

GLOSSARY.

ANALYSIS, as a chemical operation, consists in the separation of compound substances into their component parts.

QUALITATIVE ANALYSIS, is the operation of showing merely *the nature* of the bodies making up any compound.

QUANTITATIVE ANALYSIS, is the operation to discover the *exact amount* of each separate constituent.

A **SPECIAL QUALITATIVE OR QUANTITATIVE ANALYSIS**, is that which shows the nature or exact quantity, as the case may be, of any number of bodies composing a compound, short of the whole number.

ELEMENT, a simple body—Elementary bodies are those which are not composed of two or more *different* substances.

ATOM, the smallest particle of matter, necessarily incapable of further division.

CHEMICAL AFFINITY, OR AFFINITY, is that property of the atoms of bodies which causes them to form new combinations, producing new bodies different from those which existed previous to the development of this property. It is the *force* which occasions the union of *different* kinds of matter, whether simple or compound, and the greater the difference of the properties of bodies the stronger appears to be this species of attraction between them.

ACID, a substance whether sweet, sour or tasteless, which *combines with bases*, forming with them a class of bodies called salts.

BASE, a term extended to embrace a large group—compounds of the metals, (with the exception of ammonia) with those substances which support combustion—which having any taste *are not sour*, which are not disposed to unite with each other, but unite readily with acids forming with them a class of bodies called salts.

ALKALI, an Arabic word applied to bodies having a peculiar caustic taste, in all of their properties the reverse of acids—all alkalies are bases. Caustic potash is a familiar example of an alkali.

SALTS, bodies formed by the union of an acid and a base, having properties distinct from either the acid or the base which enter into their composition.

GAS, matter existing in an æriform state, differing from vapour in requiring a much greater force for its condensation. It has different names according to the substance of which it is composed; sometimes it exists as an element, and is then named from some prominent characteristic—thus we have carbonic oxide gas, composed of carbon and oxygen, and oxygen gas, which is an element.

OXYGEN, a gas most extensively diffused throughout nature, always in combination with some other substance, either mechanically, as in the air; or chemically as in water. It has strong affinity for almost all bodies, and received its name from two Greek words, *oxus*, signifying sour or acid, and *gennaein*, to produce, because when first discovered it was supposed to be the source of acidity—it sometimes is called Vital Air, because it is necessary to the life of animals and vegetables.

COMBUSTION.—The union of oxygen with any other body accompanied by light and heat.

OXIDATION.—The union of oxygen with another body, without the concurrence of light and heat. When oxygen unites with metals it produces what is called Rust.

HYDROGEN.—A body very extensively diffused through the world, forming a large part of all vegetable matter, and about two thirds of all water. It is the lightest of all bodies, and on that account used to fill balloons; with oxygen it forms