All the materials mentioned in this guide are regulated by the following laws, directives and guidelines that can be downloaded from the following links of the EFSA (European Food Safety Authority) and the COE (Council of Europe):
A **dietitian** is a healthcare professional who is responsible for everything related to the proper application of diet and nutrition (Ministerial Decree 744/1994).

In practice, a dietitian promotes and cares for diet and nutrition in physiological and pathological situations: from the development of personalised therapeutic diet plans (based on a medical prescription) to the preparation of healthy menus for groups (school and corporate canteens) and for the sick (hospital catering), including the planning and provision of education and information.

**ANDID** is the organisation that represents professional dietitians in Italy (Ministerial Decree of 19 June 2006). **ANDID** represents dietitians, protects their interests, promotes educational initiatives and ensures that they maintain a high level of professionalism.

**ANDID** represents Italian dietitians at the Federation that brings together all dietitians practicing in Europe (**EFAD**). It also collaborates on the development of European Federation policies to promote and protect human health in Europe and adheres to the European code of ethics drawn up by the federation.

**ANDID** represents Italian Dietitians at the **International Congress of Dietetics (ICD)**.

**ANDID** aims to foster communication and information among professional dietitians, public and private users and industries.
Every kitchen – whether domestic or professional – has its utensils, pots and pans for creating delicious recipes.

Thanks to technological innovation and exceptional know-how acquired over the years, the leading companies in the cookware sector have always been able to adapt their ranges with increasingly up-to-date and advanced solutions that successfully combine ease of use with functionality, flexibility, design and safety.

The variety of materials, shapes and sizes currently available means we can easily find the utensils we need for a particular style or method of cooking.

Through a careful combination of cooking tools and methods, we can expertly “amalgamate” knowledge and flavours to produce delicious, safe and healthy food for adults and children alike.

As the World Health Organisation (WHO) and the European Union are at pains to underline, the health of the population and food safety is a joint responsibility. In other words, they are dependent on synergic actions and strategies by the various stakeholders involved in the same process.

However, we are well aware that Italian consumers are attentive observers – as highlighted in many surveys by Eurobarometer, the European Commission public opinion analysis service – and are interested in but also worried by the various alarms (and denials) that have periodically surfaced in the media in recent years with regard to the safety of cookware.

In this regard, it is important to remember how the European Union, with the scientific consultancy of the European Food Safety Authority (EFSA) – an independent body that works closely with established and accredited research and scientific institutions in the Member States – works to protect the health of European consumers and food safety thanks to some of the most in-depth and stringent legislation in the world concerning materials or articles that come into contact with foodstuffs.
In fact, the regulation concerning materials and articles which come into contact with foodstuffs, which has a broader scope than the food safety law, is made up of over 350 continuously evolving laws, which over the years have culminated in the most recent Reg. (EC) no. 10/2011 of the Commission of 14/1/2011 (plastic) and MD 21/12/2010, no. 258 (stainless steel).

The underlying principle of all of these measures clearly states how materials or articles (e.g. kitchen utensils, cutlery, cookware, containers, and plastic, rubber, paper or metal packaging) that come into direct or indirect contact with foodstuffs must be manufactured in accordance with Good Manufacturing Practices (GMP) and, in normal or predictable conditions of use, must be sufficiently inert to exclude the transfer of substances to food products in quantities that could endanger human health, modify the composition of food products to an unacceptable degree, or provoke the deterioration of the foodstuff.

The possibility of carrying out reliable laboratory tests in specific conditions (time, temperature, appropriate simulant etc.) also enables manufacturers and supervisory bodies to carefully evaluate the possibility of substances being transferred from the utensil to the foodstuff and the possible nature of the contamination and, where possible, the results of the transfer of the substance directly on the food.

We are therefore delighted to present this guide which, in a straightforward and concise manner and with an emphasis on practical information, describes the characteristics and specific qualities of the materials used to manufacture cookware, the hope being that – as also specified in the ANDID Code of Ethics – “quality” information not only contributes to improving individual knowledge but can also be helpful in making healthy individual and collective choices.
The main qualities of an aluminium cooking utensil are lightness and high thermal conductivity. Metal containers are normally produced by the cold plastic deformation (pressing or drawing) of flat discs. Considering that moulding is a much easier and more economical technique if the mechanical strength of the metal is lower and its ductility is higher, aluminium is a metal that offers the best combination of moulding performance, mechanical strength and conductivity, all of which are indispensable for a good kitchen utensil.

In particular, the ability to conduct heat is an essential requirement when it comes to finding a good cooking utensil. A container with good conductivity:

- effectively regulates temperature throughout the various cooking stages;
- evenly distributes heat on all surfaces, on both the bottom and the sides;
- consequently reduces the risk of localised overheating and burning.

Better conductivity, in fact, means higher thermal efficiency and a quicker increase and uniform distribution of temperature. Today, uncoated aluminium is the metal most commonly used in the food-service sector.

The aspect that limits its use in the home is the ease with which food sticks to the bottom of the cookware, and its unsuitability for use in a dishwasher.

The quality of an aluminium utensil is directly proportional to its thickness.

A considerable thickness ensures a uniform distribution of heat by reducing the probability of the formation of so-called "hot spots" or areas that overheat.

A considerable thickness also guarantees that the bottom remains flat, which must always be calibrated to prevent the bottom from becoming convex during cooking.

In fact, aluminium expands during heating. If the bottom of the utensil is flat and not concave before heating, it is highly likely to become convex, resulting in stability problems and limited heat transmission when cooking on glass ceramic hobs.

Therefore, aluminium is not suitable for use on induction hobs.

In order to be suitable for use with induction heat sources it must be combined with a ferromagnetic metal. Usually, ferritic stainless steel plates are applied to the bottoms of aluminium utensils using mechanical joining, braze welding or deposition techniques.

The aluminium used in uncoated cooking utensils is always obtained through plastic transformation and never through die casting.

The extensive number of experiments carried out in recent years has led the National Institute of Health to be among the leading centres on testing the migration of aluminium into foods. This institute has taken a definitive position on the health characteristics of aluminium in cooking utensils, dispelling any possible doubts among those responsible for controlling health-related issues. The National Institute of Health wanted to verify if, and to what extent, aluminium could be considered suitable for contact with food within the time prescribed by law, but even before, to verify its eventual migration to food.

The results of tests on food have revealed that the consumption of a normal meal for an average Italian could lead to contamination of less than 1 ppm (part per million) per meal, in a hypothetical scenario where everything is prepared in aluminium containers. This confirmed the finding that only prolonged contact, at room temperature or in a non-refrigerated setting, with acidic foods should be avoided, as a precaution.

http://www.iss.it/dspace/bitstream/2198/-4864/1ISSA05_0394-9303_2005_S_18_03_11-15.pdf

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This experiment was subsequently translated into an explicit rule to ensure peace of mind for the consumer: Decree no. 76 of 18 April 2007 published in Italian Official Gazette no. 141 of 20 June 2007.

In particular, aluminium used to manufacture materials and items intended to come into contact with food must meet the purity criteria established in the annexes of the aforementioned regulation.

The conditions of use of aluminium containers are as follows:

a. brief contact: less than 24 hours at any temperature;

b. prolonged contact: longer than 24 hours at refrigerated temperatures;

c. prolonged contact: longer than 24 hours at room temperature only for foods listed in annex IV.

Following a request from the European Commission, the Panel on Food Additives, Flavourings, Processing Aids and Food Contact Materials (AFC) was asked to provide a scientific opinion on the safety of aluminium from all sources of dietary intake. In the event the estimated exposure for a particular sub-group(s) is found to exceed the Provisional Tolerable Weekly Intake, a detailed breakdown by exposure source should be provided. The major route of exposure to aluminium for the general population is through food. Aluminium in drinking water represents another, minor, source of exposure. Additional exposures may arise from the use of aluminium compounds in pharmaceuticals and consumer products. Under normal and typical conditions the contribution of migration from food contact materials would represent only a small fraction of the total dietary intake. However, the Panel noted that in the presence of acids and salts, the use of aluminium-based pans, bowls, and foils for foods such as apple puree, rhubarb, tomato puree or salted herring could result in increased aluminium concentrations in such foods. Also, the use of aluminium vessels and trays for convenience and fast food might moderately increase the aluminium concentrations, especially in foods that contain tomato, different types of pickles, and vinegar. It has been suggested that aluminium is linked to the aetiology of Alzheimer’s disease and that it is associated with other degenerative diseases that affect humans. These suggestions, however, remain controversial. Based on available scientific data, the AFC panel of experts does not believe that exposure to aluminium through food poses a risk for the onset of Alzheimer’s disease. In this regard, the German Federal Institute for Risk Assessment (BfR), commenting a new study conducted on the possible cause-effect relationships between the intake of aluminium and Alzheimer’s disease, has concluded that this relationship has not been proven in a scientific way: “so far no causal relationship has been proven scientifically between elevated aluminium up-take from foods including drinking water, medicinal products or cosmetics and Alzheimer’s disease.”

The full version of the findings of the panel of scientific experts from the European Food Safety Authority (EFSA) and the report of the BfR can be downloaded from the links below:


Non-stick aluminium utensils offer all of the benefits of unfinished aluminium utensils (manoeuvrability, ability to conduct heat) as well as non-stick performance.

The non-stick coating used mainly for coating aluminium cooking utensils is made using PTFE (polytetrafluoroethylene).

PTFE, also known by the name Teflon, is an inert polymer with high thermal and chemical resistance.

Recently, the use of Teflon as a material for coating cooking utensils has been questioned, linked to inaccurate information resulting from having confused another compound (PFOA - perfluorooctanoic acid) with PTFE.

In particular, non-stick coatings appear to be free of PFOA. Non-stick coatings have been around for more than 40 years and are safe for their intended use. European regulatory agencies such as the EFSA (European Food Safety Authority), the French agency for food safety AFSSA, U.S. agencies such as the Food and Drug Administration (FDA) have stated that non-stick coatings made with fluoropolymers are safe for their intended use in cooking.

The FDA also reiterated that particles of non-stick material, even when accidentally ingested, do not constitute a health risk. Due to their chemical inertness, they are not transformed in any way. These particles simply pass through the organism unaltered, therefore proving to be harmless to our body.

For these reasons, the use of scratched cookware poses no risk to the health of consumers, however it is recommended that they be replaced simply because they cease to perform their specific non-stick function.

As evidence of its chemical inertness, and therefore of its safety, it should be noted that the fluoropolymer used in non-stick coatings is also used in surgical procedures to coat pacemakers and in thoracic surgery.

Pans with non-stick coatings can be heated to temperatures of up to 260°C without damaging the coating. This temperature is much greater than that required to boil, fry or cook in the oven.

For example:
- water boils at 100°C,
- meats are normally browned at temperatures ranging from 200 to 240°C,
- in the oven, the highest temperatures used for cooking poultry or vegetables are around 230 °C. Cakes and biscuits are usually baked at temperatures between 160°C and 200°C.

It is important to bear in mind that the maximum cooking temperature recommended for maintaining the nutritional value of food in the absence of liquids, such as grilling, is 250°C.

The use of non-stick utensils offers the following advantages:
1. Safety for human health since the food does not stick to the bottom, preventing the development of harmful or even toxic substances due to the combined effect of overheating and dehydration.
2. A healthy diet, since non-stick pans allow you to cook without oil and fat.

In September 2011, the italian magazine Altroconsumo examined various non-stick pans, which they subjected to rigorous tests. In addition to the various benefits the various models were shown to provide, the study highlighted the lack of health risks. Even when the coatings were scratched, no release of hazardous substances was detected.

Non-stick coatings can be applied to cooking utensils using different techniques.

The technique that results in the best quality, and therefore the longest-lasting wear, is spray application. Among the coatings applied by spraying, additional distinctions can be made that differentiate the quality levels based on the total thickness and the number of layers applied.

The duration and performance of a non-stick utensil essentially depends on the thickness of the pan and the quality of the coating. Overheating, abrasions and scratches are the factors that influence the duration the most.

A quality coating applied to a thin pan is a contradiction since the utensil will easily overheat and the resulting hot spots will compromise even the best coating. All of the previously mentioned considerations regarding the thicknesses of aluminium utensils also apply to aluminium non-stick utensils, with the addition of the fact that a sufficiently high thickness acts as a safeguard for the thermal coating itself.

A considerably important factor for ensuring the duration and quality of a non-stick utensil is the aluminium body.
In particular, it may be obtained using different technologies, of which two are the most used:
1. Cold plastic deformation (drawing, stamping)
2. Die casting

In the first case, the item is made by the cold deformation of an aluminium sheet that is produced from lamination. In the second case, the item is made by injecting aluminium in its molten state into a metal mould.

The alloys used for making utensils through die-casting contain fluidifying substances, such as silicon, zinc, copper and tin. For this reason the aluminium content is usually between 86% and 87%.

In the case of utensils obtained by cold deformation, the content of aluminium is between 98% and 99.5%, an indicator of high purity. For this reason, the unpainted parts of die-cast items, when placed in the dishwasher, tend to oxidize very quickly, releasing a black patina.

On the other hand, die-cast containers offer the advantage of being made with an extremely high thickness that cannot be obtained using other techniques with the exception of cold forging which, thanks to the use of powerful hydraulic presses (5000 tonnes), distribute the material at cold temperatures in a differentiated manner, concentrating it in the most important points such as the bottom.

Cold forged aluminium has a high purity level of the alloy used because it is produced by laminating a primary casting plate. As a result, the production cycle is beneficial in terms of emissions and energy consumption compared to other production techniques. The production process is also important for obtaining the quality of the non-stick coating.

In the case of items made by die-casting, during the casting process inclusions of air can occur that are released later from the utensil during the cooking process. This results in a phenomenon known as blistering, or the presence of bubbles in the non-stick coating.

To ensure a longer duration of non-stick coatings, it is recommended not to use sharp metal utensils, not to cut the food inside the cookware and to use cooking utensils made of wood, plastic or silicone. It is always recommended to use a heat source that is suitable for the dimensions of the bottom of the utensil and to centre the utensil over the heat source. Furthermore, it is always sufficient to cook over a moderate flame.

In some cases, a layer with a high surface hardness of titanium oxides is deposited between the aluminium substrate and the non-stick coating to give the latter greater resistance to scratching. The latest innovations to join the world of coatings are the white non-stick coatings and the stone-look coatings. The light colour of the white non stick coatings is particularly appreciated in the professional cooking field, allowing chefs to better monitor the degree of transparency of the food being cooked. Both the white and the stone-look coatings combine the features of a traditional non-stick coating with a special appearance. All non-stick coatings made using PTFE do not contain nickel, heavy metals or PFOA.


The federal regulation of the American Food & Drug Administration on fluoropolymer-based materials intended for use in contact with food can be accessed from the following link.


The recommendation of the German Federal Institute for Risk Assessment (BfR) on materials intended to come into contact with food, in this specific case on the polymer coating systems used in the field of cookware, can be downloaded from the following link.

Ceramic has recently joined the world of cookware coatings. This coating, made with a ceramic material, is produced using SOL-GEL technology. They are usually hybrid organic-inorganic coatings with intermediate properties between those of organic polymers and vitreous oxides.

The ceramic coating offers non-stick performance that is inferior to that of conventional fluoropolymer-based coatings available on the market.

To ensure the performance and long life of cookware with ceramic coatings, the dishwasher should be avoided. It is difficult to cook dry foods in these utensils without the addition of condiments.

This cookware is ideal for obtaining golden and crispy results. Since ceramic coatings are glassy by nature, they are more fragile than polymeric coatings.

While ceramic coatings have a high thermal resistance, it is important to note that the maximum recommended cooking temperature for maintaining the nutritional value of food in the absence of liquids, such as grilling, is 250°C.
The steels most commonly used in cooking utensils are stainless steels, especially austenitic stainless steels. These are essentially chrome-nickel alloys that may contain elements such as molybdenum, titanium etc. that influence their rust-resistance properties.

Austenitic stainless steels have a significant ductility which makes them particularly suitable for deep draw stamping. One of the most widely used is AISI 304 steel, also known as 18/8 stainless steel or 18/10, which nominally contains 18% chromium and 8-10% nickel.

They also possess excellent resistance and hardness qualities and, in terms of the finished product, offer superior mechanical and superficial properties when compared to aluminium. However, the poor thermal conductivity of stainless steel leads to frequent problems of overheating of the walls in direct contact with the flame which may cause the food to burn.

The thermal conductivity of austenitic stainless steel is equal to 15 W/m K while that of aluminium is equal to approximately 230 W/m K.

To overcome this scarce ability to distribute heat, steel cookware is often equipped with aluminium heat diffusing bottoms that are encapsulated or welded to the bottom of the piece.

The ability to transmit heat to the walls of the utensil is limited.

Stainless steel pans are especially used for cooking techniques in which heat is transmitted from water, such as boiling, due to the low thermal conductivity of the metal.

The specific weight of steel is about 7.8 kg/dm³, almost 3 times greater than that of aluminium (2.7 kg/dm³). This characteristic limits its manoeuvrability: a stainless steel pot weighs three times more than an aluminium pot of the same size and thickness.

Stainless steel with non-stick coating for use on cooking hobs:

one type of stainless steel on the market is the one with a non-stick coating. It is generally used for manufacturing frying pans and saucepans that make it easier to cook foods that tend to stick to the surface if cooked using utensils without a non-stick surface. It should be stressed that the combination of a non-stick coating and a material with low thermal conductivity, such as stainless steel, can lead to the overheating of the non-stick coating and cause hot spots.

Stainless steel ovenware with non-stick coating:

widely used for oven cooking, this type of stainless steel is firstly given a non-stick coating using coil coating technology and then pressed into the shape of the desired cooking utensil. The basic material used for these utensils is deep drawn carbon steel. This material is not stainless and can therefore corrode if it is not dried immediately after washing. Corrosion appears in the form of rust and these items should therefore not be put in the dishwasher. In any case, this rust (iron oxide) is not dangerous to human health.

PTFE-based non-stick coatings do not contain nickel, heavy metals or PFOA.

Legislation and regulations concerning non-stick aluminium:

The following link can be used to access the federal regulations of the US Food and Drug Administration concerning fluoropolymer-based materials that are intended to come into contact with food substances.


Via the following link it is possible to download the recommendation of the German Federal Institute for Risk Assessment concerning materials that are intended to come into contact with food substances, particularly polymer coatings used for cooking utensils.

Copper is a metal that offers high thermal conductivity (390 W/mK). It is second only to silver on the scale of conductors. This feature makes it an excellent material for making cooking utensils.

The aspect that limits its use the most is cost. Tinned copper cookware is often prohibitively priced, due to the high cost of the raw materials and the tinning process that is still performed using traditional methods. However, these pieces last forever since they can be re-tinned on the inside and re-polished on the outside.

Since copper stains easily, it is recommended to occasionally rub the outer layer with lemon that has been sprinkled with salt, or vinegar and coarse salt, or a mixture of vinegar and corn flour. It is best to not wash it in the dishwasher.

Copper is a metal with a high specific weight 8.9 kg/dm³. Therefore, containers made of copper are very heavy and unwieldy.

For all of these reasons, today the use of copper cooking utensils is almost exclusively limited to the professional field. Copper is also not suitable for contact with food and is often covered with a layer of tin or combined with other materials suitable for contact with food, such as steel or aluminium. In this case, the material is no longer considered to be copper but co-laminated copper-steel or copper-aluminium.

Technically speaking, different metals are paired together using a metallurgical process referred to as cladding. When combined with aluminium, the copper utensil may also be finished with a non-stick coating.

Today, this version of copper is the most technologically advanced solution available on the market, able to combine, in a single product, the performance of a normal non-stick aluminium utensil and that of a copper utensil.
Iron is a material with low thermal conductivity but one which is highly popular in the kitchen, especially for cooking meat and fried foods.

Iron is recommended for use when high cooking temperatures must be reached.

Iron is not suitable for use in the dishwasher as it tends to rust easily when it comes in contact with water.
Earthenware is a special type of ceramic material or an inorganic, non-metallic material that is flexible in its natural state and rigid after curing. It is usually made from clay, feldspar, silica, quartz, iron oxide and aluminium.

Earthenware is a thermal insulator. Therefore, utensils made of this material heat up very slowly and give off the heat they have absorbed more slowly, keeping the food inside hot for a long time.

Earthenware pots are ideal for cooking dishes that require cooking over a low heat without temperature changes and for foods that need to be heated up gradually and evenly, such as pulses, rice, vegetable soups and meat stews.

The earthenware pots used for cooking are glazed inside and out (only the bottom is not treated).

One characteristic that has limited its popularity the most is its fragility.

We recommend that you avoid subjecting earthenware utensils to sudden temperature changes.

Before use, a new earthenware pot should be left to soak in cold water for at least 12 hours. To prevent breakage, it is also advisable to soak it for a few minutes before each use to allow the clay that has dried up during cooking to rehydrate.

Avoid placing it over a direct flame and use a mesh heat diffuser that allows the heat to spread evenly. During cooking, avoid scratching the glaze and do not use metal utensils for stirring.

Earthenware pots are simple to wash by filling them with hot water for a few hours to remove all of the fat that has become embedded over the long cooking time. Proceed by washing with a little washing-up liquid and an anti-scratch sponge to avoid damaging the glaze, then rinse thoroughly.

Once washed, the pot must turned over to dry, allowing the moisture to evaporate from the bottom which ensures the long-life of the utensil.
Porcelain is a special type of ceramic, which is obtained from mixtures of a particular white clay (kaolin), with the addition of feldspar and quartz which are then fired at temperatures of between 1300 and 1400°C.

Porcelain utensils should not be confused with aluminium or steel utensils that are coated with ceramic finishes. These have nothing to do with porcelain, they only appear similar due to the light colour of the interior lining.

Porcelain cooking utensils are extremely hard and have a low level of porosity. They are ideal for the preparation of soups and sauces and can be used in traditional and microwave ovens. When placed over a flame a special heat diffuser should be used, although special models have been designed and developed to withstand direct flames.
Cast iron is an iron-carbon alloy with a high carbon content (>2.11%). This material is perfect for grilling and for cooking soups and stews because by accumulating heat, it allows food to slow-cook over a low heat. Today, many cast iron utensils are sold coated with a non-stick material, which makes them easier to clean. In fact, washing is the main disadvantage of cast iron cookware: it is necessary to wait for it to cool down before cleaning to prevent it from breaking. In order to prevent rusting, cast iron cookware without a protective coating should be periodically heated and rubbed with oil.

It is one of the materials that best retains heat, slowly diffuses and distributes it in a perfectly homogeneous manner, regardless of the type of hob. Enamelled cast iron is just as effective at staying cold, so it can be used for storing food in the refrigerator.

Cast iron has a high specific weight, therefore cast iron utensils are extremely heavy and difficult to manoeuvre.

If the enamel is of superior quality, it is highly resistant to thermal shock, high temperatures and even scratching, making it ideal for cooking over a high heat to roast, grill and caramelize foods.
Soapstone is a metamorphic rock primarily composed of talc and magnesite. This material is highly resistant to temperature and has an impressive ability to accumulate heat. Both slabs and actual pots can be made with this material. The slabs, usually quite thick, can be positioned above the embers of the barbecue or fireplace. They are usually made with a metal frame, to make them stable for use in the fireplace, and with handles so they can be moved.

Ideal for cooking meat, fish and vegetables. Pots and pans made from soapstone are suitable for slow cooking dishes that are stewed and braised in a sauce. Thanks to its high thermal capacity, once the soapstone pot is heated, it maintains a constant and uniform temperature.

Some of its negative aspects include its considerable weight and the fact that it takes a long time to heat up and then cool. In fact, the temperature of soapstone must be increased gradually with any type of heat source (BBQ, gas, fireplace).

Foods can be cooked without adding fat. The cost of this type of cookware is high and significantly superior to that of a normal saucepan in non-stick aluminium.

The first time you use a soapstone utensil it should be washed with salt water and dried carefully. Do not wash with detergents. The utensil should then be greased with olive oil that is left on for one day.

It is recommended to heat the utensil gradually over a heat source making sure that the flame is evenly distributed over the entire surface to avoid different dilations that may cause breakage. When used on a gas stove a heat diffuser must be used. A soapstone utensil should never be cooled using cold water, but allowed to cool slowly. Once it is warm, clean with a cloth soaked in vinegar and a scraper or iron brush.
Borosilicate glass, sometimes referred to using the trade name Pyrex, is a material that is particularly suitable for use in contact with food substances.

Its advantages include chemical inertness, transparency and heat resistance, making it ideal for use as a material for cooking utensils.

However, glass is not a good thermal conductor, a characteristic that limits its use in traditional ovens or in the microwave.

Unfortunately, glass is fragile and not very resistant to sudden temperature changes.
Silicone moulds are innovative utensils that have recently appeared on the market. Used primarily for preparing cakes, they offer certain advantages: cakes bake more quickly and are easier to remove and the moulds fold back on themselves, taking up less space.

Silicone moulds can generally be used at a wide range of temperatures (typically -40°C to +250°C) and can be moved from the oven to the freezer. These pieces can also be used in the microwave.

Moulds are produced in a variety of shapes, colours and sizes. The consistency of the mould may, however, constitute a limitation: for example, if the mixture is liquid, it must be placed on an oven rack first before filling, given the difficulty of handling the mould once it is full.

However, some doubts about silicone moulds persist. In particular, the fear is that silicone may release certain components to mixtures while baking. In 2007, the Italian magazine Altroconsumo examined various silicone moulds on the domestic market and subjected them to migration testing to verify their suitability for contact with food. Under the legislation in force in Italy (in truth, no Italian law specifically regulates silicones but a law was adopted for plastics as required by the European resolution on silicones) all samples appeared to be in good standing. However, the test conducted by the magazine revealed that a particularly high amount of substances can migrate from the silicone to the mixture the first time the mould is used. It was also observed that, when washed in the dishwasher, the migration of undesirable substances was reduced.

As a result, consumers are advised to wash moulds in the dishwasher before using them, and even to bake a simple batter of flour, yeast and vegetable oil in the mould the first time it is used, to be discarded once it is baked.

We recommend buying good quality silicone moulds. In particular, it is advisable to use platinum silicone in the food sector because the quality of this type of silicone, obtained using a platinum catalyst, is better and safer than silicone made using a peroxide catalyst, which is preferable for use in different fields such as the industrial sector.

Another important aspect is the post heat treatment the product is subjected to at the end of its production cycle: this treatment ensures the elimination of any possible presence of volatile substances to ensure maximum safety for the consumer.

The Resolution of the Council of Europe on the use of silicones in food applications can be downloaded from the following link.

http://www.coe.int/t/e/social_cohesion/soc-sp/public_health/food_contact/PS%20E%20SILICONES%20VERSION%201.pdf

The recommendation of the German Federal Institute for Risk Assessment (BfR) on materials intended to come into contact with food, in this case silicones, can be downloaded from the following link.