

# A Brief History of Space Chemistry

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## Description

Thermal equilibrium, and hence the physical structure of The ISM depends on the chemical composition of the gas, because Gas cooling dominates the line emission, which depends on Special chemistry is particularly important in the star Formation of regions, as chemical complexity may occur in those areas The result on terrestrial life, either directly, or, is a lot More likely, the emission of the molecule line indirectly, and therefore on Abundance: In other words, the physical structure of the ISM depends On the chemical composition of gas.

Both processes are important, even if not for the same molecules and/or in the same area. In fact, there is a strong interaction these two mechanisms in the process of making simple and complex Molecules [1]. Molecules formed in the gas phase can be brittle Grain surfaces, where they can undergo further chemical reactions, and eventually they can be brought back into the gas phase Different, usually more complex molecules. Once in the gas phase in their new form they can initiate and undergo new chemical reactions. Promote more change or new reactions.

The study of this chemistry in space is variously described as Aastro-chemistry, Cosmo-chemistry. Elements formed by stellar nucleosynthesis can combine to form different types of molecules. Places old, quiet surrounds circumstantial envelopes and planetary nebula Stars, Interstellar medium (ISM) and disc around the proto star circumstantial from which planets can be formed the interstellar medium is the case between stars. In terms of number density it is about 90% hydrogen, 9% helium and 1% heavy element [2]. Working in different regions of the electromagnetic spectrum, astronomers have measured the composition of gas and, to a lesser extent, dust particles. Fundamental abundance in the gas meets the wires where the hydrogen is Dominates, the concentration of helium is probably 10% Hydrogen, and important elements carbon, nitrogen and Oxygen hydrogen densities are 103-104. Some of the Heavy elements found in wires are strongly eliminated. Diffuse Cloud Gas; probably these elements (eg. silicon) are Dust particles included [3]. As in most sources the sky is more basic oxygen than carbon. In addition to this Entered rows are several hundred unknowns Absorption lines, many of which are wider than customary.

These are the so-called "diffuse interstellar bands" Unknown for most of the last century, and now thought Caused by rather large and foreign organic molecules.

## Formation of molecules

Earth's surface is a quiet, high-density chemical environment. Two atoms to come together the kinetic energy of atoms must be correct to form a molecule. If the velocities Atoms are too small, not enough energy to overcome their repulsion related electrons. On the other hand, if the velocities are too high, the molecule has too much only a fleeting existence before separating itself [4]. But in a high density situation, such As the Earth's atmosphere, three atoms are more likely to collide together; whereby the kinetic energy of the third atom is enhanced by its kinetic energy the extra energy away allows two other atoms to form a stable molecule. Sodium chloride (NaCl) is an example of an ionic compound, or compound formed by ionic bonds [5]. Water (H<sub>2</sub>O) is often called a molecular compound, but is also known as a covalent compound because it is a compound formed by covalent bonds.

## Physico-chemical processes

The chemistry of ISM can be divided into four groups of processes. The first is interaction with high-energy cosmic-ray particles, while the second UV photons are made up of photo-induced processes. The third concern is dual intention Gas-phase reactions, and concerns the interaction with the final one grain.

Our galaxy is detected As well as outer galaxies. In fact, the molecules have been detected Galaxies in the farthest regions of the universe Away from us near the speed of light. Nevertheless, much has been learned in the last thirty Years and, paid attention to internet chemistry Chemist, including kineticist and spectroscopist, as well as Astronomers working in all fields of electromagnetic Spectrum will be a major subject of field investigation. Study of molecules H<sub>2</sub>, in particular, is in the era immediately after the Big Bang Well advanced-here H<sub>2</sub> is produced by high temperature gaseous. The most abundant elements after hydrogen and helium include ions H<sup>+</sup> and H<sub>2</sub> There are oxygen and carbon. Very abundant species in Molecular clouds are expected to be H<sub>2</sub>, CO, O, O<sub>2</sub> and H<sub>2</sub>O.

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