemicals form the backbone of ingredients used when formulating flavors and fragrances.

Aroma Chemicals are not to be confused with aromatic compounds which is a term in organic chemistry that refers specifically to molecules that contain conjugated planar ring systems such as benzene and toluene. Aroma chemicals can be alcohols, esters, aldehydes, terpenes, ketones etc. They can be produced synthetically or by processes that conform to a definition of natural. In the United States that definition can be found in CFR 21 101.22(3). Aroma chemicals produced by isolation or by fermentation are easily understood as natural.

Aroma chemicals that are produced in chemical reactors where the starting materials are synthetic, and undergo substantial chemical transformation, are synthetic. An example of a natural aroma chemical would be citral produced by fractional distillation from lemongrass oil or oil Litsea Cubeba. An example of a synthetic aroma chemical would be

Anethole produced by a series of complex chemical reactions from crude sulfate turpentine. In reality, the difference between natural and synthetic is often nuanced, however, the prior examples get the point across. Interestingly, the definition of natural can be different in different countries. The definition is different in the US than in European Union countries such as Germany and France.

Virtually all aroma chemicals are characteristic of a particular odor. For example Vanillin smells like vanilla and Laevo Carvone smells like Spearmint. Some aroma chemicals like sulfur chemicals are unpleasant. Some aroma chemicals are unpleasant in their full strength but beautiful when diluted. Aroma chemicals are the building blocks for making flavor and fragrances. Not all aroma chemicals used in both flavors are used in fragrances. The opposite is also true. To a large degree this has to do with safety testing that results in approved lists for ingredients. In the United States, to be used in flavors, an aroma chemical has a FEMA GRAS number. GRAS stands for Generally Recognized as Safe (under conditions of intended use). Fragrance substances are often regulated based on use. Some products have restrictions based on whether they are being used in "leave-on" products or candles or detergents etc.

Starting materials for artificial chemicals are often less expensive than natural counterparts and reliability of the starting material is more predictable than starting materials derived from nature where weather effects supply. The two basic starting materials for chemicals are petroleum and crude sulfate turpentine a byproduct of paper.

At Citrus and Allied Essences Ltd., we manufacture aroma chemicals, both natural and synthetic. We also offer aroma chemicals that we do not produce that tend to be low volume products for which there are not too many suppliers. Our aroma chemical offerings help the company to fulfill its purpose to be a supplier of a broad range of ingredients used in flavors and fragrances.