



Crude Oil: Nature's Most Useful Liquid

KS4 CHEMISTRY

KS3 SCIENCE

Ages 11-14 ⌚ 3 min read

What Is Crude Oil?

Crude oil is a thick, dark liquid found deep beneath the Earth's surface. It formed millions of years ago from the remains of tiny sea creatures and plants that died and got buried under layers of rock and sand. Over time, heat and pressure turned these dead organisms into the oil we pump out of the ground today.

Think of it like nature's ancient recycling system—dead things from the sea become a fuel that powers our modern world.

Think of it like... a time capsule buried underground for millions of years, made from crushed ancient sea life.

How Do We Get It Out?

Oil companies drill deep wells into the Earth to reach crude oil reserves. Once they find oil, they pump it to the surface. This **crude oil** is a mixture of different chemicals called **hydrocarbons**—molecules made mainly of hydrogen and carbon atoms.

Breaking It Into Useful Pieces

The clever bit comes next. At an **oil refinery**, crude oil is heated to about **350°C** and pumped into a tall tower called a **fractionating column**. Different parts of the oil boil at different temperatures, so they separate as they rise up the tower. This process is called **fractional distillation**.

Think of it like... sorting a bowl of mixed candies by weight: the lightest float to the top, the heaviest sink to the bottom.

What Can We Make From Crude Oil?

Crude oil gives us hundreds of products. At the bottom of the fractionating column, we get **bitumen** (used for roads). Higher up, we get **fuel oil** and **diesel** for heating and transport. Further up comes **petrol** (gasoline) for cars. The very lightest parts become **petroleum gas** for cooking and heating.

But it's not just fuel. Crude oil also makes **plastics, cosmetics, medicines, paints, soaps,** and **textiles**. Almost everything in modern life has a connection to crude oil.

The **refining process** transforms this black sludge into thousands of products that we depend on every single day.