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CHEMISTRY

FOR KIDS

A COMPLETE CHEMISTRY GUIDE FOR BEGINNERS

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Introduction

Thank you for downloading this book Chemistry for Kids - A Complete Chemistry Guide for Beginners.

Many think that Chemistry is a tough subject to learn. But, the truth is, we know a lot about it. We apply Chemistry to everything. In fact, human beings are a result of chemical activity.

We understand how Chemistry works instinctively. However, many of us find it difficult to understand and express it in figures.

This book introduces Chemistry in a simple way for beginners or young students to understand. It shows the different principles of Chemistry using things that we encounter every day.

Also, it encourages many beginners to appreciate the science, instead of being intimidated by it.

I hope that you would learn many things and find Chemistry to be fun through this book.

Again, thanks for downloading this book, I hope you enjoy it!

Chapter 1: Chemistry Matters

Chemistry and Its Uses

Chemistry is the study of matter and its changes. You may find lengthier definitions in other books, but it is basically the study of atoms as it changes to become matter.

Chemistry breaks down matter into elements and determines its composition. It aims to make us understand the established changes and the potential changes that a matter may undergo.

But, why must we understand all these?

The answer is simple. Everything around us is made of matter and everything is bound to change. The reaction to change by a certain matter can be useful or harmful to another matter. Chemistry helps us categorize and control which reaction can become beneficial or harmful.

Thanks to Chemistry, we can develop medicine to cure sickness. We could develop technologies, and produce a variety of products.

Matter

Before starting with Chemistry, one should first understand what matter is, its states and its parts.

Matter is anything that occupies space and has mass. This includes even the objects that have no weight, such as air, light and gases.

It usually comes in four states. These are solid, liquid, gas, and plasma.

Matters in the **solid** state are those that take definite shapes and volume. Examples of these are wood, stone, and sand.

Those in **liquid** state have definite volume, but do not have definite shapes. They only follow the shape of their container. Examples of these are water and oil.

Gas objects are those that have no definite shape and volume. They could not be contained, unless they are compressed. Air and helium are only a few objects in gas form.

The **plasma** state does not exist in Earth, but in outer space. However, some scientists create artificial objects in this state. Examples of objects in plasma state are lightning and neon lights.

Elements and Compounds

Matter may be composed of a single element or a combination of elements.

An **element** is the smallest unit of matter, which could no longer be divided. Examples of elements are gold, silver, and oxygen.

As of today, scientists have discovered about 118 different elements. Earth produces or houses 98 of these elements. The scientist, **Dmitri Mendeleev**, started listing these elements in a **periodic table.**

A **compound** is composed of two or more elements. These elements are bonded together chemically, to create another matter.

Water is one of the basic examples of a compound. Two elements, hydrogen and oxygen, are bonded together to create water.

Understanding elements and compounds are essential in Chemistry because changes can occur due to their existence.

Atoms and Molecules

Matter is also made up of uniform or combined atoms. An **atom** is the smallest unit that creates an element. It has three parts - **the protons, the electrons and the neutrons**. An element changes in form when the number of its protons and electrons are changed.

A group of atoms is called a **molecule.** The number of molecules in an element controls the volume of matter.

Changes in Matter

Matter can change into different forms when its parts are broken apart or rearranged. This could happen in two ways - by **physical change,** or by **chemical change or reaction.**

A physical change occurs when an object changes only in size or appearance, but the arrangements and composition of atoms remain the same. Examples of these are melted ice, crushed solid foods or broken bottles.

A chemical change or reaction occurs when an object loses its original appearance and the composition of its atoms. Chemical change results to a new compound or matter.

A good example of chemical change is burning of wood. The wood loses its appearance as it turns into ash, a different object from the wood.

Below are some experiments that will help you identify physical change or chemical change.

Experiment 1: Dissolving Salt in Water versus Dissolving Sugar in Water

Requirements:

- 5g sea salt
- 50ml water at room temperature
- 5g refined sugar
- 50 ml water at room temperature
- 2 beakers

Instructions:

1. Mix sea salt and water until the salt is dissolved.
2. Mix sugar and water until the sugar is dissolved.
3. Cover the two beakers and leave for at least an hour.
4. Observe.

Possible outcome:

1. You will not see any salt grain in your beaker.
2. You will see sugar grains settled at the bottom of your beaker.

Question:

Which of the two experiment resulted i a chemical change or a physical change?

Answer and explanation:

1. The salt underwent a **chemical change.**

   When you dissolve salt in the water, the sodium, which is an ionic element, develops a chemical reaction with water. Thus, it breaks away from chlorine and combines with the elements of water.

As a rule, a chemical reaction results when ionic compounds are mixed with water. The same result will happen when you use magnesium chloride or calcium chloride.

2. The sugar underwent a **physical change**.
   Sugar is made of covalent elements. When it is mixed with water, which is an ionic compound, the particles would appear dissolved. But, the truth is, the particles only spread out.

   After the water becomes stable, the particles would gather at the bottom of the glass or beaker.

Experiment 2: Boiling Salt in Water versus Boiling Sugar in Water

Requirements:

- 15g sea salt
- 15ml water at room temperature
- 15g refined sugar
- 15 ml water at room temperature
- 2 Erlenmeyer flask or beaker
- 2 petri dishes

- Black construction paper
- Hot plate
- Black paper

Instruction:

1. Dissolve the salt in water and transfer to a flask.
2. Boil the solution in the hot plate while stirring constantly. Continue until the water is reduced to almost none.
3. Cover a petri dish with a construction paper. Transfer the mixture in the flask to a petri dish.
4. Set aside for a few hours.
5. Place the sugar and water in a flask.
6. Boil the solution in the hot plate while stirring constantly. Stir until the sugar caramelizes.
7. Cover a petri dish with a construction paper. Transfer the mixture to the petri dish.
8. Set aside for a few hours.
9. Observe.

Possible outcome:

1. The paper will separate the salt from the remaining liquid.
2. The caramel will not pass through the paper.

Question:

Which of the two experiment resulted in a chemical change or a physical change?

Answer and Explanation:

1. The salt underwent **physical change** only. As the water boils, it undergoes oxidation. The water changes into its gas form.

Sodium and chlorine are heavier than the water molecule and could not turn into gas. Thus, the sodium returns to its ionic state. It will attract the chlorine and return to its salt form.

Also, if we trapped the steam while boiling, the steam would condense and return to its liquid form. Therefore, there was no chemical reaction during the boiling of the solution.

2. The sugar underwent a **chemical reaction.** The oxidation demolished the structure of the sugar. Sugar and water share the same elements - hydrogen and oxygen.

   As the water boils, the carbon in the sugar increases. Thus, the sugar turns brown. The more you boil the water, the more the carbon increases.

   If you heat it more, the sugar molecule will be completely eliminated, leaving behind just carbon.

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Chapter 2: Basic Elements to Learn

Since there are 118 elements, knowing all of them would be difficult. As a beginner, you can start off learning the 12 basic elements in the periodical table. These are the most common elements that you can see everyday. You can create endless chemical substances by combining two or more of these elements. Here is the list:

1. **Hydrogen.** This is the first element in the periodic table. It is represented by letter H. This element consists 75% of all the atoms in the universe. It is present in almost every essential object that we need.

2. Oxygen is the eighth element in the periodic table. It is represented by "O". It is one the most common element that bonds with other elements to form essential compounds. Oxygen is the most essential element every living thing needs.

3. **Helium.** Next to hydrogen, it is the second most abundant gas in the universe. The sun is mostly made up of helium. However, the Earth has limited resources of this gas because it is only formed from decaying actinide metals on the earth's surface. No one has successfully created a compound from helium and other noble gases in its group because of its lightness.

4. **Carbon,** which is represented by "C" in the periodic table, is the sixth element. Like Oxygen and Hydrogen, all living things depend on this element, too. It is essential in the development of our cells, organs, blood, and our entire body. About 20% of our body relies on carbon.

5. Nitrogen is another gas that is essential to almost all matters. 80% of our surface is made of nitrogen atoms. It is both a stable and a reactive element. It is stable when it is alone or in its original gas form. However, it becomes more reactive than oxygen when it is combined with other elements, especially gases.

6. **Sodium** is a metal. It belongs to the first group and third period. "Na" is its symbol. It is also a stable element, which can be used as is or can be combined with other elements.

7. Chlorine is a halogen. Its symbol is Cl. Chlorine is an isolated gas. It is also a reactive element. It reacts better when added to alkaline metals such as those elements in Groups 1 and 2 in the periodic table.

8. Magnesium is represented by “Mg” in the periodic table. It is an alkaline metal. Though it is a stable element, it is more effective when it bonds with other elements.

9. **Aluminum.** One of the most interesting metals on earth is the aluminum, which is the 13^{th} element in the periodic table. It is soft and malleable when it is in its pure form. It becomes stable, but still malleable when added to reactive gases or metals, like oxygen and chlorine. It also helps create a stronger metal compound when added to other metals, like iron (Fe).

10. **Sulfur** belongs to the family of oxygen. It is represented by the chemical symbol “S”. It is non-reactive when its temperature is at normal. Like oxygen, it becomes explosive when it is heated along with metallic and other gas elements.

11. **Silicon** is an element that is related and as abundant as carbon. However, unlike carbon, it is always bonded with other elements. Many people think that it is a metal because of its grayish color, but it is actually a heavy gas. Rocks and sand are compounds created from silicon. This element is essential in many developments we have today. It is a component of the silicates, which are used in making computer chips. It is also used in making pottery, glass, and concrete.

12. **Boron** is the only non-metallic member of group 3 in the periodic table. It is represented by chemical symbol “B”. It is also one of the most abundant elements in the Earth’s crust. It is one of the main ingredients for borax.

Experiment 1: Soap Making

You can create soap by combining materials made from these elements.

Materials:

- 3ml distilled water
- 1g sodium hydroxide crystals (lye crystals)

- 10ml olive oil or coconut oil (melted)
- Petri dishes
- molds
- Beaker or large bowl
- thermometer

Direction:

1. Place the water in the petri dish. Mix in the sodium hydroxide until dissolve.

   The water will become hot as the molecules react with each other. Wait until the lye solution temperature drops to at 40C.

2. Add the solution to the melted oil. Stir and observe how the solution will make the oil thick.

3. When it is thick enough, pour the soap to a petri dish or any mold. You now have a bar of soap. However, you need to wait for 6 weeks before you can use it because the lye is still active and dangerous to your skin.

Experiment 2: Slime

Materials:

- 1ml white glue
- 2ml water
- 1ml borax solution (Sodium Tetraborate)
- Petri dishes
- Food coloring
- Glass stirrer
- Plastic cutting board

Instruction:

1. Place the glue and water in the petri dish.
2. Add the borax solution.

3. Stir until it thickens into a slime.
4. Add food coloring, if desired.
5. Pour the slime to plastic cutting board.
6. Knead to bind all the ingredients well.
7. If not in use, keep in the fridge to avoid any formation of mold.

Chapter 3: Understanding Elements and its Atomic Structure

The Periodical Table

A periodical table is an important tool in Chemistry. The table is used to predict or create chemical reactions among elements. It acts like an ingredient list of every object that can be created. Thousands of matter can be created by combining different elements from the periodic table.

The table was constructed with specific features. Each row and column of the table has meanings. Each cell is also composed of different parts, which are essential in Chemistry.

All the parts of the periodic table are essential for understanding the atomic structure.

Let us understand the construction of the periodic table.

An Element Cell

Here are the parts of the cell:

1. **The element symbol**

Each cell in the table is made for a specific element. The element is represented by one or two letters. These letters are known as the symbols of a specific element. Note that when a symbol is made of two letters, the second letter is always written in lower case. This is to avoid confusion in the formula.

For example: H is for Hydrogen, O is for Oxygen, Fe is for Iron, and Na is for Sodium.

2. **The atomic number**

On top of the element symbol is a number. It is the atomic number. It represents the number of protons in the element. It also shows that the element is in its neutral form. A **neutral element** is one that has an equal amount of protons and electrons. Elements with lower electrons are **ionic elements.** Those with higher electrons are called **covalent** elements. Ionic and covalence elements only exist during chemical bonding.

3. **The element name**

You can locate the element name below the atomic number or below the element symbol. Some periodical tables, especially those used by professionals, do not include the element name in the cell.

4. **The atomic weight/mass**

The atomic weight or mass of an element is often written at the most bottom part of the cell. However, elementary tables do not usually include this.

The atomic mass is important in determining the number of neutron in an element.

Let us illustrate it by using the element Sodium.

The atomic number of sodium is 11. This means that it has 11 protons and, in normal instances, 11 electrons. Its atomic mass is 23. To determine the neutron, we should subtract the numbers of protons from the atomic mass.

$$N = 23 – 11P$$

$$N = 23 – 11$$

$$N = 12$$

Therefore, sodium only has twelve neutrons.

The Periods

The periods are the rows in the periodic table. It represents the atomic shells of each atom. The **atomic shells** are the orbit that holds the atomic orbitals. Its purpose is to stabilize the atom. The **atomic orbital** is the orbit, which the electrons follows to orbit the nucleus.

Each shell can hold specific numbers of subshells. Each subshell can only hold a specific number of electrons.

There are five types of subshell – the s, p, d, f, g (h, i, k or higher). The “s” subshell can only hold 2 electrons. The “p” subshell can only hold 6 electrons. 10 electrons can fit in the “d” subshell and 14 electrons can fit in the “f” subshell”. The “g or higher” subshells can hold a maximum of 18 per orbit.

Theoretically, an atomic shell can hold the following maximum electrons:

- 1^{st} shell – 2 electrons
- 2^{nd} shell – 8 electrons
- 3^{rd} shell – 18 electrons
- 4^{th} shell - 32 electrons
- 5^{th} shell and up – 50 electrons

*Take note that the valence or outer shell does not follow this rule.

The Group

The column in the periodic table represents the group of the elements. The elements under one group have the same number of electrons in the outer atomic shell. The electrons in the outer atomic shell are called **valence electrons**.

Oxygen, being in the sixth column from the left (skipping the metallic elements in the middle), would only have six electrons in its outer shell.

Understanding the Atomic Structure

Using the periodic table, we can draw or conceive the structure of an atom for a certain element. We can also have an idea on how an element can become an ionized or covalent, which is important during chemical bonding.

The most important aspect in the atomic structure is the distribution of electrons. Let us analyze the atomic structure of some elements to help us.

Atomic Structure of Oxygen

Oxygen is found in column 6 and 2^{nd} row. It has an atomic number of 8 and its atomic mass is 16. This means that, in its neutral form, oxygen would have 8 protons, 8 electrons and 8 neutrons. It would have 6 valence electrons and 2 atomic shells.

The atomic structure of oxygen would be:

- The 8 protons and 8 neutrons would go to the nucleus or the center of the atom.
- Since it has 2 atomic shells, draw two layers of circles around it.
- From the periodic table, we know that there should only be 6 valence electrons in the outer shell of oxygen. Hence, distribute the valence electrons first.

  Count the layers. Since there are only 2 layers, the valence shell is the second layer.

  Distribute the 6 valence electrons in the second shell.
- Oxygen only has 8 electrons. With the valence electrons placed, only 2 electrons are left. Distribute these electrons on the remaining shell. Here, we only have one shell left, which can only hold a maximum of 2 electrons.
- Therefore, the atomic structure of oxygen would be a nucleus with 8 protons and 8 neutrons, a first shell with 2 electrons and an outer shell with 6 valence electrons.

Atomic Structure of Potassium (K)

Potassium is on the 4th row and 1^{st} column. It has an atomic number of 19 and atomic mass of 39. Therefore, it has 19 protons, 19 electrons and 20 neutrons. Since it is on the 4th row, it has three atomic shells. It only has one valence electron, based on its column.

To illustrate the atomic Structure of Potassium would be:

- Place the 19 protons and 20 neutrons on the nucleus.
- Draw 4 layers of circles around the nucleus, which represents the outer shell.
- Place one valence electron on the third layer or the outermost layer and

distribute the remaining 18 electron starting from the first shell.

Place 2 electrons on the first shell and place 8 electrons on the second shell. For the remaining 8 electrons, place all of them on the third shell, since it can hold a maximum of 18 electrons.

- In sum, the atomic structure of Potassium would be a nucleus with 19 protons and 20 neutrons, a first shell with 2 electrons, a second shell with 8 electrons, a third shell with 8 electrons and an outer shell with only 1 valence electron.

Atomic Structure of Iodine

Iodine is located on the 7th column and 5th row. Its atomic number is 53 and its atomic mass is 127. This means that it has 53 protons, 53, electrons and 74 electrons. It has 7 valence electrons and 5 shells.

To draw the structure of iodine:

- Place the protons and electrons in the nucleus.
- Draw 5 shells around the nucleus.
- Place the 7 valence electron on the 5th shell. You will be left with 46 shells. Now, distribute the shells by filling the remaining shells from the innermost shell.

  Put 2 electrons on the first shell, 8 electrons on the second shell and 18 electrons on the 3rd shell. With the other shells filled, place all the remaining electrons on the remaining 4th shell.
- Therefore, the atomic structure of iodine would be a nucleus with 53 protons and 53 neutrons, a first shell with 2 electrons, a complete second and third row of 8 and 18 electrons each, a 4th shell with 18 electrons and an outer shell with 7 valence electrons.

Chapter 4: Understanding Molecules and Its Formula

Understanding Formulas

A **Formula** is the equation of the elements, which are combined to form molecules. The formula tells the composition of a molecule. It tells the number of atoms added and the name of the element added.

For example, H_2O creates the water molecule. So what is the formula of H_2O?

- From the symbol of the molecule, we could tell that it has 2 hydrogen atoms and 1 oxygen atom.
- So, the formula is $H + H + O = H_2O$.

  However, unlike in algebraic expressions, the number is written in subscript and after the symbol of the element.

Understanding formulas can be easy, but creating a formula needs effort. You have to first understand how elements bond together to create a certain molecule.

Chemical Bonding

Chemical bonding is essential in creating different molecules**.** As discussed in the first chapter, a molecule is a result of two or more elements bonded chemically. A molecule makes up different kinds of matter, depending on the number of elements used and the way they were bonded.

But, why do elements need to bind?

The elements need to bind with each other to stabilize the molecule of a compound. Each atomic structure of a molecule must have a stable valence shell. A valence shell is considered stable if it has 8 valence electrons.

Let us use the atomic structure of Potassium to illustrate.

Potassium has a nucleus with 19 protons and 20 neutrons. It has a first shell with 2 electrons, a second shell with 8 electrons, a third shell with 8 electrons and an outer shell with only 1 valence electron.

The first and the second shells of potassium are considered stable because they were completely filled. The third shell cannot be considered stable because it only has 8 electrons. The problem is in the last shell. It only has 1 valence electron.

The potassium element needs to stabilize its atom to create a stable molecule. It can be stable if it would give up its valence electron to another element.

Therefore, the potassium will now lose its fourth shell. However, the third shell would now become its new outer shell. Since the third shell has 8 electrons, the new outer shell is deemed stable.

In some cases, an element could stabilize its atom by sharing some of its electron with another element.

Ionic and Covalent Bonding

Elements bind chemically in two ways. These are through ionic bonding or covalent bonding. Each type of bonding depends on the reaction of electrons shared.

Ionic Bonding

Ionic bonding happens when one element gains one or more electrons while the other loses them. One or more elements become an **ion or a positively charged atom.** An ion element has more protons than electrons.

The other element or elements becomes become **negatively charge,** which means that it has more electrons than the protons. These elements are referred to as **anions.**

The elements would have opposite charges. The opposite charges would result to a **magnetic effect.** The two elements bond together because they are attracted to each other.

Let us illustrate it using the creation of the table salt.

Our table salt is a compound made from Sodium and Chlorine.

- The atomic structure of sodium is as follows:
    - It has 11 protons, 11 electrons, and 12 neutrons.
    - It has three shells with one valence electron.

    - Its first shell is stable with 2 electrons
    - The second shell is stable with 8 electrons.
    - The valence shell is not stable because it only has 1 electron.
- The atomic structure of chlorine is as follows:
    - It has 53 protons, 53 electrons, and 74 neutrons.
    - It has five shells with 7 valence electrons.
    - The inner three shells are stable because they are filled.
    - The 4^{th} shell is not considered stable because it is not complete.
    - The fifth shell is not stable because it only has 7 electrons.

Now, to create a stable molecule between these two elements, we need to figure how we make their outer shells have 8 valence electrons each.

Here are the tests:

1. If we give up the valence electron of sodium to chlorine, would the two elements have 8 valence electrons? The answer is yes.
2. If we give up the valence electrons of chlorine to sodium, would the two elements have 8 valence electrons? The answer is no. Sodium would have 8 valence electrons, but Chlorine would have an excess of 10 valence electrons.

Therefore, to make a stable molecule for table salt, the sodium should become an ion. The chlorine should become an anion.

Covalent Bonding

Covalent bonding happens when the elements share their valence electron to stabilize each other. This usually applies in gases and lighter metal elements. No element loses an electron. All elements become anions or negatively charged elements. Thus, elements bonded covalently do not attract each other. They are only connected through the outer shell.

Let us use the formula for an Oxide to illustrate covalent bonding.

- An oxide is composed of two oxygen atoms. The atomic structure of oxygen is as follows:
    - It has 8 protons, 8 electrons and 8 neutrons.
    - It has 2 shells with 6 valence electrons.

- The inner shell is stable because it has 2 electrons.
- The second shell is not stable because it only has 6 electrons.

To make the two oxygen atoms become stable, they must have 8 valence electrons each. In this case, each atom needs 2 electrons. So, how do they help stabilize each other? They will both share two of their valence electron.

Oxygen 1 will share 2 of its electron to Oxygen 2. The latter will do the same to Oxygen 1. They will do this by connecting their outer shell in a point where 4 electrons would always meet. At this point, both atoms have stable outer shells.

However, both Oxygen atoms become anions. They would appear to have 10 electrons, but with only 8 protons.

Chapter 5: Understanding and Creating Your Own Formula

Making Your Own Formula

Now that you know how to bond the elements, it would be easy for you to determine the structure of a molecule. You can now analyze or create your own formula.

You need to remember these two things when making your own formula:

1. Your outer shells should always be stable.
2. You should write your formula according to how you add your elements. If you added hydrogen to hydrogen when making a formula with oxygen, then your formula should be H + H + O. It should not be H + O + H.

For example: You want to make a molecule from carbon and oxygen. What formulas can you get?

To create the formula let us understand the structures of the two elements.

- The atomic structure of Carbon is as follows:
  - It has 6 protons, 6 electrons and 6 neutrons.
  - It has 2 shells with 4 valence electrons.
  - The inner shell is stable because it has 2 electrons.
  - The second shell is not stable because it only has 4 electrons.

- The atomic structure of oxygen is as follows:
  - It has 8 protons, 8 electrons and 8 neutrons.
  - It has 2 shells with 6 valence electrons.
  - The inner shell is stable because it has 2 electrons.
  - The second shell is not stable because it only has 6 electrons.

To stabilize carbon, it needs 4 additional valence electrons. To stabilize oxygen, it needs 2 valence electrons.

Now, let us do the test:

1. Can carbon and oxygen become stable by sharing their electrons? The answer is no.

   If carbon shares 2 of its electrons with oxygen and the latter shares 4 electrons to carbon, their outer shells would not be stable at all times.

2. Can either of the two electrons give up their electrons to stabilize both of them? The answer is still no.

   If Carbon takes 4 valence electrons from oxygen, the latter will only have 2 valence electrons. If oxygen takes 2 electrons from carbon, the latter will be left with only 2. One of the outer shells will always be unstable.

Since it is not possible to stabilize both atoms, we should consider adding another atom from the elements. So, to continue the test:

3. If we add another carbon atom to the equation, would all the atoms be stable? The answer is yes.

   With the addition of another carbon, the atoms can be stabilized for the following reason:

   - There is an additional 4 valence electrons in the equation. Through ionic bonding, one of the carbon atoms can steal the 4 valence electrons of the new carbon.
   - One of the carbon atoms will have 8 valence electrons. The other carbon atom would be left with only 2. However, the remaining 2 electrons are located in the first shell. Hence, it is still stable.
   - Through covalent bonding, the carbon atom with 8 valence electrons can share 2 of its electrons with the oxygen. Therefore, all three atoms become stable.

4. If we add another oxygen atom to the equation, would all the atoms be stable? The answer is still yes.

   With the addition of another oxygen atom, the atoms can be stabilized for the following reason:

- There is an additional 6 valence electron in the equation. Through ionic bonding, one of the carbon atoms can steal the 4 valence electron of the new oxygen.
- One of the oxygen atoms can also steal the remaining 2 valence electrons of the new oxygen atoms through ionic bonding.
- The new oxygen atom would be left with only 2 electrons. However, the remaining 2 electrons are located in the first shell. Hence, it is still stable.
- Therefore, all three atoms can become stable.

By adding a carbon atom, we created a formula C + C + O, which can be written as C2O. This formula makes up the Dicarbon Monoxide molecule.

Also, we created a formula C+ O + O, which can also be written as CO2. This formula results in the creation of a Carbon Dioxide molecule.

You can develop different molecules to the existing formula to make other types of molecules.

Conclusion

I would like to thank you and congratulate you for transiting my lines from start to finish.

I hope this book was able to help you understand the basics of Chemistry. I hope that it made the subject easier for you.

The next step is to embrace the fact that we are all chemist. You will find Chemistry interesting and easy if you acknowledge this fact. Also, do not be afraid if you do not get the formulas right all the time. Chemistry is a science and everything about it is a result of trial and error.

I wish you the best of luck!

Did you enjoy reading this book? It would mean world to me if you can spend a minute of your precious time and write an honest review for this book here: https://www.amazon.com/review/createreview/ref=dpx_acr_wr_link?asin=B07HLTT6DG