

Candles and Fire Safety

Decorative and fragranced candles may be an attractive addition to your home décor, but if used improperly, they can be a serious fire hazard. According to the National Fire Protection Association Journal article, "Candle Fires on the Rise", residential fires caused by candles have more than doubled over the past decade.

In addition to being a fire hazard, improperly used candles can generate a significant amount of soot. This soot can damage the walls, floors and ceilings of your home as well as your personal belongings.

According to a 2001 pilot study of candle fires by the Consumer Product Safety Commission (CPSC), by far, most candle fires were caused by combustibles being too close to the candle. The next most common cause of candle fires was due to the candle falling over or being knocked over by wind, doors, children or pets.

Safety Tips

- Keep candles a minimum of 1 foot, in all directions, from flammable and combustible items such as curtains or bedding. Make sure curtains cannot be blown over the candle by wind.
- Place candles on secure furniture and out of the reach of children and pets.
- Only burn candles while under constant adult supervision.
- Keep matches and lighters out of the reach of children.
- Trim wicks prior to each use to within ¼-inch from the top of the candle.
- Extinguish the flame if it burns too close to the container side.
- Place burning candles away from drafts and vents.
- Do not allow candles to burn down to the bottom of their container. Stick candles should not be allowed to burn down below 2 inches from their holder.
- Extinguish all candles before leaving the house or when going to bed.
- Avoid burning candles for more than four hours at a time.
- Avoid walking while holding a burning candle. Do not move a glass container when the wax is liquid.
- Use a flashlight rather than a candle during power outages.
- Do not use a candle for light when fueling equipment such as a kerosene heater or lantern as the flame may ignite the fuel vapors.
- Secure candles in holders made of glass, ceramic, metal or other noncombustible material.
- Avoid using candles that have combustible materials embedded in them.

Take special precaution with gel candles

Gel candles have become increasingly popular because of their beauty and long-burning characteristics. An eight-ounce gel candle will burn 100 hours or more, increasing the risk for injury and fire beyond that of regular candles.

The concern about gel candles is not so much with the gel itself, but rather with the:

- Type of wick used
- Container the candle is set in
- Embedding of combustible materials in the gel
- Amount of fragrance added to the gel

Wicks

Cotton and paper-cored wicks are generally not used in gel candles because of their tendency to sag or lean over during the manufacturing and burning process. Zinc-cored wicks are used because of their ability to stand straight in the hot gel during both manufacturing and burning.

Wick length and placement are important for candle safety. Wicks should be trimmed to ¼ inch above the gel surface. Long wicks create a very tall flame that burns in an irregular pattern. If the wick is not placed properly, it causes localized overheating of the container and a liquid pool of hot wax or gel. Such conditions can cause uneven temperature dissipation and possible cracking of the container.

Containers

Containers should not be combustible, such as plastic or wood. Gel candles can be created in almost any type of glassware as long as it can withstand heat. Gel works best in containers between 2 and 3 inches in diameter, and is not recommended for use in containers over 4 inches in diameter.

Glass containers with narrow mouths are not recommended due to the closer proximity of the flame to the wall of the container.

Embedded Objects

Combustible materials such as wood and plastic should never be embedded into a gel candle. Only non-combustible materials, such as glass marbles, rocks or shells, should be used.

Fragrance

Fragrance in gel candles plays a significant role in the safety of these types of candles and has been a major factor in candle fires. The fragrance needs to be compatible with the solubility of the gel. There are fragrances that are formulated specifically for gel candles. The most important factor in the fragrance selection is the flashpoint, or the temperature at which a material ignites. Most fragrances have flashpoints of 140°F and higher. A preferred fragrance flashpoint would be 170°F or higher.

Many candles have been recalled due to the fire hazard created by their design. To see what products have been recalled, go to the [CPSC website](#). Use their search page and look for candle recalls.