Cooking Oil Smoke Points and Uses

When heated oil begins to smoke, it has reached its smoke point. Flavors begin to degrade and can add an acrid taste to the food. Smoke production can cause oil to discolor and release acrolein, a substance harmful to lung health with repeated exposure. The smoke point temperatures provided below are common smoke points that can vary based on oil quality and processing.

A key measure of a healthier fat is higher levels of monounsaturated fats which means lower oxidation levels from exposure to air, light and heat. Another measure is alpha-linolenic acid, an essential fatty acid that converts, at low levels, to EPA & DHA (omega-3 fatty acids).

Refined Oils: Have high smoke points due to processing that removes desired and undesirable components.

Flavor: Mild or bland
Temperature Ranges: 400°F -520°F
Best uses: High heat purposes: frying, sauté, stir-fry, grilling and searing.

Types of Fats					
Oils	**Saturated**	**Monounsaturated**	**Polyunsaturated**	**Polyunsaturated Alpha-linolenic acids**	**Smoke Point**
Almond	9%	65%		26%	495°F
Apricot Kernel	6%	64%		30%	495°F
Avocado	20%	70%		10%	520°F
Canola	6%	60%	24%	10%	460°F
Coconut	92%		6%	2%	450°F
Grape Seed	12%	17%		71%	485°F
Palm	50%	40%		10%	450°F
Peanut	19%	51%		30%	450°F
Pomace Oil*	14%	79%		7%	460°F
Rice Bran	19%	42%	38%	1%	500°F
Safflower	8%	13%		79%	450°F
Sesame	13%	46%		41%	410°F
Sunflower	12%	19%		69%	450°F
Walnut	16%	28%	49%	5%	400°F

*Pomace oil: a low-grade refined oil from olive pulp. In Europe, it's not classified as "olive oil".

Chef Michele Redmond at thetasteworkshop.com Fatty acid data primarily via USDA composition data list

Unrefined Oils (Cold-pressed extracted oils): Unrefined oils have many healthy bioactive components, some of which contribute to the unique flavors of the oil. Some of these components cause oils to oxidize more quickly than refined oils which is why many unrefined oils smoke at lower temperatures.

Flavor: Mild or strong flavors from the source nut, seed, legume or fruit

Temperature Range: 225°F – 320°F with a few exceptions

Best Uses: light sauté, low-heat baking, sauces, marinades and salads and dips

Types of Fats					
Oils	**Saturated**	**Monounsaturated**	**Polyunsaturated**	**Polyunsaturated Alpha-linolenic acid**	**Smoke Point**
Canola	6%	60%	24%	10%	225°F
Coconut, virgin	92%	6%	2%		350°F
Corn	13%	27%	60%		320°F
Flax seed	9%	18%	16%	57%	225°F
Grape Seed	12%	17%	71%		420°F
Olive oil extra virgin	10%	82%	8%		350°F
Peanut	19%	51%	30%		320°F
Pumpkin Seed	9%	34%	42%	15%	225°F
Safflower	8%	13%	79%		225°F
Sesame	13%	46%	41%		350°F
Soy	14%	28%	50%	8%	320°F
Sunflower	12%	19%	69%		225°F
Walnut	16%	28%	49%	5%	320°F

Smoke Points for Animal-based Products:
Butter: 300-350°F
Clarified butter: 375-425°F
Ghee: 485°F Depend on purity/age
Duck fat: 375°F/190°C
Chicken fat (schmaltz): 375°F/190°C