

Fact Sheet



Commercial or Residential Kitchens – The Most Flammable Cooking Items in Your Kitchen.

A Guide for Commercial and Residential Kitchen Safety for Chefs, Cooks, Managers and Staff.

Be Careful of the Most Common Flammable Items in Your Kitchen.

Common Flammable Ingredients

Flour, sugar, oils, cooking alcohols, milk, and creamer all serve as base ingredients for several different dishes. Each ingredient is flammable in a different way and needs to be handled properly.



Flour

Powdered goods like flour consist of fine particles that can easily burn if added to a hot pan without anything else in it. If flour spills into direct flame, it can ignite. Due to flour being a carbohydrate, flour is even more explosive when it is mixed with the air. When exposed to a spark or flame, the mix of flour and oxygen can cause explosions. In fact, flour dust *caused a Minnesota mill to explode* in

1878. Similar *explosions are reported every year.*



Sugar

Sugar is a carbohydrate much like flour, and it's flammable for the exact same scientific reasons. When sugar gets hot enough, it can ignite. When cooking sugar, keep close watch on it. If you're cooking sugar by itself, pay special attention because it can self-ignite when it is not mixed with other ingredients. A great example of flammable sugar

that we are all aware of is marshmallows.



Cooking Oil

Cooking oils are highly flammable and can be hazardous if not used properly. Oils vary on smoke and flash point and it's key to know the difference between each one. A flashpoint is the temperature at which an oil creates flammable vapors that when exposed to heat can cause a fire. For most cooking oils, the

flashpoint is around 600° F.

A smoke point is when an oil becomes too hot and starts to smoke. In this case, you should immediately remove the oil from the heated surface. Peanut oil, safflower oil, and soybean oil all have a smoke point of 450°F. Other smoke points include 445°F for grapeseed oil, 435°F for canola oil, and 410°F for corn oil, olive oil, and sesame seed oil.

OIL SMOKE POINTS		
Peanut Oil 450°F	Safflower Oil 450°F	Soybean Oil 450°F
Grapeseed Oil 445°F	Canola Oil 435°F	Corn Oil 410°F
Olive Oil 410°F	Sesame Seed Oil 410°F	Sunflower Oil 390°F

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Marsala Wine or Sherry



All alcohol-based cooking sauces like Marsala or sherry are flammable because of the small amounts of alcohol they contain. They can have flammable vapors as well, so it is good to be cautious when using these around flame. Bottles should never be left near the stove because if they

get hot enough, the entire bottle could explode.



Non-Dairy Milk and Creamer

Non-dairy milk and creamer are often used as a substitute in dishes where milk and creamer are required. These ingredients often come in powder form and as such they have the same ignition properties as flour and sugar. Non-dairy creamer also contains sodium aluminosilicate which can burn when exposed to heat or fire.



Flammable Seasonings and Garnishes

Common seasonings such as garlic or cinnamon and garnishes such as orange shavings can catch fire under the right conditions.

Cinnamon

Cinnamon contains cinnamaldehyde and eugenol. Aside from giving cinnamon its unique flavor and odor, these compounds are also flammable. Much like flour, cinnamon can cause an explosion if too much of it gets into the air and ignites.

Garlic

Garlic contains a lot of oil, so it burns very quickly when exposed to heat or fire. This quick-burning effect can cause cooking oil to splash out of the pan and ignite on the burner. When cooking garlic, keep your heat low and cook it slowly to reduce the chance of splatter.

Orange Shavings

Orange shavings are a handy garnish. However, when squeezed they produce limonene, a flammable substance found in the rinds of oranges, lemons, and other citrus fruits.

Is Meat Flammable?



It may not be the first thing that comes to mind, but meat can be highly flammable. Meat that has a high overall fat content releases grease as it cooks.

Grease fires are a common kitchen hazard that are resistant to water. High-fat meats include duck, bacon, and pork.

Turkey constitutes its own note due to cooking methods. Frying turkeys has become a very common method of preparation.

However, improper cooking is very dangerous. Dropping a frozen turkey into boiling oil *can cause flames up to 10 feet high!*

The National Fire Protection Association reported that every year *deep fryer accidents* are responsible for five deaths, 60 injuries, the destruction of 900 homes, and more than \$15-million in property damage. To fry a turkey safely, thaw it out, don't use too much oil, don't overheat your oil (over 350 degrees), and always cook outside.

Flammable Snacks

Snack foods can also be fire hazards. Snack chips are surprisingly a very good fuel source. Chips such as Doritos, Cheetos, and other common types all are quite flammable. Chips like these are *fatty foods and hydrocarbons*, both of which burn readily. Microwave popcorn catching fire in the microwave is also not unheard of.

Flammable Kitchen Equipment

Common kitchen equipment you use every day can easily catch fire too. Many oven mitts are flame resistant, but not fireproof. A flame-resistant mitt can resist heat better than a non-flame-resistant one, but it can still catch fire. Towels that you use for cleanup or wiping can easily catch fire. Also, wooden spoons should be kept away from heat sources or open flames as well.

Preventing Kitchen Fires

Many of the common ingredients and tools you use in the kitchen have a chance of catching fire if you don't practice safe cooking techniques. Always pay attention to your cooking, keep tools and ingredients in safe locations, and keep things organized. Most importantly, keep a *fire extinguisher* handy in case of emergencies.

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