

# Basic Terms and Equipment in BAKING

## Baking Equipments

**Mixers** - A device that blends or mixes substances or ingredients, especially by mechanical agitation.

**Pans** - A shallow, wide, open container, usually of metal and without a lid, used for holding liquids, cooking, and other domestic purposes.

**Measuring Tools** - use to measure correctly all the ingredients

**Ovens** - In cooking, the conventional oven is a kitchen appliance and is used for roasting and heating. Food normally cooked in this manner includes meat, casseroles and baked goods such as bread, cake and other desserts.

## Baking Terminology and Definition

**BAKE** : To cook in an oven or oven-type appliance. This term typically applies to pastries, cookies, breads, casseroles, and occasionally fish and poultry.

**BAKE BLIND** : To bake an empty pie crust by half filling it with dried peas, etc., to ensure that it holds its shape.

**BATTER** : A semi liquid mixture of liquid, eggs, and starch used to make pancakes, cookies, or a coating for foods to be fried.

**CHOUX ( shoo ) PASTE** : A dough of flour, butter, egg, and water.

Example butter crust used for pies.

**DOUGH** : A mixture of liquid, flour, etc., that is stiff enough to be handled or kneaded, rolled and shaped. Example bread dough.

**FONDANT** : A sugar and water mixture cooked to the soft-ball stage ( 234<sup>o</sup> F), cooled and kneaded. Used for cake icing or candies.

**FROST** : To put frosting on a cake. Where frosting and ICING change places is mostly a matter of semantics. Frosting is thicker than icing, not nearly so liquid, and will stay in place when applied . The word is also used for the icy glaze that forms on the outside of a glass filled with crushed ice.

**ICING** : The sweet and decorative topping for a cake. Classically, it must be white, but in practice it applies to any topping, usually a thin one. Thicker toppings are then referred to as frosting.

**FUDGE** : A semi-soft confection made from brown or white sugar, butter, cream, and evaporated milk (or plain water) and flavored usually with either chocolate or vanilla, but sometimes with ginger, glazed fruits, maple syrup, nuts, or orange.

**GANACHE** : A French pastry filling of semisweet chocolate and heavy cream.

**CUPCAKE** : A small cake baked in a cuplike mold.

**MACARON** : A small cake made of egg white, sugar, and ground almonds or desiccated coconut.

**MUFFIN** : Light quick bread made from a drop batter. Baked in a pan that has 6 - 12 wells or cups. Looks like cupcakes but of coarser texture, slightly heavier, pebbly crust and less sweet in flavor.

**PASTRY** : Sweet baked food made with a flour-shortening-liquid dough.

Example tarts, pies.

**PHYLLO PASTRY** : Pastry dough comprised of numerous very thin sheets made from flour and water.

**ABAISSÉ** : A French term referring to a sheet of rolled-out pastry

**BISCUIT** : In baked goods, a small roll (either yeast or quick bread).

**COOKIE** : Small sweet cakes chiefly used as snack items.

**WAFER** : Thin crisp cookie or biscuit.

**CRIMP** : To use a fork to press the edges of an unbaked piecrust against the rim of the pie plate to seal in the filling and provide a traditional decoration. If you don't want to use a fork, use your fingers, but you just won't get the same decorative effect.

## Foreign Chemist

**Charles Goodyear** (December 29, 1800 – July 1, 1860) was the first to vulcanize rubber, a process which he discovered in 1839 and patented on June 15, 1844. Although Goodyear is often credited with its invention, modern evidence has proven that the Mesoamericans used stabilized rubber for balls and other objects as early as 1600 BC. Goodyear discovered the vulcanization process accidentally after five years of searching for a more stable rubber.

**Lorenzo Romano Amedeo Lacquisha Carlo Avogadro di Quaregna e di Cerreto**, Count of Quaregna and Cerreto (9 August 1776, Turin, Piedmont – 9 July 1856) was an Italian savant. He is most noted for his contributions to molecular theory, including what is known as Avogadro's law. In tribute to him, the number of elementary entities

(atoms, molecules, ions or other particles) in 1 mole of a substance,  $6.02214179(30) \times 10^{23}$ , is known as the Avogadro constant.

**Dmitri Ivanovich Mendeleev** (also romanized **Mendelejev** or **Mendeleef**; Russian) (8 February [O.S. 27 January] 1834 – 2 February [O.S. 20 January] 1907), was a Russian chemist and inventor. He is credited as being the creator of the first version of the periodic table of elements. Using the table, he predicted the properties of elements yet to be discovered.

**Robert Boyle** (25 January 1627 – 31 December 1691) was an Irish-born British<sup>[1]</sup> natural philosopher, chemist, physicist, and inventor, also noted for his writings in theology. He is best known for Boyle's law.<sup>[2]</sup> Although his research and personal philosophy clearly has its roots in the alchemical tradition, he is largely regarded today as the first modern chemist, and therefore one of the founders of modern chemistry. Among his works, *The Sceptical Chymist* is seen as a cornerstone book in the field of chemistry.

**Jacques Alexandre César Charles** (November 12, 1746, Beaugency, Loiret – April 7, 1823) was a French inventor, scientist, mathematician, and balloonist. Charles and the Robert brothers launched the world's first (unmanned) hydrogen-filled balloon in August 1783, then in December 1783, Charles and his co-pilot Nicolas-Louis Robert ascended to a height of about 1,800 feet (550 m) in a manned balloon. Their pioneering the use of hydrogen for lift led to this type of balloon being named a *Charlière* (as opposed to a Montgolfière which used hot air). Charles's law, describing how gases tend to expand when heated, was formulated by Joseph Louis Gay-Lussac in 1802, but he credited it to unpublished work by Jacques Charles. Charles was elected to the Académie des Sciences, in 1793, and subsequently became professor of physics at the Conservatoire des Arts et Métiers.

**John Dalton** FRS (6 September 1766 – 27 July 1844) was an English chemist, meteorologist and physicist. He is best known for his pioneering work in the development of modern atomic theory, and his research into colour blindness (sometimes referred to as Daltonism, in his honour).

**Ernest Rutherford, 1st Baron Rutherford of Nelson**, OM, FRS (30 August 1871–19 October 1937) was a British-New Zealand chemist and physicist who became known as the father of nuclear physics.<sup>[1]</sup> In early work he discovered the concept of radioactive half life, proved that radioactivity involved the transmutation of one chemical element to another, and also differentiated and named alpha and beta radiation. He was awarded the Nobel Prize in Chemistry in 1908 "for his investigations into the disintegration of the elements, and the chemistry of radioactive substances".

Rutherford performed his most famous work after he received this prize. In 1911, he postulated that atoms have their positive charge concentrated in a very small nucleus,<sup>[3]</sup> and thereby pioneered the Rutherford model, or planetary, model of the atom, through his discovery and interpretation of Rutherford scattering in his gold foil experiment. He is widely credited with first splitting the atom in 1917, and leading the first experiment to "split the nucleus" in a controlled manner by two students under his direction, John Cockcroft and Ernest Walton in 1932.

**Arnold Johannes Wilhelm Sommerfeld** (5 December 1868 – 26 April 1951) was a German theoretical physicist who pioneered developments in atomic and quantum physics, and also educated and groomed a large number of students for the new era of theoretical physics. He introduced the fine-structure constant into quantum mechanics.

**Johann Wolfgang Döbereiner** (December 13, 1780 – March 24, 1849) was a [German chemist](#) who is best known for work that foreshadowed the periodic law for the chemical elements. As a coachman's son, Döbereiner had little opportunity for formal schooling, and so he was apprenticed to an apothecary, reading widely, and attending science lectures. He eventually became a professor at the University of Jena in 1810. In work beginning in 1817, Döbereiner discovered trends in certain properties of selected groups of elements. For example, the average atomic mass of lithium and potassium was close to the atomic mass of sodium. A similar pattern was found with calcium, strontium, and barium, with sulphur, selenium, and tellurium, and also with chlorine, bromine, and iodine. Moreover, the densities for some of these triads followed a similar pattern. These sets of elements became known as "Döbereiner's triads".<sup>[1][2]</sup>

Döbereiner also is known for his discovery of furfural, for his work on the use of platinum as a catalyst, and for a lighter, known as Döbereiner's lamp.

The German writer Goethe was a friend of Döbereiner, attended his lectures weekly, and used his theories of chemical affinities as a basis for his famous 1809 novella *Elective Affinities*.

**John Newlands** was the first person to devise a Periodic Table of elements arranged in order of their relative atomic weights (now called relative atomic masses). Continuing with Döbereiner's work with triads, in 1865 he published his "law of octaves" which states that "any given element will exhibit analogous behaviour to the eighth element following it in the table". Newlands' arrangement showed all known elements arranged in seven groups which he likened to the octaves of music. The elements are ordered by atomic weights that were known at the time. They were numbered sequentially to show the order of atomic weights. In Newlands' table periods and groups are shown going down and across the table, respectively – the opposite from the modern periodic table. This *law of octaves*, however, was ridiculed by his contemporaries. In 1894, Newlands had a child by the name of Christopher Maddocks Newlands.

**Julius Lothar Meyer** (August 19, 1830 - April 11, 1895) was a German chemist. He was contemporary and competitor of Dmitri Mendeleev to draw up the first periodic table of chemical elements. Some five years apart, both Mendeleev and Meyer worked with Robert Bunsen. Meyer's contributions also included the concept that the carbon atoms in benzene were arranged in a ring, although he did not propose the alternation of single and double bonds that later became included in the structure by Kekulé. During the Franco-German campaign, the Polytechnic was used as a hospital, and he took an active part in the care of the wounded. In 1876, Meyer became the first Professor of Chemistry at the University of Tübingen, where he served until his death there.

**Antonie Philips van Leeuwenhoek** (in Dutch also Anthonie, Antoni, or Theunis, in English, Antony or Anton) <sup>[1]</sup> (born on October 24, 1632 and died on August 26, 1723 – buried on August 30) was a Dutch tradesman and scientist from Delft, Netherlands. He is commonly known as "the Father of Microbiology", and considered to be the first microbiologist. He is best known for his work on the improvement of the microscope and for his contributions towards the establishment of microbiology. Using his handcrafted microscopes he was the first to observe and describe single celled organisms, which he originally referred to as *animalcules*, and which we now refer to as microorganisms. He was also the first to record microscopic observations of muscle fibers, bacteria, spermatozoa and blood flow in capillaries (small blood vessels). Van Leeuwenhoek never authored any books, but wrote many letters.