



The Mint Note in Perfumery

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Mints have been used and valued for aromatic purposes for thousands of years. The ancient Greeks and Romans used them. Their effect was so powerful that, according to myth, a nymph called Menthe, who was greatly loved by Pluto, was transformed into the mint herb by Pluto's jealous wife.

Mints were the favorite herbs of the Roman scholar Pliny. He enjoyed them for their aromatic effect: "The very smell of mints reanimates the spirit."

In the New Testament, Matthew notes their value by quoting Jesus' condemnation of the Pharisees for requiring a tithe of mint, dill and cumin (Chapter 23, verse 23).

In the Middle Ages, mints, particularly pennyroyal, were used for *strewing* purposes—they were scattered about castles to mask the dreadful odors and repel insects. As the writer Gerard stated, "The smell rejoiceth the heart of man, for which they caused to strew it in chambers and places of recreation, pleasure and repose where feasts and banquets are made." In medieval France, thyme plants were thought to be a home for fairies, and gardeners set aside a small bed of thyme so fairies would visit the garden.

The Pilgrims brought mint plants with them when they came to the New World. As these settlers spread their colonies, they spread mints with them. In our own century, application of mint notes has spread to all types of perfumed goods, from household products to fine fragrances.

This paper will discuss the mint raw materials and how they are used to create perfumes. This information comes from a variety of sources, including standard industry references and packed-column G/C analysis of extracted perfumes. Other sources include my own experiences and knowledge from more than 25 years in the perfume industry, and private communications with others in this field.

Mint Raw Materials

Mint raw materials include both natural components and aroma chemicals. Mint is the common name of approximately 25 perennial species of the genus *Mentha* of the Labiatae family. The name sometimes is used to refer to any member of the Labiatae family, also called the mint family, because many of the plants within this family are characterized by their aromatic foliage.

The leaves of the mint plants are used for cooking. The plants of the the mint family are grown worldwide in most temperate regions. True mints (genus *Mentha*) are sources of essential oil, which is used for flavoring, perfume and medicinal purposes.

The list of mint materials used by the perfumer to create fragrances is more extensive than this, however. The perfumer—unlike the flavorist, botanist or scientist—is guided strictly by scent. If a raw material smells minty, then it is a mint note.

To the perfumer, anything that smells cool and fresh would be classified as minty, and anything minty would fall into the mint category, to be used to provide a cool, fresh, natural, clean top note to perfumes. For the perfumer, all mint notes are top-note materials because they have high volatility and, therefore, they can be employed in the initial stage of a perfume's progression. Mint notes can be of natural or synthetic origin. They can be expensive or cheap, and they can be found locally or worlds away.

Natural Materials

Let's examine the list of mint components used by perfumers by starting with materials of natural origin. We'll limit the list to materials that are commercially available. For the sake of discussion, I shall divide the natural mint notes into three categories:

- Raw materials of the genus *Mentha* (Table I).
- Raw materials in the Labiatae family (Table II).

This article is adapted from the author's presentation at the International Mint Symposium in Seattle, Washington, on August 4, 1997.

Table I. Raw materials of the genus *Mentha*

Raw material (species)	Form	Odor	Constituents	Uses	Aromatherapy	Distribution	Similar odor
peppermint (<i>Mentha piperita</i>)	essential oil, absolute	powerful, minty, camphoraceous	menthol, menthone, menthyl acetate	widely used for all types of perfumes	stimulating effects	worldwide; particularly the USA	cornmint, pennyroyal
cornmint (<i>Mentha arvensis</i>)	essential oil	minty, fresh	menthol, menthone, menthyl acetate, isomenthone	because of its coarse odor character, it is usually employed in household perfumes	pain relief	Europe, parts of Asia and the USA; primarily China, Brazil, Paraguay and India	peppermint, pennyroyal
pennyroyal (<i>Mentha pulegiumi</i>)	essential oil	minty, fresh, herbaceous	pulegone, menthone, isomenthone	because of its coarse nature, it is used in household perfumes	should not be used internally or externally	Europe and parts of Asia; primarily Spain, Morocco and Tunisia	peppermint, cornmint
spearmint (<i>Mentha spicata</i>)	essential oil, absolute	minty, herbaceous, spicy	l-carvone, dihydrocarvone, menthone	widely used for all types of perfumes	stimulating effects	Europe, western Asia, the Middle East, but primarily the USA	none
bergamot mint (<i>Mentha citrata</i>)	essential oil	fresh, herbaceous	linalyl acetate, linalool	household product perfumes	not known	USA	clary sage

- Mint-like raw materials outside the Labiatae family (Table III).

All the data in these tables refers exclusively to perfumery and the mint note. I have included common aromatherapy uses because this field has become increasingly important.

The perfumer categorizes perfumes into three major groups: household products, personal-care products and fine fragrances. Household products include such items as air fresheners, detergents, cleaners and fabric softeners. Personal-care products include shampoos, lotions, soap bars and bath products. Fine fragrances are men's and women's colognes and perfumes.

Aroma Chemicals

The perfumer's palette of mint raw materials is not limited to natural components. Aroma chemicals are extensively employed to provide the cool, natural, fresh, clean top note representative of the mint note. Some are natural and some are synthetic.

Tables IV and V list commercially available aroma chemicals that are used to provide a minty quality to perfumes. The mint-scented chemicals are grouped in Table IV and the mint-related chemicals in Table V.

To better visualize these chemicals and their relationship to each other, a palette of mint notes has been devised (Figure 1).

Products

Now that we are familiar with raw materials that provide mint properties, I would like to mention some well-known market products that contain mint notes. I will indicate the material present and its approximate percentage in the perfume oil.

Household products: In the household products category, the mint notes are used to provide power, strength, freshness and a clean character. Many home and industrial air fresheners contain mint notes. Materials such as cornmint and menthol are used at high percentages to impart freshness and a clean impression to the surrounding environment. The perfume in Soft Scrub cleaner contains less than 1% spearmint oil to provide a fresh and clean impression in use. Also, there are many industrial cleaning product perfumes that contain mint notes.

Personal care: The perfumes used for personal-care products are pleasant, well balanced and clean smelling. Those attributes are reflected in the pleasant, clean freshness of mint notes.

There are numerous examples of mint notes in personal-care products. Yardley English Lavender Soap perfume has peppermint oil (<0.5%) to push the freshness of the lavender note. Old Spice shave foam contains menthol and geranium oil to help provide a bracing shaving experience. The classic baby-powder perfumes contain gera-

Table II. Raw materials in the Labiatae family

Raw material (species)	Form	Odor	Constituents	Uses	Aromatherapy	Distribution	Similar odor
lavender (<i>Lavandula angustifolia</i>)	essential oil, absolute	fresh, herbaceous	cineol	widely used in all types of perfumes	pain relief and relaxation	Mediterranean region; particularly France	spike lavender, lavandin, rosemary
spike lavender (<i>Lavandula latifolia</i>)	essential oil	fresh, herbaceous, camphoraceous	cineol	household product perfumes	pain relief and relaxation	Mediterranean region; particularly France	lavender, lavandin, rosemary
lavandin (<i>Lavandula x intermedia</i>)	essential oil, absolute	fresh, camphoraceous, herbaceous	cineol	wide range of perfumes for household products and personal-care products	pain relief and relaxation	Mediterranean region; particularly France	lavender, spike lavender, rosemary
rosemary (<i>Rosmarinus officinalis</i>)	essential oil, absolute	fresh, minty, camphoraceous, herbaceous	cineol	perfumes for household products and personal-care products	stimulation effects	Mediterranean region; particularly France, Spain and Tunisia	lavender, spike lavender, lavandin
basil (<i>Ocimum basilicum</i>)	essential oil	fresh, sweet, herbaceous	methyl chavicol, cineol	perfumes for fine fragrances and personal-care products	none	Comoro Islands and Madagascar	French basil
French basil (<i>Ocimum basilicum</i>)	essential oil	fresh, spicy, herbaceous	methyl chavicol	perfumes for fine fragrances and personal-care products	nerve tonic	Mediterranean region; particularly France and Italy	basil oil
sweet marjoram (<i>Origanum majorana</i>)	essential oil	camphoraceous, spicy, woody	carvacrol	fine-fragrance perfumes	stress reduction	Mediterranean region	oregano
oregano (<i>Origanum vulgare</i>)	essential oil	herbaceous, spicy, camphoraceous	carvacrol, thymol	fine-fragrance perfumes	none	Europe; particularly Italy	sweet marjoram, thyme
thyme (<i>Thymus vulgaris</i>)	essential oil, absolute	herbaceous, spicy, camphoraceous	thymol	wide range of perfumes for household products to fine fragrances	used in moderation for headaches and nervous conditions	Mediterranean region; particularly France and Spain	oregano
clary sage (<i>Salvia sclarea</i>)	essential oil, absolute	fresh, herbaceous	linalyl acetate, linalool	perfumes for fine fragrances and personal-care products	stress reduction	Mediterranean region, Russia and Morocco	<i>Mentha citrata</i>

nium (<5.0%) and spearmint (<0.5%) to furnish a fresh counterpoint to the sweetness of the powdery base notes.

A new shampoo from H₂O Plus, Mint Ice, has spearmint, peppermint and pennyroyal to give a tingling, cool sensation to the scalp. Vick's Vapo-Rub contains menthol (>3.0%), eucalyptus (>6.0%) and thymol (>2.0%) to pro-

vide a nasal-clearing coolness. One of the best-known soaps in America, Zest, owes a great deal of its fresh clean impression to the use of l-carvone (<1.0%). Another popular soap, Dove, contains geranium (>3.0%) to yield its fresh, clean, rosy signature. Noxema Cream perfume contains menthol (>2.0%) and eucalyptol (>7.0%). These

Table III. Mint-like raw materials outside the Labiatae family

Raw material (species)	Form	Odor	Constituents	Uses	Aromatherapy	Distribution	Similar odor
geranium (<i>Pelargonium graveolens</i>)	essential oil, absolute	minty, rosy, herbaceous	isomenthone, menthone	widely used for all types of perfumes	stress reduction	Réunion Island, Egypt and China	none
wintergreens (<i>Gaultheria procumbens</i>)	essential oil	minty, sweet	methyl salicylate	household product perfumes	none	North America	none
tarragon (<i>Artemisia</i>)	essential oil	fresh, spicy	methyl chavicol, cineol	fine-fragrance perfumes	rarely used	Europe; particularly France	basil
black currant (<i>Ribes nigrum</i>)	absolute	pungent, minty, sulfurous	menthone	fine-fragrance perfumes	not known	Europe	buchu
buchu (<i>Agothosma betulina</i>)	essential oil	pungent, minty, sulfurous	menthone	fine-fragrance perfumes and fruit notes	none	South Africa	black currant

materials provide the clean, cool, almost medicated impression that is so important to this product.

We can see from this brief overview how important the mint character is to these perfumes. In all these cases, the fragrance impression would be diminished or lost if mint notes were not employed.

Fine fragrances: In the fine-fragrances category, the mints can provide a wide range of characteristics—from the bracing coolness required in after shaves to the subtle natural freshness and complexity in the top note of

men's and women's colognes. Among the after shaves, Skin Bracer has geranium (>1.0%) and menthol (>2.0%) to provide cooling freshness. The menthol (>2.0%) in Aqua Velva does the same job.

Mint notes have been used in men's colognes for many years. Brut's fresh, herbaceous character is enhanced by the use of geranium (>9.0%). Jovan even launched a men's fragrance called Glacier in which the cool, icy character was provided through the use of peppermint oil.

Ralph Lauren's first men's cologne, Polo, contains spearmint oil (<0.5%) to provide a natural freshness to complement the other herbaceous notes present. Four years ago, Lauren launched Polo Sport, where the minty character was clearly noticeable in the top note. In this instance, both peppermint oil (<0.5%) and spearmint oil (<0.5%) were used.

Tommy by Tommy Hilfinger, launched in 1995, contains spearmint oil (>0.5%) to provide freshness and complexity in the top note. Davidoff's Cool Water is a major success in Europe as well as in the U.S. This popular fragrance employs spearmint oil (<0.5%) to help provide the natural character in its top note. In 1997, Jean Patou launched Lacoste Booster, whose invigorating fresh top note was achieved by the use of peppermint oil, menthol and eucalyptol.

Mint notes are also used in women's colognes. One of the first examples of their use was Blue Grass. This perfume em-

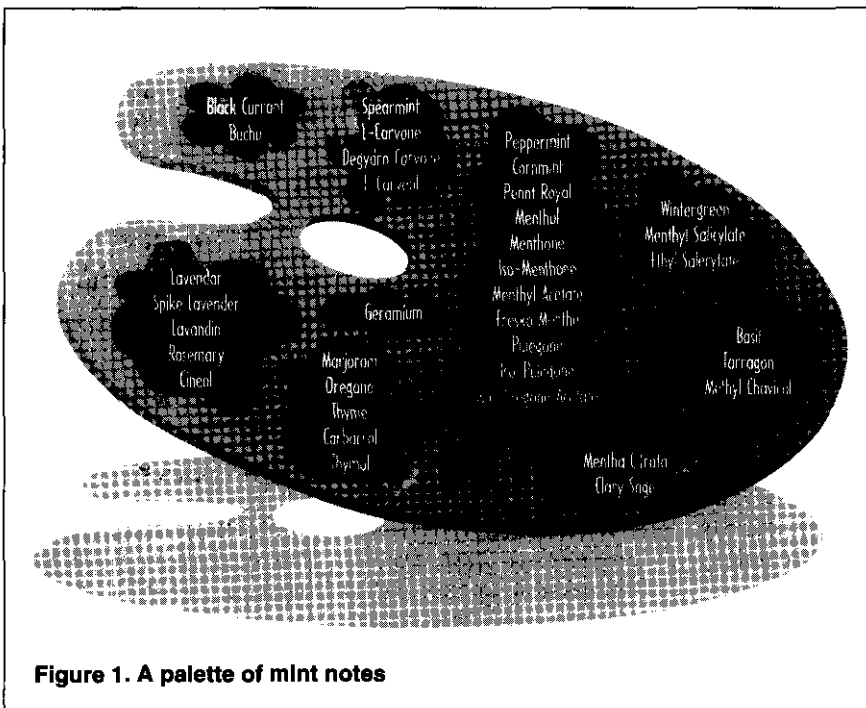


Figure 1. A palette of mint notes

THE MINT NOTE IN PERFUMERY

Table IV. Mint-scented chemicals

Chemical	Odor	Found in nature	Uses	Similar odor
menthol	minty, cool fresh	peppermint, cornmint, spearmint	wide range of perfumes for household products to fine fragrances	menthone, menthyl acetate, isomenthone, Freskomenthe, ^a pulegone, isopulegol, isopulegyl acetate
menthone	minty, cool, fresh	pennyroyal, black currant, buchu, cornmint, peppermint, spearmint, geranium	perfumes for household products and personal-care products	menthol, menthyl acetate, isomenthone, Freskomenthe, pulegone, isopulegol, isopulegyl acetate
isomenthone	minty, fresh, cool	cornmint, pennyroyal, geranium	perfumes for household products and personal-care products	menthol, menthone, menthyl acetate, Freskomenthe, pulegone, isopulegol, isopulegyl acetate
menthyl acetate	minty, herbaceous, fresh	cornmint, peppermint	perfumes for household products and personal-care products	menthol, menthone, Freskomenthe, pulegone, isopulegol, isopulegyl acetate
2-sec-butylcyclohexanone	minty, cool, fresh	no	perfumes for household products and personal-care products	menthol, menthyl acetate, isomenthone, pulegone, isopulegol, isopulegyl acetate
pulegone	minty, herbaceous	pennyroyal, peppermint, spearmint	perfumes for household products and personal-care products	menthol, menthone, menthyl acetate, isomenthone, Freskomenthe, isopulegol, isopulegyl acetate
isopulegol	minty, herbaceous	pennyroyal	perfumes for household products and personal-care products	menthol, menthone, menthyl acetate, isomenthone, Freskomenthe, pulegol, isopulegyl acetate
isopulegyl acetate	minty, green, fresh	pennyroyal	perfumes for household products and personal-care products	menthol, menthone, menthyl acetate, isomenthone, Freskomenthe, pulegone, isopulegol
l-carvone	minty, herbaceous, spicy	spearmint	perfumes for household products and personal-care products	dihydro carvone, l-carveol
dihydro carvone	minty, herbaceous	spearmint	perfumes for household products and personal-care products	l-carvone, l-carveol
l-carveol	minty, herbaceous	spearmint	perfumes for household products and personal-care products	l-carvone, dihydro carvone
methyl salicylate	minty, cool, sweet	wintergreen	perfumes for household products and personal-care products	ethyl salicylate
ethyl salicylate	minty, cool, sweet	fruits and flowers	perfumes for household products and personal-care products	methyl salicylate

^a Freskomenthe (2-secbutylcyclohexanone) is a trade name of Givaudan-Roure

Table V. Mint-related chemicals

Chemical	Odor	Found in nature	Uses	Similar odor
cineol (Eucalyptol)	fresh, cool, camphoraceous	lavender, rosemary, majoram, peppermint, spearmint, basil, lavandin	perfumes for household products	none
carvacrol	herbaceous, medicinal, spicy	oregano, marjoram	perfumes for household products	thymol
thymol	herbaceous medicinal	thyme, oregano	perfumes for household products	carvacrol
methyl chavicol	herbaceous, sweet	tarragon, basil	widely used in all types of perfumes	none

plows spearmint oil (<0.5%) to complement the lavender that is present. Ambush owes part of its fresh floral character to the use of geranium oil (>3.0%), and Anais-Anais has spearmint oil (<0.5%) to add freshness to its floral top note.

A recent example of the use of mints in women's colognes is Polo Sport Women. In this case, the women's fragrance is related to its predecessor, Polo Sport for men. As a result, both spearmint oil and peppermint oil are used to provide a clean, fresh, sporty impression.

Recently in the fine-fragrance category we have seen a new class of fragrances—unisex fragrances. This class was started in the U.S. with the introduction of cK one and followed up last year with another Calvin Klein fragrance, cK be. In the case of the latter, menthol (<1.0%) was used to provide a fresh counterpoint to the heavy musk base notes.

As we can see, mint notes are quite important and are used quite extensively in the creation of fine fragrances.

The Future of Mint Notes

What can we expect of mint notes in the future? It is my belief that the use of mint notes in perfumes will increase.

In the 1990s, we have seen that it is acceptable to have a noticeable mint character in perfumes. This minty character conveys freshness, but also a natural, outdoors impression. This natural nuance has become quite important to consumers—not only in perfumes, but in flavors as well.

Since this trend should last—and thereby continue to influence perfumery—what better way to capture natural freshness than with mint notes.

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Suggested reading:

Compton's Living Encyclopedia, Compton's Learning Co (1996) (Online)
The Concise Columbia Encyclopedia, Columbia University Press (1994) (Online)
The Grolier Multimedia Encyclopedia, Grolier Interactive Inc (1996) (Online)
 J Lawless, *The Illustrated Encyclopedia Of Essential Oils*, New York: Barnes & Noble (1995)
Journal of Essential Oil Research, Carol Stream, Illinois: Allured Publishing Corp (1989-present)
Microsoft Encarta 96 Encyclopedia, Redmond, Washington: Microsoft Corp (1996)
 S Arctander, *Perfume and Flavor Chemicals*, vols I & II, Montclair, New Jersey: Steffen Arctander (1969)
 S Arctander, *Perfume and Flavor Materials of Natural Origin*, Carol Stream, Illinois: Allured Publishing Corp (1994)
Perfumer & Flavorist magazine, Allured Publishing Corp., Carol Stream, Illinois (1976-present)
 S Donaldson, *Scented Treasures*, Pownal, Vermont: Storey Communications, Inc (1995)
 JB Simpson, *Simpson's Contemporary Quotations*, New York, New York: Houghton Mifflin, Co (1988) *Uses: fine fragrance*

