



# 2,6-Dimethoxyphenol

Use in savory, brown and nut flavors,  
as well as alcoholic drinks

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**P**henolic notes are widespread throughout nature but are often peculiarly difficult to recreate realistically in flavors. The problem with most phenolic raw materials is that they are either too leathery or they are overly harsh and bear too close a resemblance to phenol itself. In nature, phenolic complexes exhibit a much more attractive, deeper and softer character.

2,6-Dimethoxyphenol (FEMA# 3137, CAS# 91-10-1; **F-1**) is probably the single phenol that is most responsible for this attractive character in nature. None of the alternative dimethoxyphenol configurations are as interesting. 3,4-Dimethoxyphenol (CAS# 2033-89-8) is more burnt in character but is quite useful in smoke and coffee flavors; 2,3-dimethoxyphenol (CAS# 5150-42-5) is quite soft and can be helpful in vanilla flavors; and 3,5-dimethoxyphenol (CAS# 500-99-2) is relatively harsh, but all are much less useful than 2,6-dimethoxyphenol.

4-Methyl-2,6-dimethoxyphenol (FEMA# 3704, CAS# 6638-05-

7), 4-ethyl-2,6-dimethoxyphenol (FEMA# 3671, CAS# 14059-92-8), 4-propyl-2,6-dimethoxyphenol (FEMA# 3729, CAS# 6766-82-1), 4-allyl-2,6-dimethoxyphenol (FEMA# 3655, CAS# 6627-88-9) and 4-propenyl-2,6-dimethoxyphenol (FEMA# 3728, CAS# 6635-22-9) all have positive and realistic characters similar to 2,6-dimethoxyphenol and can work well, especially in smoke flavors. Unfortunately, they are all much less cost-effective in use.

The dose rates given below are the levels of 2,6-dimethoxyphenol to be used in flavors that are intended to be dosed at 0.05% in a ready-to-drink taster, beverage or bouillon. They all assume the chemical is used alone, without other members of the same family.

## Savory Flavors

**Smoke:** 2,6-Dimethoxyphenol is the key ingredient in all good recreations of a range of different smoke profiles, but is especially reminiscent of oak smoke. Levels of use can be high, ranging from 1,000–5,000 ppm or even higher. An even better effect is achieved in smoke flavors if this ingredient is used in conjunction with 4-ethyl-2,6-dimethoxyphenol (at a similar level), but this improvement is at a significantly higher cost.

**Bacon:** Bacon flavors can easily tend to be overly harsh, and the smooth smoke character of this raw material works especially well to soften the taste.



One thousand to 5,000 ppm is a good use level range in flavors.

**Salmon:** Depending on the level of smoke flavor that is required, the levels of use range from 50–2,000 ppm. Low levels do not have a noticeable smoke effect but do significantly contribute to the seafood notes.

**Ham:** Ham flavors do not suffer from the harsh notes found in bacon flavors and levels of use vary with the quantity of smoke character that is desired. Levels from 50–1,000 ppm are typical in this type of flavor.

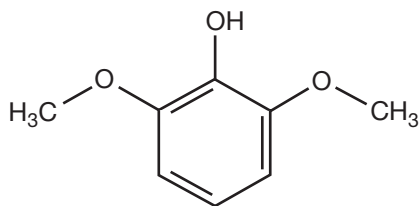
**Seafood:** All types of seafood flavors benefit from additions of 2,6-dimethoxyphenol, particularly shrimp flavors. Two hundred ppm is a good starting point.

**Chicken:** Levels in chicken flavors are generally much lower if they are intended simply to infer a cooked meat note, from 100 ppm, but higher levels are necessary if a specifically smoked chicken flavor is required.

**Soy sauce:** The typical fermented soy note of soy sauce is emphasized by additions in the region of 100 ppm in flavors.

2,6-Dimethoxyphenol

**F-1**



**Beef:** The same comments apply to roast beef flavors but to a slightly lesser extent; 50 ppm being a good starting level.

**Mushroom:** Low levels, around 30 ppm, add a hint of meaty character and depth to cooked or dried mushroom flavors. Porcini and truffle flavors in particular are helped by this ingredient.

## Brown Flavors

**Coffee:** Coffee flavors represent the single most useful outlet for 2,6-dimethoxyphenol. Even realistic coffee flavors suffer from an unpleasant ashtray note in heated applications, and this ingredient minimizes that character very effectively. High use levels, ranging from 2,000–8,000 ppm, are effective.

**Brown sugar:** This raw material is especially useful in brown sugar flavors, as well. Levels as low as 10 ppm are helpful to add realism to mild brown sugar flavors, and very much higher levels, up to 1,000 ppm, can be used in harsh molasses flavors to good effect without pushing the character in an overly smoky direction.

**Chocolate:** Quite subtle levels, around 50 ppm, add realism and depth to the gentle roasted note in cocoa and chocolate flavors.

**Vanilla:** Even lower levels, down to 10 ppm in flavors, perform a similar function in vanilla bean flavors.

**Black tea:** The 10 ppm level also works well in black and red tea flavors, adding a little depth to the dominant floral characters.

## Nut Flavors

**Sesame:** Roasted sesame flavors can be enhanced by 200–500 ppm of 2,6-dimethoxyphenol.

**Peanut:** Ten to 100 ppm in peanut flavors rounds out and softens the phenolic note and also adds depth.

**Hazelnut:** The same range of levels work well in hazelnut flavors, even though the roasted character is usually more subdued.

**Walnut:** Twenty ppm is more effective in walnut flavors, adding realism and deepening the character.

## Fruit Flavors

**Cranberry:** Cranberry flavors in particular are helped by the mild phenolic character of this ingredient and levels up to 500 ppm are effective.

**Banana:** The effect of 2,6-dimethoxyphenol in banana flavors is subtle, modifying the role of eugenol. Ten ppm works well.

**Pineapple:** Low levels, in the region of 5 ppm, add depth to pineapple flavors, even though the phenolic notes are not obviously evident.

**Blackberry:** Similar levels work in blackberry flavors, and add to the subtle skin notes.

**Cherry:** The same applies to cherry flavors, in particular black cherry flavors.

## Alcoholic Drink Flavors

**Rum:** Rum flavors often display an obvious smoke character, so here levels can range up to 500 ppm. Lower

levels are more appropriate in mild white rum flavors.

**Whiskey:** Whiskey flavors are not generally as overtly smoky as rum flavors, but they can have a strongly phenolic seaweed note, so the levels used can range up to 200 ppm.

**Red wine:** Higher levels, up to 50 ppm, add significantly to the skin character of red wine flavors and subtly enhance the effects of oak aging.

**White wine:** The same is true of white wine flavors, but the levels of use are more modest, generally ranging up to 20 ppm.

**Cognac:** Similar levels work in brandy and cognac flavors, though sometimes higher levels are needed in strongly oaky styles.

**Beer:** Quite subtle levels of 2,6-dimethoxyphenol, in the region of 2 ppm, add to the realism of beer flavors.

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