Fante's practical guide on how to choose, use, and care for pots and pans!

HOW TO CHOOSE THE RIGHT SHAPE

~ Matching the Pan to the Task ~

FRYING - SAUCE - OVEN - STOCK
DOUBLE BOILER - PRESSURE COOKER
STEAMER - BAKER - ROASTER - WOK

Although many utensils can have several uses, some are specifically better than others for certain tasks. For example, you could fry foods at the bottom of a sauce pan, but the high sides of a sauce pan make it difficult to gain easy access to the food for lifting, turning, and so forth. Following are descriptions and accepted standard uses for various utensils.

FRYING

A **frying pan** is usually one to two-and-a-half inches deep. It has gently sloping sides, for easy turning and removal of food, and a long handle for better handling. It is used to cook foods that need to be close to the heat source. It is also called an **omelet** pan or a **skillet**. Pancake or **crepe** pans are differentiated by their very low sides, allowing for quick, easy removal of flat foods.

A **deep fryer** is a sauce pan with a removable basket; oil or fat is placed in the pan and the food in the basket, so that it can be easily dipped in and quickly removed from the hot oil.

The term **sautè**, meaning **to jump**, implies frying quickly. As such, a **sautè pan** shares some of the attributes of a frying pan, except that its bottom is flat, and its sides are straight and deeper (up to four inches), allowing the food to be in more direct contact with the heat source so that cooking is quicker.

It is excellent for reductions in that the large surface area permits lots of evaporation, leaving a thicker, more intense sauce. And it permits you to add lots more food as you cook, since it accommodates much more than a fry pan. In larger capacity sizes, it may be called a **brazier** pan or **chicken fryer** and can be similar to a **dutch oven.**

A **griddle** is flat, and can have raised ridges to keep the food separated from the fat which drips to the bottom.

SAUCE

A **sauce pan** has myriad uses, from reheating foods to making delicate sauces. It usually has straight, or slightly sloping high sides four to seven inches tall, and a long handle. In sizes from about a pint to four quarts it is called a **sauce pan** Above four quarts, usually squat and with two loop handles, it is called a **sauce pot** Sauce pots can also be considered **dutch ovens** or **stewing pans**.

OVEN

A **dutch oven** or **french oven** is similar to a **sauce pot**, inasmuch as that it is squat and is made for use either on top of the stove or in the oven. Its main differentiating characteristic is that it must be able to contain a large piece of meat or a bird. In the smaller sizes it is sometimes called a **chicken fryer**. It is normally used with a lid, which will contain moisture and, if shaped properly, will help to baste the food contained in the pan.

STOCK

A **stock pot** is a tall, relatively narrow, yet capacious, utensil with straight sides, usually at least six quarts in capacity. It is used to cook very liquid foods that do not require being immediately next to the heat source; excellent for soups, pasta and large sauces which call for

minimal surface evaporation.

DOUBLE BOILER

This is a combination utensil, basically two sauce pans in one, whereby a smaller sauce pan is positioned inside a larger one that is partially filled with water. This **hot water bath**, rather than through direct heat contact, ensures that the food in the inside (top) pan is gently cooked without scorching. An essential for delicate sauces and chocolates. It is sometimes called **bain marie**.

PRESSURE COOKER

Because food cooks faster at higher temperatures, this cooking utensil works its magic by creating the necessary pressure to increase the temperature without burning the food. For example, water (which at sea level normally boils at 212 degrees Fahrenheit) boils under pressure when the temperature is 30-50 degrees higher than normal. The food cooks evenly, the nutrients stay in the food, and you get... risotto in 7 minutes, artichokes in 10 minutes, beef stew in 15 minutes, cheese cake in 30 minutes...

A good pressure cooker is made of a highly conductive metal, like aluminum, or is made of stainless steel with a heavy aluminum or copper sandwiched base. It will have a number of safety features, such as safety valves and automatic lid locks, and two or more pressure settings for versatility.

STEAMER

This is also a combination utensil, whereby a smaller pan, with holes on the bottom, is placed over a larger pan partially filled with water or stock below the level of the smaller pan, causing the steam to cook the food in the top pan. A cover is necessary to contain the steam. Some steamers are available with multiple tiers, allowing you to steam two or more foods at once, always placing the food that requires less cooking at the top. A **bamboo steamer** is best because it reduces condensation that causes food to become soggy.

A **fish poacher** is a steamer in the elongated shape of a fish. A **couscoussier** is also a type of steamer. An inexpensive perforated basket with legs is available for use in almost any sauce pan or stock pot.

BAKER

These are generally low-sided pans, with or without center tubes, for use in the oven. **Casserole** pans usually have higher sides and, besides being used for baking, are also used for serving. **Gratin** dishes are bakers with low sides and handles, usually for subsequent use under the broiler to brown the top or finish foods. **Cake** pans and **loaf** pans come in a multitude of sizes and shapes to fit your every whim. You can easily be creative with the

hundreds of new and novel shapes currently available.

ROASTER

Taller and larger bakers are called **roasters** and may have a lid to assist in the basting of the food and to keep it from drying out.

WOK

A popular, all-purpose Asian pan, it is distinguished by high, sloping sides, resembling a bowl. The traditional wok is 14 inches in diameter and is made of carbon steel. Cast iron takes a while to heat up, but then it stays really hot. By the way, the inherent qualities of stainless steel make this a poor metal for a wok and also make it more expensive. An electric wok is an inefficient and expensive alternative that, with few exceptions, is best avoided. Non-stick surfaces are unnecessary and don't last long. Aluminum gets hot all over and considered overkill. And hammering just looks nice.

Expect a carbon steel wok to turn dark with repeated use. This is desirable.

If you have electric burners, you may need to use a **flat-bottom wok** in order to get enough heat. **Round-bottom woks** are best for flame burners. The idea is to have a hot spot at the bottom of the wok, where the actual cooking takes place. The sides are used to rest the food that is cooking at slightly cooler temperatures. Moving the food about gives you great control and versatility, while enabling you to cook each food perfectly to enhance its flavor and retain its nutrients. Combined with a **bamboo steamer**, woks are ideal for steam cooking and, with a **tempura rack**, make excellent deep fryers or tempura pans.

HOW TO CHOOSE THE RIGHT MATERIALS

~ Matching Material Quality to Desired Results ~

COOKTOP/STOVETOP LIMITATIONS
IRON (Cast Iron, Steel, Stainless Steel) - COPPER
ALUMINUM (Cast, Rolled, Anodized) - CLAY - GLASS
PLASTIC - SILICONE - NON-STICK

The quality of cookware generally refers to the type of materials and their gauge or weight. These factors can make a substantial difference in your cooking manner and results. Therefore, it becomes important to understand their individual characteristics.

Considerations for cooktop/stovetop limitations

Different technologies can affect the way your pans perform, and which types of pans are best suited for use on top of your stove or cooktop.

Halogen - heat from radiant light source under glass
Radiant - heat from electric elements under glass

Induction - heat from magnetic excitement
Solid element - heat from iron disks over electric elements
Open element - heat from open electric tubular elements
Gas - heat from gas flame

Smooth ceramic glass, radiant and halogen:

Use medium- to heavy-gauge cookware with a flat bottom.

A lot of heat is lost between the heating element and the cooking utensil if it does not have a flat bottom. Warped pans can also more easily scratch the glass surface or leave marks. Unstable pans may be hazardous in use. To check the bottom of your pots and pans for flatness, check with a straight edge, such as a ruler -- if it rocks back and forth, you may wish to replace the pan.

Some ceramic glass stovetop makers recommend against using glass cooking utensils directly on the cooktop, so be sure to double-check the manufacturer's instructions for your stovetop.

Copper and aluminum perform well when used on low-to-medium heat. Remember that they are relatively soft metals, and the bottom of these pans may bow over time, especially if you are in the habit of using high heat. Excessive heat can transfer some of these metals as a permanent mark on your ceramic glass stovetop.

Cast iron and stainless steel pans are the most likely to maintain a flat surface. Stainless pans with a copper or aluminum bottom also generally fare very well.

Always lift pans; never bang them on the glass or slide them across the cooktop.

Any kind of utensil left empty on a heated burner will become damaged, and glass cookware may shatter.

Very small and very large pans may not be recognized by the cooktop sensors.

Induction:

Use medium- to heavy-gauge cookware that has magnetic properties.

Pans should also have a flat bottom, as contact with the surface is extremely important.

Cast iron, enameled iron, steel and enameled steel pans are all magnetic. So are some stainless steels, like AllClad cookware. Some manufacturers of stainless steel make only the base magnetic for use on induction units, and some stainless steel does not have sufficient magnetic properties and is thus useless on induction cooktops.

Very small and very large pans may not be recognized by the cooktop sensors.

Solid and open electric element, and gas:

Use medium- to heavy-gauge cookware.

Any metal will do, however the heavier it is, the more likely you'll get better heat distribution (diffusion) and less hot spots. Some glass and ceramic pans are also suitable for use on these stoves, but be sure to check the manufacturer's instructions first.

IRON

The oldest known metal for cooking, iron is never used in its pure form, but rather with other compounds to yield **cast iron**, **steel** and **stainless steel**.

Cast Iron - To make such a utensil, molten iron is poured into a mold and allowed to harden. The result is a very porous material that requires treatment (seasoning) prior to regular use, to seal the pores and keep foodstuffs from becoming embedded in the iron.

Although cast iron takes a while to heat, the advantage is that, once heated, it will remain very hot for a long period of time; as such, foods that require high heat are best cooked in cast iron. Iron being a reactive metal, it has disadvantages in that acidic foods should not be cooked in it for any length of time.

Iron has magnetic properties which allow for its use on induction cooktops. Added benefits from cooking with cast iron are a good workout for you (they're heavy), a light workout for your wallet (they're very inexpensive), and a slightly increased bodily intake of an essential mineral.

Most North Americans don't get enough iron in their diet. If you cook a couple meals a day on iron pans, the small amount that is absorbed into the body by the food represents only about 20% of the recommended daily dosage.

When well seasoned (remember grandmother's), it becomes black and markedly more stick-resistant, but since the seasoning coat absorbs flavors and odors, these pans are best reserved for a single category, such as fish or eggs.

When new, wash with hot soapy water, rinse very thoroughly and towel dry. Then season right away. To clean after cooking, wipe with a paper towel or cloth. Or use hot water and a tampico or stiff nylon brush. Then towel dry. If you're not going to reuse the pan for a prolonged period of time, give it a light coating of oil before storing.

A little rust is no reason to throw away the pan. Just sand down to the bare metal and re-season.

Iron pans that are covered with porcelain enamel keep food from reacting with the metal and require more care. They can't take the high heat you can give raw iron pans, and they will

easily chip if banged or dropped. But they do make great serving pieces and also retain the same heat distribution qualities as raw iron.

Steel - A tough alloy of iron containing carbon, its advantage is that it is quick to heat and can take high heat, but it does not distribute heat very evenly when used on the stovetop. In the oven, food cooks more quickly in steel utensils.

Blued, sometimes called **black**, steel is obtained through high heat, causing oxidation to form as a thin layer on the surface of the metal, allowing for better and faster heat absorption and transference to the food.

Once seasoned and in constant use, a steel pan will naturally become blued. To clean and store, follow the same instructions as for cast iron (above).

Steel being a reactive metal, it has disadvantages in that acidic foods should not be cooked in it. Steel has magnetic properties which allow for its use on induction cooktops. To counteract its reactive properties in **bakeware**, steel is often lined with **tin**, a non-reactive, soft metal. It is frequently covered with **enamel** and often called graniteware or **enamelware**. Sometimes it is aluminized, that is, hot-dip coated with aluminum. And often it is coated with one of many **non-stick finishes**.

Similar to iron cookware, absorption of the mineral iron into the body would only account for less than 20% of the daily recommended dosage, so it's safe to use.

Stainless Steel - This is an iron alloy which is made resistant to corrosion by the addition of chromium and other compounds. Its primary disadvantage is that it is an even poorer conductor than steel, so that constant movement of the food is required in order to cook it evenly. To make stainless utensils better equipped for heat conductivity and distribution, an important layer of conductive material, such as copper or aluminum, is often added to the bottom of the pan and, sometimes, all around the pan. The heat conductive quality of stainless is about one tenth that of copper and about one fifth that of aluminum.

Stainless has advantages that make it a great favorite for two reasons. First, it is fairly inert and, when cooking, will not generally react to change the taste and color of even the most acidic foods. Secondly, it is very attractive and requires minimal care, since it won't chip or easily rust and it takes little seasoning.

There are many varying qualities of stainless steel. You can easily make do with the lesser ones for most oven use, since heavy weight and heat distribution may be less important when the pan is enveloped in the even heat of an oven. For stovetop cooking, don't skimp on quality: buy only the better ones. Features to look for include: metal handles, thick heat diffusing bottoms, 18/10 grades and a lifetime warranty.

The principal elements in stainless that have effects on our health are iron, chromium and nickel. As indicated above, iron can be very beneficial. Chromium is also beneficial in small

quantities, and you would have to cook four complete meals a day in stainless cookware to come close to reaching adverse effects from chromium intake. Although nickel is poisonous in large quantities, only trace amounts go into the food; not enough to make a difference. If you're allergic to nickel, you should avoid using stainless altogether.

COPPER

Certainly the finest practical conductor of heat for a cooking utensil is copper. Its primary advantage is that it requires only low to moderate heat to obtain the best results. And its conductivity makes it especially responsive to almost every cooking need. Copper has about ten times the heat conductivity of stainless and glass, and twice that of aluminum. So watch the amount of heat you give it.

Because it is a soft metal, a heavy gauge is more desirable for utilitarian reasons, as is hammering, which makes it stronger and able to withstand many more years of use. Its primary disadvantage is that it is reactive to acidic foods, so it is usually lined with another metal, the most common and practical of which is tin, that, unlike stainless steel or nickel, can be readily refurbished.

Stainless and nickel linings in French copper are very durable, by comparison to tin linings, and also very expensive. In general, we recommend tin for all copper pans. However, because tin melts at about 450°F we often recommend stainless for frying (and maybe sautè) pans, which receive more direct heat that is not dispersed by liquids (unlike sauce pans, stock pots, etc.), thus preventing the damage that accidental overheating might cause.

If you use wooden or other "soft" non-scratching utensils, and use moderate heat under your tin lined copper, the lining will last for years and years before it needs refurbishing. Always place food and liquid in a lined pan before it gets too hot, so that it will absorb heat and prevent damage to the pan's lining.

It's not absolutely necessary that you keep the copper bright and shiny; just keep it clean. Though commercial copper cleaners work best, you can also use a paste you can make with a little flour, salt and water.

You'll find copper listed on vitamin bottles for its benefits to our health. We have not found enough research to indicate how much copper you would have to absorb for it to be damaging to your health, but we do know that a lot of it will leach into acidic foods, causing an unpleasant taste and usually a change in coloration, and in ample quantities, can cause nausea, vomiting and diarrhea. That's should be good enough to discourage anyone from cooking acidic foods in copper that is not coated; it'll keep the food looking and tasting better, and you'll be healthier for it.

Tin, coating the inside of many copper pans, is not reactive and we couldn't find studies that indicated it poses any health threats. Look under Stainless Steel, above, for additional health

information that relates to its primary composition of iron, chromium and nickel.

ALUMINUM

Aluminum is the most abundant metal on the earth's crust, and the third most common element. It is silvery-white, light, non-toxic, and easily machined or cast.

The best heat conductor next to copper, it is very widely used in cooking utensils because of its advantages of great conductivity, lower cost and great strength. Aluminum utensils can either be made by **casting** or by **rolling**, and they are easily anodized or covered with a **non-stick** surface. Aluminum is a reactive metal, and its primary disadvantage is in that acidic foods should not be cooked in it for any length of time.

Because of fears concerning a possible connection between aluminum and **Alzheimer's** disease, many people are turning away from aluminum cookware. Both the Food and Drug Administration (FDA) and the Alzheimer's Foundation assure us that no link has been found between the use of aluminum utensils and the disease.

The World Health Organization (WHO) estimates that we absorb less than 4% of the maximum safe dosage from cooking in aluminum utensils. Because aluminum is readily absorbed from many foods, it is estimated that we absorb only between 10% and 20% of our daily intake as a result of cooking in aluminum.

Avoid cooking in pitted aluminum pans; aluminum is absorbed into foods much more readily from pitted ones. And avoid storing foods in uncoated aluminum to prevent absorption. Acidic foods and leafy vegetables absorb the most aluminum.

In some localities, water can contain minerals and alkalis that may be deposited on the surface of the aluminum. Cooking low-acid, salty or alkali foods, or washing in the dishwasher can also cause blackening. The staining or discoloration does not affect the use of the utensil or the food prepared in it. To remove the discoloration, soak in a solution of water and lemon juice or vinegar. If the discoloration is great, boil a solution of two tablespoons of cream of tartar to one quart of water for 5-10 minutes, or boil an acidic product in the cookware, such as tomatoes or apple parings. Then wash in hot, soapy water, rinse and dry.

Cast Aluminum - Utensils made by casting aluminum are porous by nature and require seasoning. Their advantages include being relatively quick to heat, requiring only a low to medium heat source, and they retain heat longer than utensils made by rolling because of the air pockets formed from pouring molten aluminum into a mold. The disadvantages are that they are not as efficient at distributing heat evenly and are more brittle, so care should be taken not to drop them, as they may crack, rather than bend.

Rolled Aluminum - The advantages of utensils made from rolled aluminum, the most common in use today, are that they are more practical because of their lighter weight, they are quick to heat, require only a low to medium heat source, and retain heat well. However, when

too thin it is not practical and a disadvantage, since it does not allow the metal enough substance to evenly distribute the heat, causing undesirable hot spots.

Anodized Aluminum - Aluminum is anodized for corrosion resistance, abrasion resistance and esthetic reasons. In other applications, aluminum is anodized for insulation from electricity or adhesion.

Anodizing is the successful development and control of a natural oxidation process that occurs when aluminum is exposed to the atmosphere. Electricity and chemicals are used jointly to thicken aluminum's natural oxide film, producing a hard, transparent surface that is integral with base aluminum.

The resulting surface is hard (comparable to a sapphire), transparent (similar to glass), insulative and static-resistant, integral with aluminum surfaces and non-flaking, with a wide variety of colors and finishes.

Batch (or piece), sheet, and coil anodizing all consist of three processing stages: pre-treatment, anodizing and post treatment.
- In pre-treatment, the aluminum surface is first cleaned then chemically treated. Etching results in a satin matte appearance. Various degrees of etching can be specified (i.e. light, medium, heavy). Bright-dipping will enhance an already bright aluminum surface, and result in varying degrees of reflective finishes.
- In anodizing, once the surface is prepared, the anodic film is built. Electrical current is passed through an electrolyte bath in which the aluminum has been immersed. The anodize film is built from the aluminum itself, not applied. It is a hard and porous film. The coating thickness may be tightly controlled, based on the end use product.
- In post treatment, the porous anodic film can be colored in this stage. Organic dyes can be used to fill pores with color, or metal salts can be electrochemically deposited at the base of the pores to create a broad spectrum of colors. Many of the colors are fade-resistant. Sealing the anodic film normally consists of a hot water bath that basically swells the pores shut.

The strength of the anodized finish is resultant primarily from the type of pre-treatment, the coating thickness, and the type of anodizing. Hard coat anodizing (Type III), for example, is about 33% thicker than conventional anodizing, giving it greater resistance against corrosion and abrasion. Sulfuric, or conventional, anodizing (Type II) adds corrosion and abrasion resistance and dielectric strength to aluminum. Chromic anodizing (Type I) is primarily for corrosion resistance.

Anodized aluminum, like most metals, can be scratched or gouged. Damaging the surface of anodized metals in this way will remove the anodized coating in that spot.

CLAY

Porcelain - Porcelain is a clay body; a combination of fine china clay, ballclay, feldspars and the like. When fired, it becomes very hard and strong and usually translucent. Porcelain is normally very white and has a very smooth surface. Porcelain clays lack iron impurities and

are ground to very fine particle sizes, which contributes to their higher density. Porcelains can usually be used on the stove, in conventional and microwave ovens, and even under the broiler, provided there is ample liquid inside. They can also be used for storage in the refrigerator or freezer, are virtually non-stick, and are dishwasher safe.

Stoneware - Stone wares are high fired ceramics (usually containing fireclay, which adds to their strength) often made of clays that are not highly refined. They can be brown, buff or white, and commonly have some specks and some particulate material such as sand or fine grog. Stonewares are vitreous (usually non-porous) or semi-vitreous (porous), not translucent. They can be used in conventional and microwave ovens. Some stoneware can also be used over an open flame. Some are dishwasher safe, but we recommend washing by hand.

Earthenware - Earthenware is a clay fired at low temperatures where it does not become vitreous. Earthenwares are porous and therefore not as strong as stonewares and porcelains. Glazes are usually very bright colored and if the glazes are properly chosen, earthenware can be quite strong and functional. Earthenware glazes will never be as hard as a porcelain or stoneware glaze surface. Therefore an earthenware glazed pot or plate will scratch or chip more easily than the harder surface of porcelain or stoneware. Terracotta refers to a type of earthenware that contains red burning clay. Majolica is terracotta with an opaque white glaze, usually decorated with colored overglazes, and is stronger than terracotta. Earthenware is usually best for conventional and microwave oven use, though some can also be used on top of the stove. If glazed, it becomes non-porous and can also be used to cook liquids. Washing by hand is recommended.

Unglazed Spots - Unglazed spots are common to all ceramics, and are found in areas that do not affect the usability of the pottery. The "foot" of a pot or bowl, the area that rests on the unglazed or stilted surface or shelf of the kiln, is unglazed, because otherwise the glaze would bond to the kiln shelf during the firing process. The most expensive ceramics sit on the points of little stands in a kiln, so that more of the surface will take the glaze; the spots are evident if you look closely or run your hand along the bottom. An unglazed foot will absorb water from washing and can leave a water ring on furniture if not completely dry. Unglazed spots or bubbles can sometimes appear in other areas of the pottery, caused by improper glazing, or by gas bubbles in the clay or glaze. Ceramics with such unglazed spots should be avoided for food contact, as the spots can harbor colonies of bacteria.

Use and Care - Caring for ceramics is easy. The glazes that cover the clay protect it from discoloration. Glazes that are approved for use with food do not react with acidic foods, and can be used to store any food safely. Though porcelain can easily take the temperature and harsh detergents of a dishwasher, we recommend washing all ceramic wares by hand, especially to prevent accidental damage from other utensils beating against them in the dishwasher. Porcelain wares, with the exception of thin, fragile pieces, take to dishwasher use in the same way as glass. Because of the dense nature of porcelain, discoloration of bare spots can usually be cleaned with detergent and nylon scrubber.

Health Issues - There are no known adverse health effects from using unglazed clay in cooking, primarily because of the limited contact of food with the clay, and the fact that it's

the clay that does most of the absorbing. Glazed clay products produced and imported into the US and Canada are deemed safe through a series of tests that manufacturers and importers are required to submit to the government, proving the quantities of cadmium and lead to be within acceptable levels. Beware of clay/ceramic cooking products you bring in from other countries; better to use them as flower pots instead.

STONE

Natural stone cooking utensils are generally meant to cook foods that require long, slow cooking, as with stews. The most common is soapstone, a relatively soft stone which is mined then shaped by carving.

Stone is quite absorbent, so it must usually be seasoned before use. Covering all surfaces with oil and putting it in a medium oven for about a quarter hour usually does the trick. This generally causes the stone to darken, as it will with continued use.

Care must be taken to heat stone slowly and not subject it to temperature shock. Stone utensils are usually banded to prevent any cracks from developing into larger ones, and allows for continued use of the utensil, even with small cracks.

Because stone holds heat like iron, it is excellent for keeping foods hot while serving. Griddles can be used for making pizza or for tabletop cooking for bite-size foods.

Stone should be cleaned with only hot water and a sponge or light scrubber. Soap will remove the oil seasoning, which must then be replaced in order for the utensil to perform properly.

GLASS

Many **oven-proof glass** baking utensils can safely be used in a microwave and are dishwasher safe. Some are even made to be used for stovetops; however, care must be taken to prevent them from directly coming in contact with electric elements or with excessive heat by using a metal trivet or diffuser. Glass conducts heat well, but does not distribute it evenly. Its advantages are that it works well for most oven cooking, it does not react with acidic foods, all foods can be safely stored in it, and there are no adverse health effects from cooking in it. But its disadvantage is that it is not at all efficient for stovetop use, it easily causes hot spots, and food will require constant stirring and longer cooking times.

PLASTIC

Great for storage of foods when plastic containers are new and undamaged or not discolored by other foodstuffs. Only some plastics are made to be used in the microwave; make sure the containers/utensils are labeled for microwave use.

We don't recommend reusing plastic containers and wraps, especially ones sold with dairy and meat products, since certain manufacturing elements can leach into the food. If you

absolutely must reuse them, use them only to store cold foods.

SILICONE

Polysiloxanes, (the proper name for Silicones), are stable synthetic compounds, with lubricating properties that mimic organic, carbon based compounds, such as petroleum, animal fats and vegetable oil.

Silicone polymer is a term much like "plastic" - it covers a rather wide range of materials and properties. The chemistry of a particular polymer determines it characteristics, from hard and brittle varnishes, to soft and flexible rubbers. The initial work on polysiloxane chemistry dates back almost 60 years and it continues today.

Utensils made of silicone are generally heat resistant to between 400° and 700°F. The most common shapes are molds for baking, that can be used in both conventional and microwave ovens. Foods that are baked in these molds usually come out shiny. Shallow molds work best, as silicone does not distribute heat evenly.

NON-STICK

Varying qualities of non-stick coatings are manufactured for bonding to the surface of utensils. Their advantages include considerable ease in cleaning and reduction of the need for grease in your cooking. Their disadvantages are that they may become too easily damaged by spatulas, spoons, forks, etc., especially metal ones, and that their durability has a short life expectancy. Even the newest non-stick coatings will begin to lose their resistance to sticking after only a few years; sooner if the pan is constantly overheated or cleaned in the dishwasher or with harsh detergents.

Although they cannot be considered as non-stick, alloys such as stainless steel can be made stick resistant by manufacturing them with products like silicone or ceramics. As this is not a surface coating, its longevity is much greater and care is much easier, although utensils made in this manner are much more expensive.

Be sure to follow the manufacturer's instructions on using and caring for your non-stick pan; you may be surprised to learn that the warranty may be voided if the utensil is overheated or cleaned in the dishwasher.

We generally recommend non-stick surfaces only when there is a need to address concerns about cooking in small quantities of oils or fats, and when the utensils will be subjected only to low-to-moderate heat.

Today's non-stick surfaces are inert, so they do not pose any health threats under normal usage. If accidentally ingested, they pass right through you without harm. Do, however, be careful not to leave them on the stove empty and unattended, because if they reach 650° Farenheit, they will give off gases that can irritate your respiratory system, or be noxious, or

just plain annoying. And that's besides your pan's coating, and maybe even the pan, having been ruined.

HOW TO CHOOSE BASED ON YOUR HABITS

~ Matching features to Comfort and Ease of Use ~
~Buying a Set~
~Warranties~

FEATURES - SETS - WARRANTIES

Important considerations include **weight**, **care** requirements and **handle configurations**, as may be **colors** and **storage** needs. Get the feel for the utensils before you buy them, by **handling** them in the store as you would at home.

When considering **handling weight** of different metals, here's a handy guide to use for comparison purposes. (Needless to say, you must take into consideration the thickness of pans made from different metals. For example, stone pans are quite thick, as are pans made of copper and cast iron, however aluminum pans need only be made with relatively thin sides.)

Stone - 160 lbs/cu ft approx
Aluminum - 162 lbs/cu ft
Glass - 160-180 lbs/cu ft
Cast Iron - 450 lbs/cu ft
Steel - 490 lbs/cu ft
Brass - 500-525 lbs/cu ft
Copper - 540-555 lbs/cu ft
Silver - 655 lbs/cu ft
Gold - 1204 lbs/cu ft

Don't forget that there's weight in Water and other liquids, at approx. 62.5 lbs/cu ft.

Choose the **right utensil for the job**. If you wish to make a delicate sauce, for example, your best results will come from using a double boiler or a heavy metal sauce pan; not by using a glass or lightweight aluminum sauce pan. Keep in mind that the best kitchens mix and match utensils from different manufacturers to suit the cook's needs.

In order for any utensil to work properly, it must be **used correctly**. For example, except for cast iron and carbon steel pans, always use low-to-medium heat; the results will be worthwhile. And be sure to follow manufacturers' instructions.

If replacing a utensil you are now using, consider if the **size** was adequate for your needs and adjust accordingly. Better to overestimate your needs; you can still boil eight quarts of water in a larger twelve quart pot, but not the other way around.

If a utensil seems heavy, it will be heavier once food is added to it, so look for a **handle configuration** that makes it easier to pick up and move. And although a metal handle gets

hot, it will usually last the life of the pan and can easily be covered with a **pan handler**; or picked up with a mitt.

Sets can be a real bargain. Sets often provide you the biggest bang for your investment. You can often save 20-30% over buying individual pieces. How do you know when buying a set makes sense?

Compile a list of exactly what you'll need. If all the pieces you want are included in a set, buy it. If a set includes pieces you'll never, or rarely use, consider whether the cost of buying the remaining pieces individually is cheaper than buying the set. You can always complement sets with individual pieces.

First, we recommend you review this tutorial on choosing and using cookware. You'll learn what pans are most suitable for cooking certain types of foods. You'll also learn how different manufacturing materials affect food and your style of cooking. And whether or not an expensive, high quality set of cookware makes sense for you, over an inexpensive set you'll need to replace again and again.

Second, review the pans you own. Make a list of other sizes and shapes that would complement them. Add to the list any that you want to replace.

Third, you may have a wish list of pans you've always wanted to own. Make a separate list of these, and use it, when they may be included in a set, to determine if its usefulness has enough value to warrant purchasing the set.

Fourth, talk with your friends about their experiences. Or check out forums at food sites, like Epicurious.com

Shop around. Though most of the major manufacturers' cookware sets are sold at full list price, some retailers may offer bonus pieces, free shipping (which we do offer on purchases over a certain dollar amount), and other benefits.

Set prices can vary widely, based on brand and what pieces are included in a set. Different same-piece-number sets are often available from a manufacturer, making it look like one retailer is cheaper or more expensive than another. So check out the pieces that are included in each set.

What about **warranties**?

If there are provisions indicating that the warranty won't cover abuse, consider if your cooking habits are such that regular overheating, dishwasher use, the use of metal utensils on some non-stick coatings, and other habits may void the warranty.

The longevity of the manufacturer should be considered. What is the likelihood that it will be around in 1, 5, 10 or 20 years to replace your pans? I can almost guarantee that at least one

of your non-stick pans will need to be replaced, no matter what brand of cookware you buy.

Will the retailer go to bat for you in helping you replace your pans? We do! Often, the manufacturer allows us to replace pans at will. Other times, we will ship the pan to the manufacture, at our expense, for their evaluation and possible replacement.

HANDY TIPS

~ Care of Cookware ~

You've heard this before; it's true! No matter how good or how expensive a pan might be, proper care will not only lengthen its useful life, it will also provide you with better cooking results.

1. **Never** use abrasive or caustic cleaners like cleanser, lye and oven cleaners. Try heating some water with baking soda to remove those stubborn stains. Better: Avoid scrubbing by heating some water in the pan right after you're done cooking to soften any sticking food; makes for easy wiping when you're ready to clean after finishing your meal.

2. If you want to use **cleansers** to clean and brighten the utensil, we recommend Bon Ami or Bar Keepers Friend. Some manufacturers do recommend other cleansers, so check out their use and care instructions.

3. Try to **never** use metal scouring pads or scrubbers on fine finishes. They leave microscopic scratches that dull the finish and encourage foods to stick. We recommend nylon if you must scrub. The ideal clean-up is to promptly cover the sticking foodstuffs with water and heat gently; a well-maintained pan will soon release the food and reduce your scrubbing significantly.

4. **Season** steel, cast aluminum and cast iron. At high temperatures, oil or shortening carbonizes in the pores of metal cookware, thus preventing foods from burning and anchoring themselves to the pans. A well-seasoned pan is nearly stick-proof and a real cooking pleasure.

5. **Crank up** the heat on iron and steel. Uncoated cast iron is made to be used real hot; it takes a while to heat, but it can really get and stay red hot. Carbon steel pans can take high heat as well; if you don't get a wok hot enough in a concentrated area at the bottom, they become impractical for their intended use.

6. **Crank up** the heat as needed with other pans, but never for prolonged periods of time; liquid inside disperse some of the heat and keep them from warping and suffering other damage. Remember that you can easily damage any pan (other than iron and carbon steel) through excessive heat.

7. **Don't** crank up the heat with non-stick pans; or you will severely shorten its useful life.

8. To help prevent sticking at the bottom of a pan, use a trivet or **diffusing plate** on open-

element electric stoves and on commercial gas stoves to soften the heat of the burners. This is especially helpful on any stove if your stainless or aluminum pan does not have its own heavy aluminum or copper diffusing disc.

9. If you use an **electric stove** with elements that take a while to heat and to cool, don't crank up the heat. Better: set one burner on the correct cooking temperature, and put the pan on another burner set on high. When the pan has reached cooking temperature, set it on the other burner and start cooking.

10. **Hot pan, cold oil; food won't stick**. You can gently and briefly **pre-heat** most better cookware before adding shortening to help prevent food from sticking.

11. Although most pans can handle metal spoons and spatulas, some abrasion does occur. We strongly recommend **wood spoons** and the new high-temperature **resin spatulas**.

12. Use a **dishwasher** only when the manufacturer recommends it. On steel and iron surfaces it will create rust, and it will also remove some seasoning. Tin-plated steel pans can also rust if they are scratched and in spots with welds. Non-stick pans lose fluoropolymers to the harsh detergents, and eventually lose their ability to keep food from sticking. Anodized pans will discolor and stainless steel pans will eventually pit from the detergents. Wooden utensils soak up water and detergent and eventually crack.

13. **Never** store acidic foods in any pans that are not made of glass, porcelain, or that are glazed with enamel. All metals react with acids; it's only a matter of time before you start noticing the damage.

14. Have you checked your **oven temperature** recently? If food is burning or not cooking quickly enough, your oven may need re-calibration; get yourself a good bulb-type oven thermometer.

15. Look into an overhead or wall **pot rack** to keep your favorite pots near at hand. You may need to consider head room and where the ceiling joists are located.

16. If minerals in the water cause **white spots** to appear on your non-stick surface, try wiping the surface with white vinegar or lemon juice.

- CONCLUSION -

Knowing the characteristics of each type of cookware, you can match them to your needs and lifestyle. Used properly, these utensils will make you a better cook. And if you feel that good cookware is too expensive, consider how many inexpensive ones of lesser quality you would have to buy to last as long as one good quality utensil. Not to mention the waste of time and food when something burns or goes awry. And don't be afraid to ask questions, even after your purchase. We want you to be happy with your cookware and our service.

QUICK GUIDE

MATERIAL TYPE	QUALITIES	BEST USE	NOTES
Copper	-Heats very quickly and evenly	-Delicate sauces, -All types of cooking	-You may need to reduce cooking time and temperature
Light colored aluminum	-Heats quickly and evenly, -Use for all types of cooking, -Medium or heavy best for cooking	-Light, golden crusts, -Even browning	-Often used as a core or base in cookware to provide even heating, -Can be coated, -Cast aluminum must be seasoned
Dark aluminum and aluminum with dark, dull and/or non-stick finish	-Heats quickly and evenly, -Use for all types of cooking, -Medium or heavy thickness is best for cooking	-Brown, crisp crusts	-You may need to reduce temperature by about 25°F
Cast iron	-Heats slowly and evenly, -Maintains heat for slow cooking	-Browning, -Frying	-Cast iron must be seasoned, -Hand wash
Stainless steel	-Heats quickly and unevenly, -Easy to clean	-Light, golden crusts, -Uneven browning	-You may need to increase baking time, -For stovetop use, it needs a core of aluminum or copper for more even heating
Ceramics, ceramic glass, and oven-proof glassware	-Heats slowly and unevenly, -Some can be used on stovetop, on low to medium settings	-Oven baking, -Brown, crisp crusts	-Follow manufacturer's guidelines for allowed safe uses, -You may need to reduce temperature about 25°F
Porcelain enamel on steel	-Heats slowly and unevenly	-Oven baking, -Brown, crisp crusts	-Can chip, -Easy to clean
Steel	-Heats base quickly	-Bottom cooking, such as thin batter baking (like crepes), -Stir frying	-Must be seasoned, -You may need to reduce temperature by about 25°F with dark steel, -Hand wash
Tin-plated or nickel-plated steel	-Heats base quickly	-Oven pastries, -Low molds work best	-Hand wash
Stoneware	-Heats slowly and evenly, -Maintains heat, -Some can be used on stovetop, on low to medium	-Crisp crusts	-Follow manufacturer's guidelines for allowed safe uses and for care
Earthenware	-Heats slowly and evenly, -Some can be used on stovetop, on low to medium settings	-Gentle cooking	-Hand wash, -Follow manufacturer's guidelines for allowed safe uses and for care
Insulated bakeware	-Heats slowly and evenly	-Light or no bottom browning	-Use on bottom rack in oven
Silicone	-Transfers heat from oven source	-Shallow mold baking	-You may need to decrease baking time with shallow molds, -You may need to increase baking time with deep molds, -Non stick, easy to clean, -Oven (to 525°F), microwave and freezer safe