A Guide to Cooking with Fats and Oils

Some fats and oils can be used when cooking over high temperatures, while some are better suited for use over low or no heat. The following guide lists preferred cooking oils, their smoke points, and their best uses. The smoke point of a fat or oil is the temperature at which the oil will burn and become damaged. Smoke points for a fat or oil can vary depending on the quality and variety of the source ingredients, and on whether the fat or oil has been refined. It's important to not exceed a fat or oil's smoke point when cooking.

Fat/Oil	Smoke Point (Unrefined/Refined)	Best Uses	Notes
Avocado oil	520°F	High-heat cooking, low-heat cooking, dressing, finishing	
Butter, ghee	300/480°F	High-heat cooking, baking	Ghee is butter with the animal solids removed. Some people who are sensitive to dairy may not be sensitive to ghee.
Coconut oil	350/450°F	High-heat cooking, sautéing, baking	Coconut oil is solid at room temperature. If it sold as a liquid, it has been blended with another oil.
Duck fat	375°F	High-heat cooking	
Lard (pork, bacon fat)	375°F	High-heat cooking	Source should be pasture-raised, sustainably-raised, and organic.
Macadamia nut oil	410°F	Low-heat cooking, dressing, finishing	
Olive oil	320/465°F	High-heat cooking, low-heat cooking, dressing, finishing	Olive oil will lose its flavor if heated too high.
Peanut oil	230/450°F	High-heat cooking	Easily damaged, prone to rancidity.
Rice bran oil	415°F	Low-heat cooking	
Sesame oil	450°F	Dressing, finishing	Sesame oil has a high antioxidant content.
Tallow (beef fat)	400°F	High-heat cooking	
Walnut	400°F	Dressing, finishing	

What About Other Fats and Oils?

Most of the fats and oils listed below have high smoke points and seem safe for cooking, but these fats and oils undergo heavy processing. These processing methods counteract any potential health benefits. These fats and oils are also high in omega-6 fatty acids, which can contribute to chronic inflammation in the body. Because of this, regularly consuming fats and oils from this list is not recommended. If you do consume these fats and oils, be sure to choose brands that are certified organic and made from non-GMO crops.

- Canola oil (rapeseed oil)
- Corn oil
- Cottonseed oil
- Grapeseed oil
- Safflower oil
- Soybean oil
- Sunflower oil
- Vegetable shortening

What Does It All Mean?

There are many different ways to describe oils, and deciphering food labels with these different words can be confusing. Some common descriptors found on packaging include the following:

Refined	Oils that are extracted and treated with heat or chemicals in order to remove flaws. This process can also destroy the beneficial properties of oils. Refined oils are generally more stable than unrefined oils, so they are better choices for most high-heat cooking and baking. "Light" oils are examples of refined oils.
Unrefined	Oils that are made from cold-pressed source ingredients, and are never treated with chemicals or heat. These oils retain all of the minerals, enzymes, vitamins, and phytonutrients of the source ingredient. Virgin and extra-virgin oils fall under this category.
Extra-Virgin	Oils that are unrefined and cold-pressed, and are generally from the first pressing of the source ingredient. These oils can be fragile, so they should be reserved for dressing, drizzling, and dipping. Note that olive oils must meet specific requirements for acidity in order to be labeled as "extra-virgin."
Virgin	Oils that are unrefined and cold-pressed, and are generally from the second pressing of the source ingredient. These oils are also fragile and should be reserved for low-heat cooking, dressing, and drizzling. Virgin oils must pass standards for taste and quality, but the standards are not as rigid as those for the "extra-virgin" qualification.
Pure	Oils that are a blend of refined and unrefined oils. All of the oil comes from a first pressing, but some of the batches of oil may be treated with chemicals or heat to remove impurities before bottling.
Cold-Pressed	Oils that are extracted from their source using pressure only. Chemicals and heat are not used in this process. This helps the oils retain all of the nutritional benefits of the source ingredient.

Tips for Buying and Storing Cooking Fats and Oils

Fats and oils can become damaged by contact with light, heat, air, or plastics. Many fats and oils sold in grocery stores are poorly packaged, which increases the risk that the fat will be damaged before you consume it. In order to maximize the health benefits of fats and oils, and help you make sure you're consuming high-quality products, follow the list of tips below.

DO	DO NOT
Purchase oils that are packaged in dark glass bottles.	Purchase oils that are packaged in plastic containers.
Purchase oils that are packaged in containers with a tight-fitting lid or seal.	Purchase oils that are packaged in containers with a loose-fitting lid or seal.
Store your fats and oils away from the stove and other heat sources.	Store your fats and oils next to the stove, oven, microwave, or other heat source.
Store your fats and oils in a dark place.	Store your fats and oils in a place that gets a lot of artificial or natural light.
Measure and separate cooking fats and oils from their containers before placing them in a hot pan.	Pour oils directly into the pan from the bottle or container. The heat or steam from the pan can damage the oil in the bottle.

References

1. Brown A. Smoke Point of Selected Frying Fats and Oils. Understanding Food: Principles and Preparation 2nd ed. Belmont, CA: Wadsworth; 2004
2. Katragadda H, Fullana A, Sidhu S, Carbonell-Barrachina A. Emissions of volatile aldehydes from heated cooking oils. Food Chemistry. 2010; 120(1):59–65. doi.org/10.1016/j.foodchem.2009.09.070

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