

Shelf Life

In order to understand the shelf life of a particular oil you must first determine which category of *scented* oils the oil belongs to. So let us take a moment here to discuss these basic classes of oils.

1) Essential Oils: In the vernacular of the industry, true essential oils are those products that are the result of distillation. The methods used in the distillation process have a huge impact on the final quality of the essential oil. Distillation methods should be given close attention.

2) Citrus Oils: Oils derived from the fruits or the rinds of citrus fruits are cold pressed or expeller pressed, not distilled. They are commonly referred to as ‘essential oils’ all over the world, but in a technical sense they are not since they are not processed by distillation.

3) Absolutes: Oils extracted by chemical solvents, rather than distilled or expressed, are referred to as absolutes. The phrase ‘chemical solvents’ can make you think that someone has ‘messed up.’ This is not necessarily true and certainly not true of most solvents used to extract essential oils. To produce an oil with all of the properties that you value when working with jasmine, neroli, onycha oils, and some types of rose, solvents are necessary. The properties of the oils do not ‘pull’ any other way and the solvents used are ones that can then be removed most easily and completely. Additionally, the best medicinal properties of these plants would not survive the heat of the distillation process.

4) Carrier Blend Oils: Carrier oils are explained in some detail on pages 7 and 9 of this chapter. The oils referred to here are the ones which, by British standards and wording are called an ‘essential oil,’ but are really at least 95% carrier oil with the remaining 5% being pure therapeutic grade essential oil. This dramatically changes the properties of the oil and certainly impacts the shelf life of these ‘massage’ oils. The essential oil deteriorates until the healing properties are just not there and the carrier oil itself goes rancid after a short time.

The various categories of scented oils above are impacted differently by such things as heat, cold, light, and air. They also work differently in diffusers and when placed in water and have their own characteristics when absorbed into the body.

Heat

It is a basic law of chemistry that chemical changes, if a change is going to occur at all, happen faster at higher temperatures.

Distilled essential oils: When talking about the first category above—true essential oils—you do not need to be concerned at all if such oils are temporarily exposed to high temperatures, even up to the 140° F which is found in vehicles on a hot day. True essential oils are the product of distillation at higher temperatures than 140°. They are substances that were created by high temperatures. Each oil has a point at which the lightest components separate from the rest of the oil. However, when the bottle is returned to lower temperatures, these components condense, becoming liquid again, and then mix back into the rest of the oil with their chemical composition unaltered.

From a practical standpoint this means that if your pure distilled oils get too warm, leave the lids on until they have cooled back down. This separation of the lightest components is what makes steam inhalation of essential oils effective.

Storing the distilled category of oils at room temperatures is sufficient to preserve their quality. Storing these oils at cooler temperatures offers no advantages and does not increase shelf life.

Expressed citrus oils: Citrus oils can be damaged by temperatures in excess of 100° F. This sensitivity has a lot to do with the molecular size of some of the components. The larger the molecule the more likely it is to break down as temperatures rise. The plants used to make expressed oils produce molecules which are larger than those found in plants that are used for making distilled oils. The larger molecules have little or no fragrance in their complete, un-deteriorated state, but as they break down they produce a variety of smells, usually unpleasant. Both the fragrance and the therapeutic properties of citrus oils would be altered by the heat of the distillation process, so an expeller method is employed. This distinction also applies to all blends of essential oils with citrus ingredients. Having deeper note oils like sandalwood and myrrh included in the blend stabilizes the larger molecules of the citrus oils. Oils with deeper notes slow, and even prevent, this breaking down process. Expressed citrus oils include bergamot, grapefruit, lemon, lime, mandarin, orange, and tangerine. Citrus oils need to be stored at temperatures below 100° F. If they ever get too hot, let them cool before opening the bottle.

Absolutes: Absolutes are slightly more sensitive to heat than expressed citrus oils. It is best to keep them at cooler temperatures; at least no higher than normal room temperature. Absolutes have also not passed through the higher temperatures of distillation because they also contain some larger molecules that can be damaged and broken down by heat. For maximum quality you should read the labels of your blended oils and be aware of the categories of the oils contained in them. Or you can just make it a habit to keep all of your oils at no warmer than moderate room temperatures.

Carrier Oil Blends: These are carrier oils such as almond, coconut, or grapeseed, etc. with some of the other three categories of oils added to them. There is a lot of controversy here because there is a wide range of percentages being used around the world by otherwise reputable companies. There are those who claim that adding a little bit of carrier oil causes only an insignificant amount of damage and the trade-off for convenience and ease of application is worth it. I do not agree!! Logically, the reason citrus oils and absolutes break down is because of the larger molecules (proteins, amino acids, etc.). Adding proteins, etc. with even their larger molecules can only increase the rate of breakdown. While the addition of essential oils slows the break down of the molecules in the carrier oil (they do not smell rancid as quickly), the therapeutic properties of the essential oil are still altered as the larger molecules break down. There are studies that back this position up very soundly, but every day, practical experience with these diluted oils has been enough to convince me. It is best to keep your carrier oils separate and mix them together as you use them. The only possible reasons that I can see for the practice of mixing pure oils with carrier before the time of sale are: 1) that the oil would be a little easier to apply in a hurry over a large area and, 2) since carrier oils are cheaper than essential oils, more profit could be made by their sale. I believe that the profit factor is the bottom line here, since mixing as you use them is not that difficult or inconvenient.

Flames and Candles: The heat of a candle, flame, or heat ring is in excess of 300° F. This will be damaging to your essential oils of any type. Using heat to vaporize oils is said to cause the most volatile compounds to disperse into the air first with the heavier molecules dispersing later. Is this the problem? No. The volatile components of any oil always disperse into the air first anyway; heat just makes this more pronounced. To minimize this effect, try placing your oils in distilled water and then over the source of heat. Scentsy™ candles warmers work well if used in this way. Just leave out the wax, use distilled or spring water, and add your oils to the water. The problem is that heat destroys some of the therapeutic properties of the oil.

Cold

Even extremely cold temperatures do not damage the therapeutic properties of oils. They may become congealed, waxy, or even semi-solid. If your oils get cold, do not apply any heat to warm them up. Just keep the lids on and let them warm up gradually to room temperature. They will be just fine.

Light

Essential oils of any category (distilled, expressed, or absolute) should be stored in dark-colored bottles, in specially lined metal containers or in hard plastic of very specific specifications. Exposure to light causes the small molecules of an essential oil to polymerize. Polymerization means that the light sets in motion the processes by which the small molecules of the essential oil bind together to make larger molecules. Since it is the small molecular sizes that enable essential oils to penetrate tissues and enter cells as well as diffuse into the air, the creation of large molecules makes the oil less therapeutic in erratic ways. Put very simply, light will eventually destroy an essential oil by chemically altering it into a substance that is neither aromatic or therapeutic. A few minutes, or even a few hours, of exposure to light will not substantially alter the makeup of your oils; exposure to light over days, weeks, and months will destroy any essential oil.

Air

The most damaging thing that happens to an essential oil when it is exposed to air is the loss of the most volatile components, the high notes. Essential oil bottles for daily use are small in size and typically come with a dropper cap that minimizes the circulation of air into the bottle when the screw down top caps are off. Nevertheless, with most essential oils, you can smell the aroma of the oil the minute you remove the outer lid. Make it a habit to put the screw top lids back on each time you use an essential oil. Do not worry over much if they are off for a few minutes, while you are applying the oil, but do not leave a bottle open if you can avoid it. If you have removed the hard plastic, push-in applicator section of the cap, do not leave it open any longer than is absolutely necessary.

The second thing that happens to an oil through exposure to air for an extended period of time is that the oil begins to oxidize. Oxidation is the taking on of extra oxygen atoms by the molecules of the original substance. When this happens to metal you get rust. When this has happened to an essential oil, there will have been changes in the molecular structure and the compounds present in the oil.

Store essential oils intended for long-term storage in larger bottles with ordinary phenolic non-dropper caps. The bottles should not be opened every day. Use the larger bottles to refill the smaller bottles that you will use every day. Each time a bottle of essential oil is opened, the oil inside is exposed to light, air, and contaminants. For the best therapeutic quality and to keep the high notes intact, the lid needs to remain on the bottle as much as possible.

Water

Most of the components of essential oils do not mix well with water. They will either float or sink, but they will not mix in. This is only a problem if a drop of a strong oil comes in contact with some sensitive part of your anatomy. I use essential oils in the bath frequently. I love it and have had no serious incidents. I do believe that the frequency of the essential oil in the water creates a homeopathic effect, magnifying the best properties of the oil. Water is an amazing way to utilize the therapeutic properties of essential oils.

In summary, only people who are using adulterated, synthetic, or oils to which carrier oils have been added need worry about shelf life. Some references in the British school of thought recommend throwing away all your oils every six months and purchasing a fresh bunch. Such a recommendation may be appropriate for oils that are 95% carrier oil, but certainly does not apply to pure aromatic oils that were properly distilled. It does not even apply to expressed oils or absolutes. The fact is, that some oils actually improve with age if properly handled and stored.

Stored properly, the shelf life of pure essential oils is longer than is generally believed. Some oils found in the tombs of Egypt are still wonderfully viable. Remember, however, that oils are sensitive to the ingredients in cosmetics, soap, shampoos, etc. and can be damaged by light, air, and heat if not properly handled. They should also be stored away from electrical appliances.

Essential Oils and security Scanners

Will x-ray scans in an airport damage your essential oils? The answer is probably yes, but the damage will be minor and whatever damage occurs is easily repaired, and by the oils themselves.

Being subjected to x-rays and other high frequency electromagnetic energy is not a big problem for essential oils. What can happen in an oil is that a few molecules that took a direct hit may fracture into pieces. Fragmented molecules are called free radicals and, as we have been told, free radicals are not good things to have floating around in your body. Because they are unbalanced electrically they will grab up electrons and atoms from your tissues to complete their structures and bring them back to a balanced state. This process accelerates the aging process, damages organs and tissues, and sometimes causes cellular mutations that are the fore-runners of cancers. Your tissues and organs need their electrons and atoms! They don't need to become unbalanced themselves because fractured molecules are racing around scavenging from others to make themselves better balanced.

Percentage wise, in an oil, there will not be many damaged molecules from passing through an x-ray scanner. This is because essential oil molecules are small and have spaces between them, to begin with. And the atoms and electrons are in constant motion. It is like they are all traveling around the neighborhood, visiting, at high speeds. It is this 'traveling' that gives an oil its frequency. Only a few of these traveling molecules will take a direct hit.

Antioxidants are substances that remove free radicals from our bodies and neutralize their effects. Essential oils are among the best antioxidants. Some of them are nearly off-the-charts in their free radical removing capabilities. What this means to the damaged molecules of an x-rayed oil is that the broken-apart pieces, with the help of the undamaged molecules, will immediately begin to repair and rebuild themselves.

If you pass your oils through airport security, just give them a little time and they will repair themselves. I have always felt this (and the muscle test has consistently confirmed it). What an illustration that "God is in his heaven and all is right with the world." I find this an appropriate time for a prayer of petition and of gratitude. A little bit of love, gratitude, and prayer always improves essential oils.

Essential oils have the capability of repairing themselves and cleaning up free radicals within themselves, just like they clean up free radicals throughout your body and help to repair you!