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KNOW YOUR COOKWARE

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Knowing the types and characteristics of materials available should help guide you in cookware selection. No single material has all the advantages and each has some limitations, as you will note in the chart on the following pages of this publication. Read through the chart and choose the material which best meets your needs. Then consider such additional factors as coatings and finishes.

COATINGS AND FINISHES

The attractiveness and function of many materials are improved by adding a finish, either a surface coating or a process applied to the base material. Finishes may be applied to prevent rusting and to make the utensil easier to clean and care for. Some cookware has one finish on the exterior and another on the interior.

Mechanical Finishes

- **Polished** — Helps reflect heat; produces a light surface crust. Used on cookie sheets, biscuit and cake pans.
- **Satin** — A dull finish to improve heat absorption; used for bread and pie pans.
- **Hammered** — A surface denting to give a pebbled appearance. Can collect soil and be more difficult to clean.

Applied Finishes

- **Aluminum or copper** — Sometimes applied to stainless steel to improve heat conduction.
- **Anodized** — A process by which the natural oxide film of aluminum is increased electro-chemically to give it non-oxidizing finish. The film can be

died to give a colored surface. Anodized aluminum heats faster and absorbs heat to produce brown crust on bake goods.

Porcelain Enamel

- A glassy inorganic material bonded to a metal at very high temperatures. It is unaffected by high temperatures and resists staining, scratching and fading, and interaction with foods and detergents. Usually colorful, it is used on both outside and inside cookware items. Porcelain can chip and on steel may crack with rapid heat change. It should not be scoured.

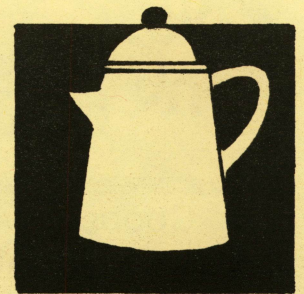
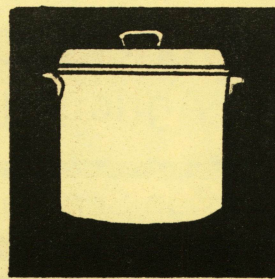
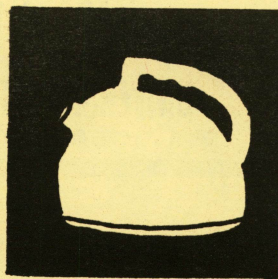
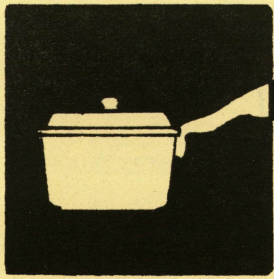
Acrylic and Polyamide

- These finishes are used on the exterior of some inexpensive pots and pans. They look like porcelain but are generally thinner. Dishwasher safe, they are chip resistant but will scratch and stain easily.

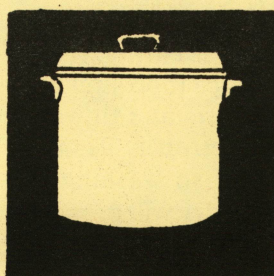
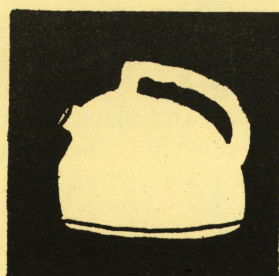
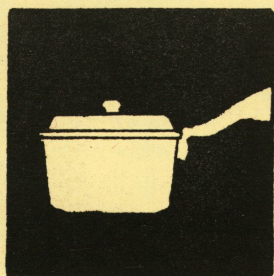
Non-stick Finishes

- These might be resins, silicone or fluorocarbons bonded to the metal at high temperatures. The more recent methods of application produce surfaces that are more resistant to scratching and flaking than the earlier ones. The three-coat applications are the most durable and the most expensive. This surface will not react with foods and produces easy release baking. When this kind of pan is seasoned according to directions and occasionally rubbed with salad oil, fat-free cooking is possible. Too-high heat, sharp metal utensils, steel wool and even careless stacking can damage the surface. These finishes clean easily with soap and water and are dishwasher safe.

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Material	Advantages	Limitations	Proper Care
Aluminum (cast)	Even and quick heat conductor. No hot spots. Will not rust. Good for large pots since it is lightweight.	Discolors from alkaline foods and hard water. May pit from salt, hard water or food left in pan. Scratches easily. Difficult to clean.	Wash in mild soap and dry thoroughly to prevent pitting. May need seasoning. Dishwasher detergents can discolor. To clean, boil in a solution of 3 Tbsp. vinegar to 1 quart water.
Aluminum (sheet)	Quick and even heat conductor. Light weight and durable. Will not rust.	Warp, buckles and dents easily. Discolors. Scratches easily. Acid foods release oxides (harmless) that make pans shiny but impart a metallic taste and can turn white sauces grey.	High heat may warp. Scour with fine abrasive to clean.
Cast iron	Heats evenly. Holds heat well. Durable. Inexpensive. Can add nutrition to food.	Heavy. Brittle, may crack. Tends to rust if not cared for. Heats slowly. May give foods a metallic taste and may absorb strong flavors. (No health hazard.)	Season well before using, Hand dry thoroughly. Strong detergents and acid foods may cause pitting.
Copper	Fast heat conductor. Uniform heat conductor. Usually lined with another metal such as tin, stainless steel, silver or fluorocarbon, or clad to the bottom of stainless steel to improve conduction. Attractive appearance.	Expensive. Utensils may be lined; if food stands in copper it causes serious stomach upset. Scratches easily. Discolors quickly.	May be cleaned with a salt and vinegar solution (10% salt) and polished with a mixture of flour and vinegar.
Glass (flame proof and heat resistant)	Easy to clean. Not affected by food alkalis and acids. Can be expensive. Absorbs and holds heat well.	Breaks easily. Shatters under impact. Sudden temperature changes may cause breakage. Heats slowly and unevenly.	Avoid harsh abrasives that may scratch the surface. Soak in hot soapy water with baking soda.



Material	Advantages	Limitations	Proper Care
Glass (ceramic)	Withstands extreme temperature changes. Retains heat. Durable. Good contact with heating surface.	Heats slowly. Heats unevenly. Foods tend to stick when high heat is used.	Soapy water with baking soda.
Magnalite	Even heat conductor. Quick heat conductor. Holds heat well. Light and durable. Easy to clean.	Scratches slightly. Expensive. Discolors with hard water.	Follow manufacturer's directions for care and use.
Pottery	Holds heat well. Easy to clean.	Cannot withstand sudden changes in temperature. Performs better for ovenware than surface cooking.	Do not place a pottery piece on a cold surface. Follow manufacturer's care instructions.
Stainless steel	Easy to clean — will not scratch with scouring pad. Extremely durable. Rustproof. Not affected by acid or alkaline foods.	Shows water marks. Heats slowly and unevenly. Dry or high heat may cause hot spots. If pan stains (from heat) these are difficult to remove.	Cleans easily with soap and water. Dishwasher safe. May waterspot.
Copper or aluminum clad or core	Combines good qualities of copper or aluminum with steel. Efficient heating.	Copper bottoms difficult to keep shiny and clean. Extreme heat may cause hot spots.	Clean with salt and vinegar or copper cleaner. Do not brighten: copper heats better when left dull.
Tinware	Satisfactory for oven use. Reflects oven heat when shiny. Absorbs heat when darkened. Light weight.	Rusts easily. Scratches easily. Darkens with use. Dents easily. Acids may create flavor changes (harmless).	Clean with baking soda or washing soda. Abrasive cleansers or scouring pads may cut through the tin.

SEASONING

Seasoning, sometimes referred to as curing, is the process of coating the metal to reduce food sticking and rusting. Ironware, cast aluminum and tinware may need seasoning. Today's cast iron is usually pre-seasoned by the manufacturer, so washing in hot soapy water, rinsing and wiping dry will prepare

it for use. Frequently, iron will need reseasoning after washing. The process is:

Scour thoroughly. Wash in hot soapy water, rinse and wipe dry. Coat the inside surface with unsalted fat or oil and place in 350° oven for about an hour. Remove, wipe off excess grease and store without the lid in a dry cupboard. Never put iron in the dishwasher.

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