

Name:

OL Lab 1: Chemistry Safety and Atomic Structure: Assess the possibility of life on other planets

Learning Objectives

- Identify the hazards posed by chemicals and how to handle them
- React quickly and save lives in case of a fire emergency
- Use the CAS numbers to plan your experiment
- Understand how to dispose of halogenated and non-halogenated waste
- Look up H and P phrases in the safety data sheet
- Safely use a chemical fume hood
- Explain the concept of an atom
- Explain the properties of the basic subatomic particles: protons, neutrons, and electrons
- Define the atomic number and atomic mass
- Define isotopes
- Identify the basics of the quantum atomic model and describe the significance of the four quantum numbers

Dangers in the lab

In the Chemistry Safety lab, you'll learn to identify the hazards posed by the different chemicals that you are using, which is a very important step in the planning of every experiment.

Atoms and the subatomic particles

Everything you see around you is made up of atoms, and all atoms consist of subatomic particles. In the Atomic Structure simulation, you will learn the names and properties of the basic subatomic particles and understand how changing the number of electrons may charge an atom either positively or negatively.

Identify different elements from the periodic table

As a part of your mission, you will be teleported to an exoplanet to explore on your own, collect samples and come up with observations regarding the presence of life on the planet. Back in the laboratory, you will investigate the properties of the elements you brought back from the exoplanet. The periodic table will be close by to advise and guide you.

What is an isotope?

In order to understand the main properties of an isotope in the Atomic Structure simulation, you will use the holo-table.