

Definitions for Matter

Substances, components, mixtures ...

Definitions:

Substance: A form of matter that has a definite composition and distinct properties.

Component: Any of the minimum number of substances required to specify completely the composition of all phases of a chemical system.*

(Or: A substance that could be added to another substance by physical means without reaction to modify the properties of the second substance.)

*American Heritage Dictionary

Examples of components:

Salt and water are both pure substances, that is they have one component each. They can be added together to yield a substance with different properties.

The salt and water do not react with each other, rather the salt dissolves in the water - forming salt water.

Definitions:

Substance: A form of matter that has a definite composition and distinct properties.

Component: Any of the minimum number of substances required to specify completely the composition of all phases of a chemical system.*

(Or: A substance that could be added to another substance by physical means without reaction to modify the properties of the second substance.)

Mixture: A substance that is the combination of two or more components.

Homogeneous mixture: A mixture that cannot be separated by mechanical means (excluding nanotechniques)

Homogeneous mixture: A mixture that cannot be separated by mechanical means (excluding nanotechniques)

Generally, homogeneous mixtures appear uniform when inspected with visible light. Examples include:

Salt water: a mix of water and salt - a liquid

White gold: a mix of platinum and gold - a solid mixture

Air: mix of other gasses, nitrogen, oxygen, etc. - a gas mixture

Definitions:

Substance: A form of matter that has a definite composition and distinct properties.

Component: Any of the minimum number of substances required to specify completely the composition of all phases of a chemical system.*

(Or: A substance that could be added to another substance by physical means without reaction to modify the properties of the second substance.)

Mixture: A substance that is the combination of two or more components.

Homogeneous mixture: A mixture that cannot be separated by mechanical means (excluding nanotechniques)

Heterogeneous mixture: A mixture that can be separated by mechanical means.

Heterogeneous mixture: A mixture that can be separated by mechanical means.

Generally, heterogeneous mixtures appear nonuniform when inspected with visible light. Examples include:

Smoke: a mixture of a fine solid in a gas

Fog: a mixture of a fine liquid in a gas

Aerosol: a mixture of a fine gas in a liquid

Paint: a mixture of a fine solid in a liquid

High carbon steel: a mixture of a fine solid (carbon and carbides) in a solid (iron matrix)

The classification of components can be further broken down into elements and compounds.

Elements cannot be broken down further into other substance using energies (or chemical reactions) of less than a megajoule.

(Referring to atomic theory, this means that elements consist of only one type of atom.)

Compounds can be broken down further into other substance using energies (or chemical reactions) of less than a megajoule.

(Referring to atomic theory, this means that compounds consist of atoms that are combined in a definite fashion.)

Definitions for Matter

Substances, components, mixtures ...

THE END