

Classification of Matter



**All matter can be classified
as a
Pure Substance
or a
Mixture**



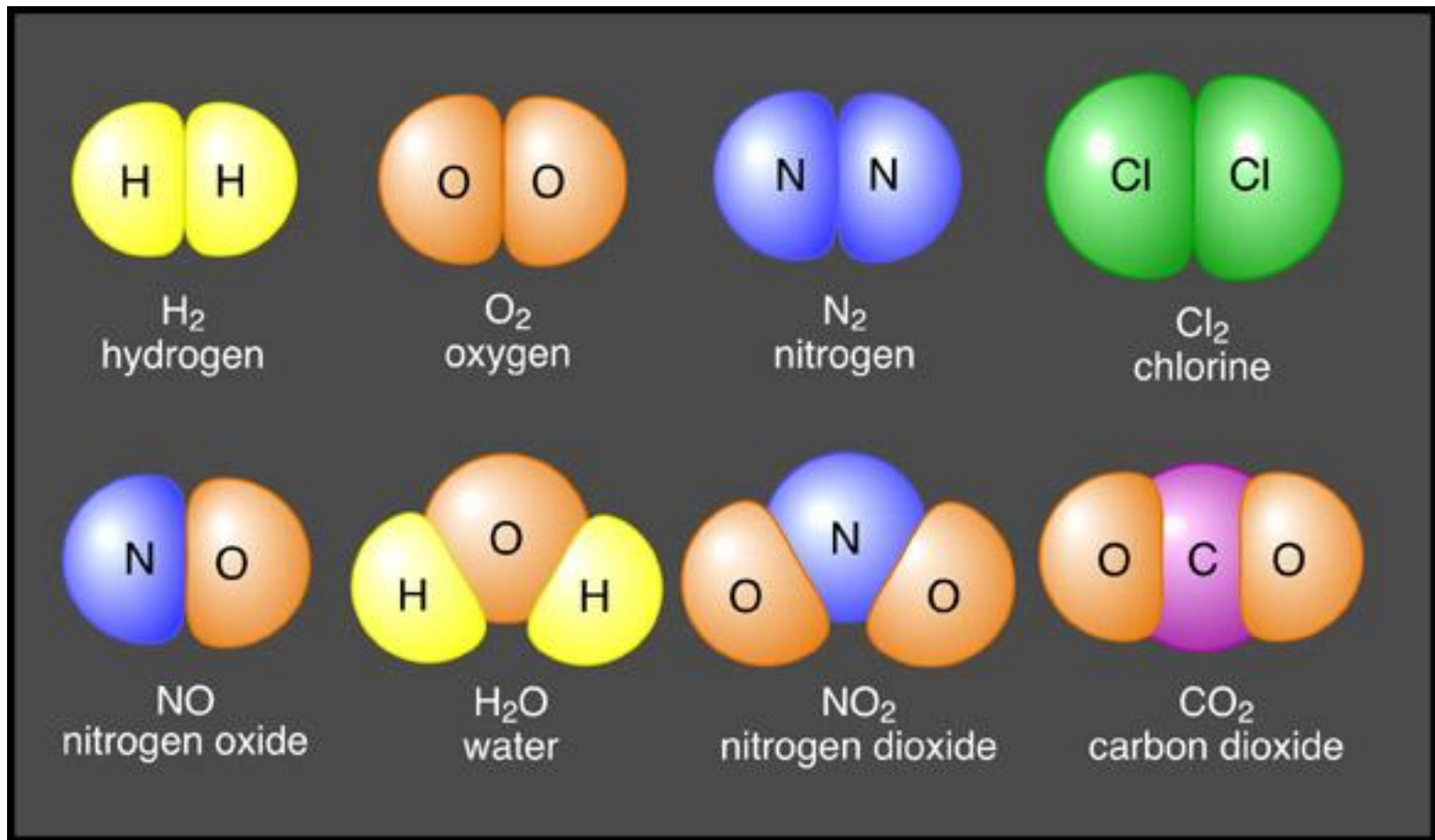
Pure Substance

- **Composed of a single component and has a constant, fixed composition regardless of sample size or origin**



Pure Substance

- **Cannot be separated into other kinds of matter by any physical process**
- **Classified as an**
 - **Element: pure substance that cannot be broken down into simpler substances by a chemical reaction, contains only one kind of atom**
 - **Compound: pure substance formed by chemically combining two or more elements in a fixed proportion**



Molecular Art

Mixture

- **Composed of two or more substances**
- **can be separated by a physical means**
- **Properties can vary because the composition is not fixed**



2 Types of Mixtures

Heterogeneous Mixture: the parts of the mixture are noticeably different

Homogeneous Mixture: the parts are so evenly distributed that it is difficult to distinguish one substance from another



Based on the size of its largest particle size , a mixture can be a:

Solution: when substances dissolve and form a homogeneous mixture

Suspension: a heterogeneous mixture that separates into layers over time

Colloid: intermediate particles dispersed in another substance



Physical Change: alters a substance without changing its composition

Chemical Change: converts one material to another; the substance reacts and forms one or more new substances



Evidence of a chemical change:

- **Change in color**
- **Production of gas**
- **Formation of a precipitate;
which is a solid that forms and
separates from a liquid mixture**