

THE FLAVOR APPRENTICE

SHELF LIFE FLAVOR INFORMATION

Concentrated flavors do not spoil, or go rancid, like fruit juices can., so they do not really have an "expiration date".

But under certain conditions they can change.

In other words, you will notice that a "fresh" bottle might seem different from an older bottle.

Basically, what my flavor manufacturer tells me is that the flavors have a "best used by" life of at least nine months and often much longer, when they are not continuously opened and are stored in glass. It is not necessary to store them in the refrigerator, but I don't think that this would hurt them. But sometimes refrigeration can cause re-crystallization of flavors that have a lot of the crystals like ethyl maltol in them.

Here's some background.

Every concentrated flavor is a mixture of raw materials, and every flavor blend can act differently. For example flavors that have a vanilla characteristic are going to have slightly different storage capabilities than fruit flavors. Here's the reason.

Vanilla and caramel flavors are mostly made of large molecules like vanillin, ethyl vanillin , etc.

These molecules are not very volatile, and tend not to escape the bottle when you open it. They will be fairly stable. Fruit flavors, on the other hand, are made of much smaller molecules in general. Whenever you open a bottle, it's the lightest and smallest molecules that escape and reach your nose quickly. Over time when you open a bottle over and over again more and more proportion of these lighter molecules leave the bottle and eventually the character of the flavor will be changed. This doesn't mean the flavors spoiled, it's just different. So this is one piece of advice, if you are going to store a flavor for a long period of time, transfer the flavor to smaller bottles that will you will not have to open over and over again.

Also, when a flavor is warm, like if it's a hot day, when you open the bottle even more of the volatile molecules will escape; much more will escape than if the flavor was cool. This is true for all liquids, when liquids are heated the molecules are much more easily converted to their gaseous state. So in general it is a good idea to keep the flavor cool though refrigeration is not necessary.

Also, in general, it is best not to store these flavors long-term in soft (LDPE) plastic.

The plastic that we ship our 4 oz and 16oz sizes in is PET plastic, which is very resistant to interaction with the flavors.

When we bottle our 4oz and 16oz flavors, we nitrogen flush them, this means that we remove the oxygen from the bottle and then seal them.

This greatly extends the shelf life, when the flavor is not opened.

However, most of our customers open the bottles and oxygen gets in, and the flavors may start to change over time.

The recommendations about storing in plastic assumes the customer has opened the bottle.

Please know that it is not a good idea to store the flavors with plastic eyedropper caps on the bottles. The rubber that's used with the eyedroppers is extremely soft and interacts with a great many materials. If you try to store your flavors with these rubber dropper caps attached you will most likely ruin both the caps and the flavors.