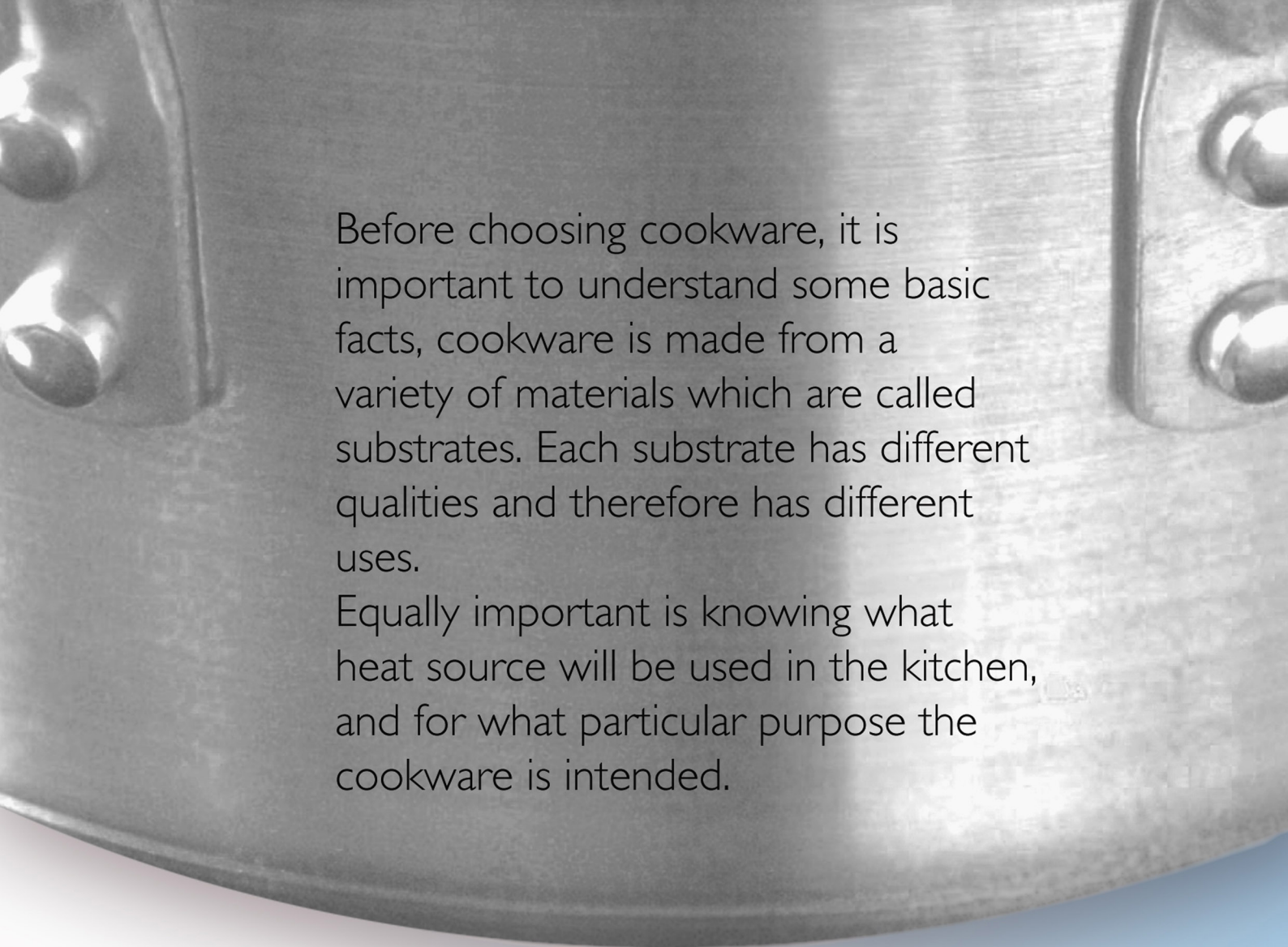


A Caterer's guide to Understanding Cookware



T E C H N I C A L P R O D U C T S



Before choosing cookware, it is important to understand some basic facts, cookware is made from a variety of materials which are called substrates. Each substrate has different qualities and therefore has different uses.

Equally important is knowing what heat source will be used in the kitchen, and for what particular purpose the cookware is intended.

———— The **'Understanding Cookware'** booklet is meant to be a basic guide for choosing and using cookware. It has been compiled by Peter Rigby, in association with several leading chefs. Peter has in his long career in both housewares and the catering industry's, been involved with some of the world's leading cookware manufacturers. He is now National Sales Manager of **MCS Technical Products**, importers and distributors of specialist catering equipment that are concerned with **'Energy Efficiency'** and **'Food Safety'**. ————

Stainless Steel -

The best quality Stainless Steel cookware is manufactured from 18/10 stainless steel, which means 18% Chromium has been added, and 10% Nickel. These metals give the steel its durability and enable the pots to be polished. The smooth non-reactive surface makes the metal ideal for use in the kitchen, however, Stainless Steel is an extremely poor conductor of heat and therefore a base of Aluminium or Copper or a sandwich of both is attached to the pot. These aid even heat distribution and prevent hot spots.

- Advantage** - Durable, non reactive to acids and foods
- Disadvantages** - Will discolour if over heated, a brazed base will separate from the body if over heated.
- Used for** - Saucepans, stockpots, saute pans, fry pans
- Can be used on** - With a magnetic base, can be used on all heat source including **induction**

Aluminium -

Aluminium has been the main substrate for making cooking utensils, however, it does not enjoy a good press with several misconceptions around concerning Aluminium's contribution to causing Dementia and Alzheimer's disease. These rumours have never been proved, but unfortunately the Cookware industry has been slow to refute these claims. However new alloys are constantly being developed, so the old misconceptions surrounding the substrate are being overcome.

- Advantage** - Rapid and uniform heat conductivity, good corrosion resistance, light and durable, relatively in-expensive
- Disadvantages** - Will react with foods, and in extreme circumstances will discolour sauces. Natural aluminium will distort under prolonged heat, unless a thick base of between 6/8 mm of metal is employed, negating strength to weight ratio. New stronger alloys are on the market that will allow strong but light aluminium pots to be manufactured.
- Used for** - Saucepans, stockpots, saute pans, fry pans, omelette pans, baking dishes and trays, roasting dishes.
- Can be used on** - Gas ranges, Ceramic ranges, Electric hot plates, solid plates.

Hard Anodised -

Anodising aluminium is a chemical process that changes the density and colour of aluminium, making it twice as strong as stainless steel.

- Advantage** - All of the attributes of aluminium, and twice as strong as Stainless Steel
- Disadvantages** - Cannot put Hard Anodised cookware in a dish washer, Hard Anodised will react with some foods unless the surface is coated with non-stick
- Used for** - Saucepans, fry pans, omelette pans, baking sheets, trays and roasters
- Can be used on** - Gas ranges, Ceramic ranges, Electric hot plates, solid plates. with a suitable ferrous base can be used on **induction**

Copper -

Copper has twice the thermal conductivity of aluminium and 10 times that of stainless steel, it can however contaminate the flavour of food being cooked in it, so copper usually has a lining either "tinned" or stainless steel.

- Advantage** - Rapid and uniform heat conduction, good corrosion resistance
- Disadvantages** - Unless lined with either tin or stainless steel, will react with acids in foods to cause discolouration, expensive, a soft metal, will dent easily
- Used for** - Sugar boilers Saucepans, Fry pans, Omelette pans, Fish poachers, Crepe pans, Butter warmers and Baking moulds
- Can be used on** - Gas ranges, Ceramic ranges, Electric hot plates, solid plates

Carbon Steel -

Good conductor of heat, and very durable, relatively inexpensive.

- Advantage** - Uniform heat distribution, durable
- Disadvantages** - Will rust if left unused for periods of time, will discolour, will react with acids and foods
- Used for** - Fry's, skillets, woks and stir fry's, griddles
- Can be used on** - All heat sources including **induction**, if of a suitable gauge

Black Iron -

Often confused with Carbon Steel. Commonly used in the kitchen when high heat is required.
i.e. Flash frying or searing

- Advantage** - Uniform heat conduction, durable
- Disadvantages** - Reacts with foods, will rust if left unused for periods of time
- Used for** - Fry's, omelettes, griddles
- Can be used on** - All heat sources including **induction**,

/continued on pages 6 and 7

Understanding Cookware

Frypan and **Skillet** are one and the same - Flat bottom with stick handle, sometimes with loop or helper handle on opposite side. **Omelette pan** is smaller. A **Bini** pan is smaller again.



Substrate
(Materials)



Use On
(Heat Source)



Aluminium	Gas/solid plate/electric
Copper	Gas/solid plate/electric
Stainless Steel	Gas/solid plate/electric Induction*
Cast Iron	Gas/solid plate/electric induction*
Black Iron	Gas/solid plate/electric induction*

*Uncoated Fry pans will perform better if seasoned before use. Only wash with hot water.
(Never wash with soap and water or a scourer).*

Saute pan - straight sides, deeper than a fry or skillet, single stick handle, sometimes with helper handle, can be used with a lid for braising on stove top



Aluminium	Gas/solid plate/electric
Copper	Gas/solid plate/electric
Stainless Steel	Gas/solid plate/electric induction*

(Use with a lid to braise)

Flared Saute, sauteuse chef's pan deep bowl, stick handle.



Aluminium	Gas/solid plate/electric
Copper	Gas/solid plate/electric
Stainless Steel	Gas/solid plate/electric induction*

Rondeau, saute, shallow casserole brazier, similar to a saute pan but with 2 x side handles.



Aluminium	Gas/solid plate/electric
Copper	Gas/solid plate/electric
Stainless Steel	Gas/solid plate/electric induction*

**NB with ferrous base*

Substrate
(Materials)

Use On
(Heat Source)



Saucepans come in a variety of shapes and sizes, Steep side with stick handle. Larger sizes have a helper handle.



Aluminium
Copper
Stainless Steel

Gas/solid plate/electric
Gas/solid plate/electric
Gas/solid plate/electric **Induction***

Always purchase one with a rolled or flared edge for easier pouring - Handles should be welded or rivetted

Non-stick cookware is becoming more popular in catering as the art of seasoning a pan is being lost.



Aluminium
Stainless Steel

Gas/solid plate/electric
Gas/solid plate/electric **induction***

Hard Anodised
Cast Aluminium

Gas/solid plate/electric **induction***
Gas/solid plate/electric **induction***

Stockpot - tall and thin has a tap at the bottom to draw off stock.



Aluminium
Copper
Stainless Steel

Gas/solid plate/electric
Gas/solid plate/electric
Gas/solid plate/electric **Induction***

Boiling pot/saucepot/casserole slow pan - Deeper than a Rondeau, not as deep as a stock pot. 2 x side handles



Aluminium
Copper
Stainless Steel

Gas/solid plate/electric
Gas/solid plate/electric
Gas/solid plate/electric **Induction***

**NB with ferrous base*

Clad

The body of these parts is made from a combination of metals, usually Aluminium and steel and combine all the attributes of both metals.

- | | |
|-----------------------|-----------------------------------------------------------------------------|
| Advantage | - Uniform heat distribution, non-reactive with foods |
| Disadvantages | - Expensive initially, but will prove to be cost effective in the long term |
| Used for | - Saucepans, fry's, omelettes |
| Can be used on | - Some Clad cookware will be suitable for all heat sources |

Cast Iron

Cast iron cookware has excellent heat distribution and retention properties, it absorbs heat steadily and spreads it evenly and slowly

- | | |
|-----------------------|--------------------------------------------------------------------------------|
| Advantage | - Uniform heat retention, strong, durable |
| Disadvantages | - Long heat retention, heavy, will rust if left unused for periods of time |
| Used for | - Casseroles, cocottes, griddles, grill pans, server pieces, oven to tableware |
| Can be used on | - Gas, electric, ceramic hobs, Induction |

These are the main substrates in use in the catering industry, other substrates on the market include - Glass/glass paste, Enamel on steel, Earthenware, Stoneware

Non-Stick Coatings

The use of non-stick coatings on catering cookware is growing in popularity, and can be beneficial, however, PTFE coatings have their draw backs, if used under constant high temperatures, the coating could break down. With frequent scratching from metal utensils or knives, the coating may break down and lift from the surface, and if not washed properly after use, food particles will build up on the surface and cause the food to stick.



Seasoning Cookware

Un-coated iron, carbon steel and stainless steel cookware can be 'seasoned', this seals the surface of the pan giving a non-stick quality if done successfully.

To season a pan, put a layer of cooking salt to a depth of half an inch in the bottom of the pan, heat up on a medium to high heat turning the layer of salt occasionally, when the salt starts turning slightly brown, remove pan from heat, empty the salt and lightly brush the surface of the pan with cooking oil, fry off a root vegetable, such as sliced potato, empty out and wipe surface of pan with cooking oil.

After cooking food in a pan that has been seasoned, do not wash in soapy water, or scour. Re-season the pan occasionally, more often if used excessively. Stainless steel fry pans and omelette pans will discolour to a yellow golden colour, this in no way affects the cooking ability of the cookware.

Handles

Handles should be long enough to be able to lift a full pan easily, and of a material that is heat resistant. It is important that the handles are firmly fixed to the pan either rivetted or with Heavy welds. ***Never use a saucepan where the handles are held with screws!***

Lids

Lids can be a valuable tool in the kitchen, they will speed up boiling and are essential for steaming or stewing. Always make sure they fit snugly.

Base

The base of the pan can dictate the performance of the cookware. If using Aluminium pans, the base should be thick enough to resist buckling under high heat. On Stainless steel pans, it is usual to put a copper or aluminium base on the pan, this ensures even heat distribution, the best bases are a sandwich of a ferrous metal and aluminium and are 'fully **ENCAPSULATED**', This means that the ferrous base totally encloses the aluminium and goes right across the body of the pan, this ensures that there isn't a 'cold bridge' in the corners of the pan where food will stick.

Cookware is suitable for **induction** if a strong magnet sticks to the base of the pan

Choosing Cookware

When choosing cookware, there are several other factors to consider, how is the handle attached to the body? Rivetted handles are usually the strongest and safest. Do you require a lid? Most cookware is sold without the lids but can be useful for avoiding splashes and helps quicken boiling time.



Choose cookware to match the heat source in the kitchen, with the increase in popularity of **Induction** cookers in Catering establishments, cookware for use on **induction** has to have a magnetic base. Cookware for use on a ceramic hob needs to have a flat base with no sharp edges and cookware for use on gas ranges should have a base circumference equal or larger to the gas ring.

On all heat sources, the cookware should be heated up on a medium to high heat, if using oil, when the oil is hot it is important to turn the heat down. this will reduce the chance of the food sticking to the pan.

Using Your Cookware

When using gas, do not have the flames licking around the side of the pan, this is not heat efficient and is dangerous as the handles can get hot.



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