

Chemistry in Minecraft #4

Let's explore more things we can make using the Crafting Table, Compound Creator and Lab Table.

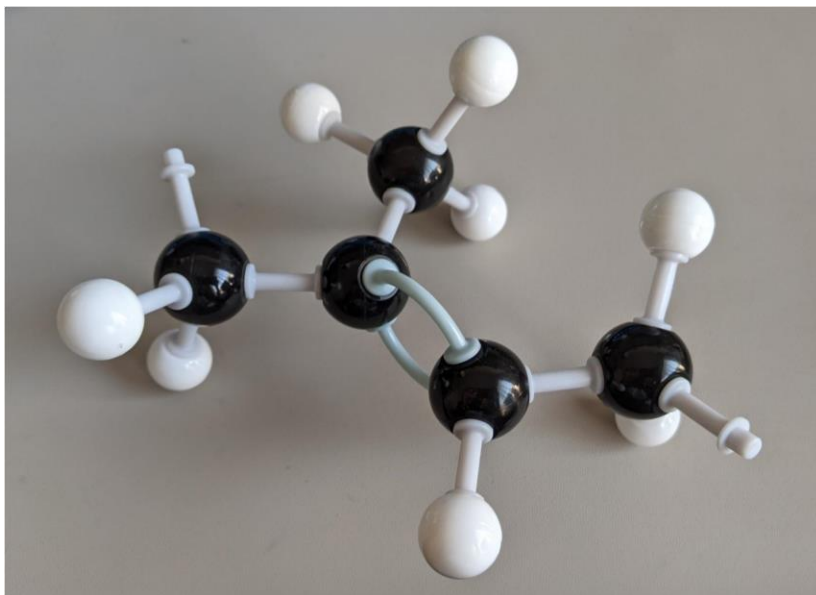
Let's look at another hydrocarbon chain called **Isoprene**, which forms latex. Rubber gloves, erasers & rubber bands are all made of latex. We can use Latex to make some Helium balloons.

Latex

The symbol for Isoprene is C_5H_8 . This is a single molecule of Isoprene.

Many molecules like this link to each other and form a long chain that we use as Latex. To make latex in the Compound Creator we need:
5 atoms of Carbon (black balls)
8 atoms of Hydrogen (white balls).

Before we head to the crafting table, we will also need some Helium to fill the balloon and a rope to tie it down. In Minecraft, to get rope from the inventory type in the word Lead. Helium is a Noble Gas, it is also lighter than air. This is why balloons filled with Helium float up.



Crafting Table: Helium Balloon

Once we have everything, we need to arrange the materials to craft a balloon!

Assembly:

1. First we need the latex balloon. To make it, place the latex beakers in the first and third column of the grid.
2. In the middle square we need to place the atom of Helium. This will fill the balloon and make it float.
3. Place the dye on top of the Helium atom. This will give the balloon its color. Below the atom of Helium we need to place a rope so we can tie the balloon to different things.



When you grab the balloon you can attach it to different things. When you attach the balloon to pigs and chickens they fly away! If you want the balloon to stay in a spot you can attach the balloon to a fence.

Lab Table: Super Fertilizer

If you are tired of waiting for your crops to grow in Minecraft, we can use chemistry to speed up the process. Fertilizer is stuff we add to plants to help them grow and increase their harvest. Most fertilizers contain NPK. This stands for Nitrogen, Phosphorus and Potassium. At the Lab Table you can combine Ammonia and Phosphorus to make Super Fertilizer. This helps your plants grow super-fast!



a. Ammonia

Ammonia is a molecule made of Nitrogen and Hydrogen. It is used in fertilizers to supply plants with Nitrogen. The symbol for Ammonia is NH_3 . This means

that we need: 1 atom of Nitrogen

3 atoms of Hydrogen

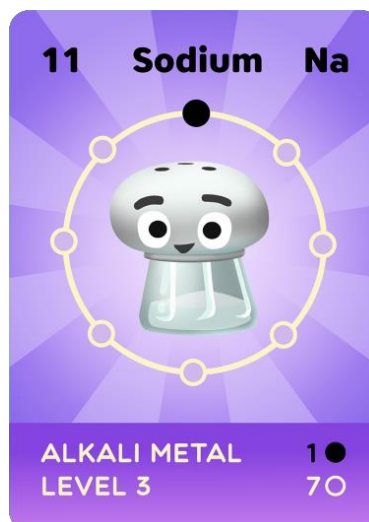
Nitrogen and Hydrogen share electrons with each other and form a covalent bond.

In the Lab Table, place one atom of Phosphorus and the molecule of Ammonia in the two squares. Once the animation starts click on combine.

We see an explosion and a small sack of fertilizer is created. When you grab the fertilizer and click on the ground, the grass grows immediately!



In our Atom Cards, atoms with the same background color have similar outer electron shell structures. Lithium, Sodium and Potassium all have 1 electron in their outer electron shell level, this means that they behave similar to each other. When these atoms react with water, there is an explosion.



Crafting Table: Underwater TNT

To make underwater TNT we need an atom of Sodium and 1 block of TNT.

Once we have everything, we need to arrange the materials to craft underwater TNT!

Assembly:

1. First we place a block of TNT.
2. On top of the block of TNT place the atom of sodium.

This gives us a blue colored block of TNT. This is underwater TNT.



Go to the nearest water body and swim to the bottom. Place the underwater TNT. In order to use underwater TNT you will need an additional item called Flint and Steel. Once you equip the Flint and Steel and click on the TNT. The TNT starts to glow white and explodes!



Some additional resources that you may find helpful:

For help with making atoms in the Element Constructor:

<https://aka.ms/elementconstructor>

For more information on breaking down blocks using the Material Reducer:

https://minecraft.fandom.com/wiki/Material_Reducer

For additional ideas to make things with the Compound Creator, Lab Table and Crafting Table:

https://education.minecraft.net/wp-content/uploads/ChemistryLab_Journal.pdf