

shining metal, Chlorine a suffocating gas. When they combine the resulting compound is common salt.

All the Elements have names by which they are distinguished, and the compounds formed by their union have likewise names expressive of their composition. Sodium and Chlorine, when they combine, form, as we have seen, common salt, the chemical name for which is Sodium Chloride, that is a compound of Sodium and Chlorine. Carbon (the most familiar form of which is charcoal) combines with Oxygen in two proportions, and the two resulting compounds are called respectively Carbon Monoxide, and Carbon Dioxide, to indicate that in the first there is one atom of Oxygen, and in the second two; this latter substance was first known as fixed air, and is still often called Carbonic Acid gas, a name given to it before our present system of chemical nomenclature was made as perfect as it now is. A compound of Oxygen and one other Element is called an Oxide, of Chlorine and one other Element a Chloride, of Sulphur and another Element a Sulphide, of Iodine and another Element an Iodide, and so in other cases.

When the Oxide of a Non-metallic Element unites with water it forms *an acid*, that is a compound which, in many cases, has a sour taste and reddens litmus. When the Oxide of a metal combines with water on the other hand it forms *an alkali*, turning the red litmus blue, or *a base*.

When two such compounds, a base and acid, are brought together, they unite, and a new compound is formed, which is neither acid nor alkiline (or basic), but neutral; it is usually soluble and crystallizable, and is called *A Salt*. Many of the compounds contained in the soil, in manures, and in food, are salts, or are built up in the same way. Land Plaster is Oxide of Calcium (Lime) combined with Sulphuric Oxide, and is hence called Calcium Sulphate by the Chemist; the same Oxide united with Carbon Dioxide