



# MADE SAFE



Making Products Safe. Keeping Families Healthy™.

## Natural & Artificial Flavors

“Flavor” seems simple on the surface, but it can actually be a complex mixture of ingredients. Made Safe has found that flavor can be as complex as [“fragrance.”](#) and can include thousands of additional ingredients, synthetic chemicals, and more. We hope to provide information so that shoppers can arm themselves with knowledge on how to approach flavor in products.

On labels you’ll see both “artificial flavor” and “natural flavor.” Natural flavors are foods that come from things found in nature, meaning they’re chemicals isolated and purified from plants and animals. Natural flavors can also contain [non-flavoring ingredients](#) like antioxidants, emulsifiers, and solvents. [According to the FDA](#), natural flavors are compounds “whose significant function in food is flavoring rather than nutritional.”

Artificial flavors are made of ingredients that appear chemically identical to naturally-occurring flavors, and can be combined with [non-flavoring ingredients](#) like emulsifiers, preservatives, and solvents. The [FDA defines artificial flavor](#) as “...any substance, the function of which is to impart flavor, which is not derived from” a plant or animal.

Natural flavors have to come from a plant or animal source, whereas artificial flavors are created in a lab. The outcome is two ingredients which can appear identical in chemical structure. However, it’s unknown if the body processes these two types of ingredients in the same way.

### What are flavors composed of?

Like fragrance formulations, flavor formulations can be made up of many unique chemical ingredients, usually between [20-60](#) but sometimes [more than 100](#); these flavors are called [compounded flavors](#). Flavor formulations also contain ingredients that are [not intended to provide taste](#), like emulsifiers, solvents, preservatives, flavor modifiers, and more. These ingredients are called “[adjuncts](#).” Most flavors typically contain less than 1% of flavoring ingredients; the remaining 99% is composed of adjuncts.

### Flavor

#### Problems

- Companies can keep flavor ingredients secret
- Can contain additives linked to human health harm
- Potential GMOs and synthetic biology ingredients
- "Natural flavor" may not be safer than "artificial flavor"

#### Safer Options

- Avoid umbrella terms like "natural flavor," "artificial flavor" and "flavor"
- Choose certified organic foods
- Shop MADE SAFE® certified products





Artificial flavor ingredients may be any of approximately 700 FDA-approved flavorings/additives categorized as Generally Regarded as Safe or “GRAS.” They can also be any of more than [2,000 other chemicals](#) regulated by the Flavor and Extract Manufacturers Association of the U.S. [Adjuvants can also reach GRAS status](#). Because of loose definitions, even [natural flavors can include synthetic ingredients](#) like carriers, solvents, and preservatives. However, [QAI](#) and [USDA](#) certified organic flavor ingredients are required to be made without synthetics.

Natural flavor does not mean that the [isolated compound](#) has to actually come from the ingredient it’s meant to taste like. For example, natural banana flavor could actually come from the bark or roots of a different plant containing a chemical that has a similar banana taste.

## How are flavor ingredients regulated?

The FDA generally regulates food ingredients. However, Congress also granted Flavor and Extract Manufacturers Association of the US (FEMA), [statutory authority](#) to make decisions about food ingredients with oversight by the FDA. FEMA is an [industry-funded organization](#) composed of paying members with a stake in the flavor industry (kind of like the [International Fragrance Association](#) of flavor).

All ingredients added to food are required to be approved before reaching the market, unless the additive has [GRAS status](#). Many food additives achieve GRAS status through a [provision created in 1958](#), which allowed “long established” safe foods and ingredients backed by “information generally available to scientists” to be deemed GRAS.

Later, the FDA confirmed that private parties (like companies and FEMA) can make GRAS decisions [without consulting the FDA](#). If the food ingredient is [regarded as safe](#) “among experts qualified by scientific training and experience to evaluate its safety,” the ingredient can be used. These experts are often [The Expert Panel of FEMA](#).

When the 1958 provision was created, it was intended that only “simple” and time-tested ingredients like olive oil, essential oils, etc., could sidestep the FDA approval process. However, now that provision is being used to grant GRAS status to complex flavor formulations. One organization estimates that [3,000 food additives](#) (preservatives and flavors) have achieved GRAS status through this [provision](#).

Some companies do choose to consult the FDA in order to make GRAS decisions about ingredients. However, even these companies often make decisions without actually considering the science of an ingredient, and then go on to use the ingredient regardless, even after the FDA had expressed concerns about [potential health hazards](#).

Even natural flavors can still contain [traces of synthetic ingredients](#) as a result of residual manufacturing inputs, because the FDA considers them “[incidental additives](#).” [There are no regulations regarding GMO flavors](#), so GMO ingredients can also end up in both natural and artificial flavor formulations.



## What are the concerns with flavor ingredients?

- Flavor ingredients are usually added to food at less than 1% of the final product. [A large percentage](#) of flavor ingredients are usually lost during manufacturing (as a result of heating, processing, etc.) and then remain in the food at parts per million. Although this is a small amount, some ingredients, like endocrine disruptors, can impact the body at parts per billion, which is a fraction of a percent.
- FDA-approved additives include ingredients harmful to human health and the environment, including lauric acid, mineral oil, nickel, acrylic acid resin, butylated hydroxytoluene, talc, polysorbates, [and so much more](#).
- Natural flavors might actually [require less safety testing than artificial flavoring](#), which means that natural flavors might not be any safer than artificial ingredients.
- Natural flavors can contain synthetic additives like preservatives, emulsifiers, solvents, adjuvants, and incidental additives that are not required to be listed on labels.
- Artificial flavor can contain synthetic ingredients – both synthetic flavoring agents and synthetic additives.
- Companies use the GRAS loophole, which allows them to deem ingredients as GRAS without running them by the FDA and instead asserting safety using their own company science or FEMA science.
- One of the primary organizations that affirms flavor safety, FEMA, has a stake in the flavor industry, which raises questions regarding objectivity and rigor of scientific testing. FEMA also lobbies for the interests of the flavor industry, meaning it could have influence over the policies which govern it. This could result in impartial policies that favor industry over shoppers.
- Some flavor ingredients are [potential synthetic biology ingredients](#). Often called GMO 2.0, synthetic biology ingredients are genetically engineered in ways that extend beyond GMO. Often in synthetic biology, an organism's DNA is essentially “written” from scratch. These ingredients have little safety research, but are nonetheless entering the marketplace quickly.
- Because of legislative loopholes, companies don't have to list every ingredient on the label and can just use umbrella terms like “natural flavor,” “artificial flavor,” and “flavor” instead. Without full ingredient disclosure, it's impossible to know which ingredients are within the product.

## How to avoid it

“Natural flavors” or “artificial flavors” appear on seemingly [every food label](#), and in some consumer products like sexual health and cosmetics. However, with some adjustments to your diet and a shift in shopping habits, you can avoid mystery flavors. Here's how:

- Avoid umbrella terms like “natural flavor,” “artificial flavor,” and “flavor.” Because companies don't have to list every ingredient on the label, it's impossible to know which ingredients are within the product.



- Don't assume "natural flavors" are better than artificial flavors. Because natural flavors can contain synthetic additives and might [require less safety testing than artificial flavoring](#), it is impossible to discern from a label if a natural flavor is actually completely derived from ingredients found in nature, and they might not be any safer.
- Choose certified organic foods. Certified organic flavors must meet stricter standards; for example, they cannot contain synthetic ingredients and cannot be GMO.
- Cutting out processed and packaged foods and replacing them with certified organic fruits, vegetables, and grains reduces your intake of flavor ingredients.
- Embrace cooking! Bring back the days of cooking from scratch with fresh, organic ingredients. With a little menu planning, strategic shopping, and meal prepping, you can eat nutritious and satisfying meals made in your own kitchen.
- Shop [MADE SAFE certified products](#) to make sure the flavors in your products are safe.

## How does Made Safe evaluate flavors?

Made Safe doesn't automatically accept or reject flavor ingredients based on whether they are artificial or natural. Instead, we evaluate the individual components of each flavor formulation, running them through our scientific and rigorous [MADE SAFE Screening Process](#). Certified products cannot contain known endocrine disruptors; high-risk pesticides; carcinogens; heavy metals; toxic VOCS; behavioral, developmental, reproductive, and neuro toxins; or ingredients found to be harmful to the environment.

Made Safe evaluates every ingredient individually, including flavor ingredients with GRAS status. We don't always permit FDA GRAS ingredients because some are known to impact human health. In many cases, we also analyze the manufacturing process in order to determine if there are any incidental additives. If there is not substantial information about an ingredient's safety, we exercise the precautionary principle, which means we don't permit it until further testing can prove it is safe. We apply this evaluation to every flavor ingredient, whether it's "natural" or "artificial."