

# Understanding Cookware

Cookware is pans, baking dishes and serving dishes and comes in hundreds of shapes and sizes and perform hundreds of different cooking tasks, but when construction is stripped down to the basics, there are just a handful of materials used in professional cookware.

*Black Iron* - The most simple and cheapest cookware made from mild steel. While cost is on its side, rusting is a risk. They are not particularly easy to clean and if not thoroughly dried, tarnishing can occur overnight necessitating cleaning again before being used for cooking.

Black iron frying pans are notorious for sticking with items such as fish and eggs and the pan has to be seasoned before use. A layer of salt is put on the inside base and heated up. The effect of this is to seal any surface imperfection in the base of the pan. The salt is removed, replaced by cooking oil and heated till it smokes. The pan is then ready for use. But if it is washed in soapy water, then the whole seasoning process has to be re-done. This is why Chinese chefs seldom wash their black iron woks and seem never to be troubled with food sticking. When black iron was much more common in kitchens chefs would often keep one pan kept aside just for omelettes.

*Aluminium* - The workhorse of many kitchens and still the predominant pan metal for institutional kitchens where the kitchen is on a very tight capital cost budget. The advantage of aluminium is that it is cheap, does not corrode and is a superb conductor of heat. This makes aluminium a good pan for boiling and on cost grounds is suitable for very big pans such as stockpots. One of its big disadvantages is that it can react with acidic food to give flavour taint. It also cannot be used on induction hobs and as with black iron is prone to sticking when food is fried.

Cheap aluminium pans are made from a single sheet of metal, but the best professional aluminium pans have a thicker base to spread the heat more evenly. Medium-duty aluminium pans with a base thick of 3mm to 4mm are suitable for open-top cooking ranges, but with the more intense heat of a solid-top range or for hard use, a heavy-duty pan with a base of 7mm will perform better.

*Stainless steel* - Fast becoming the material of choice for hotels and restaurants because it is doesn't tarnish, is easy to clean, hygienic, hard-wearing, less prone to sticking than other metals and looks good. Because it is so popular, there is wide variation in stainless steel quality on the market. As with aluminium, the base of the pan will be layered. This usually takes the form of a three-layer sandwich with stainless steel on the bottom, aluminium in the middle to give good conductivity and stainless steel on top. Some top of the range pans will have up to seven sandwich layers.

Cheap stainless steel pans look serviceable, but are unsuitable for the professional kitchen. The thin gauge of the metal on cheap stainless steel pans gives very poor heat distribution, they will tarnish easily and because the metal surface is poorly polished

sticking can be a problem. On workplace safety grounds cheap stainless steel pans can also be dangerous. The tack welding that holds the handle on could be very poor and snap without warning when full with hot liquid.

*Non-stick*- Most professional kitchens have a small selection of non-stick cookware. It is perfect for frying delicate fish such as sole and plaice, omelettes never stick and using non-stick frying pans can be part of a low-fat style of cooking. The cheapest non-stick is coated on aluminium, but because of the relative softness of aluminium, the non-stick layer will not last as long as it could when on steel. The main cause of damage to the non-stick coating apart from the obvious one of using metal utensils is getting the temperature too high which will damage the coating. While normal frying is done at 200 deg C, flash frying over a fierce heat can send the base temperature way over 250 deg C causing splitting of the non-stick coating. That is why true wok cooking works better with black iron woks rather than non-stick woks.

*Copper pans* - Once the material of choice in the classic professional kitchen, their use is dwindling in the face of stainless steel. The traditional construction would be copper for the conductivity lined with tin to protect the food from contamination from the copper.

It is still possible to buy copper-tin pans and they can still be retinned, but copper lined with stainless steel is the growing part of this market, for all the qualities that stainless steel has combined with the conductivity and good looks of copper. One downside of copper pans is their solid metal handles, which can get far hotter than the tubular handles found on stainless steel or aluminium cookware.

### **Cooking dishes**

*Stoneware* - While these colourful dishes are more often used for food presentation on a servery, they have a lot of temperature tolerance. The manufacturing process can see the clay baked at 1300 deg C for up to 10 hours to achieve great toughness. This material will withstand a temperature range of -20 deg to 250 deg, making them suitable for oven to counter use. Most are dishwasher-friendly and all can be placed in a microwave oven, but definitely not on a hob as the sudden burst of heat will cause the ceramic to shatter.

Many cooking pots are available with matching lids for closed-lid cooking in the oven and to help keep the food warm while on a service counter. Baked-on food debris will benefit from soaking in water before going into the dishwasher, but avoid abrasive scouring pads of detergents as this may damage the surface. Stacking the dishes inside each other can also contribute to surface scratching.

*Enamelled cast iron* - These pans and casserole dishes are made in cast iron for strength, conductivity of heat and heat retention, then coated both inside and out with an enamel paint which is baked onto the cast iron at high temperature to give a smooth cooking surface and prevent rusting. The colourful nature of these pots and dishes make them suitable for oven to counter like stoneware. The enamelled

surface is not suitable for frying due a tendency for sticking. In addition to enamelled cast iron, a variation is enamelled stainless steel.

### **How to find out more about cookware**

Talk to the experts.

The Catering Equipment Suppliers Association  
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