

# ChemQuest – Joke Book

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**A** Spark & Anvil joke book. Groan-worthy puns, tricky riddles, silly nonsense, and real fun facts from the world of ChemQuest – read them out loud and make someone laugh.

**Why do chemists love nitrates?**

**Because they're cheaper than day rates!**

## How to use this book

Read a joke, pause at the question, and try to guess the answer before you read on. Best of all: read them out loud to a friend, a grown-up, or your class. A good laugh makes the tricky stuff easier – that's real science.

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### ChemQuest – Joke Book

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## Puns

**Why do chemists love nitrates?**

💡 Because they're cheaper than day rates!

**What did the scientist say when she found two isotopes of helium?**

💡 HeHe!

**Why did the noble gas cry?**

💡 Because all its friends argon!

**What do you do with a sick chemist?**

💡 If you can't helium and you can't curium, you might as well barium!

**Why did the atom lose the argument?**

💡 Because it had no point -- it was mostly empty space!

**What's a chemist's favorite tree?**

💡 A chemis-tree!

**Why are chemists great at solving problems?**

💡 They always have solutions!

**What did the proton say to the electron?**

💡 "Stop being so negative!"

**Why did oxygen go on a date with potassium?**

💡 Because their relationship was OK!

**What element is a girl's future best friend?**

💡 Carbon! (Because diamonds are just carbon under pressure.)

**Why was the mole of oxygen molecules excited?**

💡 It was going to the Avogadro's number party -- 6.022 times 10 to the 23rd guests were invited!

**Did you hear about the chemist who was reading a book about helium?**

💡 They just couldn't put it down!

**What did the thermometer say to the graduated cylinder?**

💡 "You may have graduated, but I've got more degrees!"

**Why did the acid go to the gym?**

💡 To become a buffer solution!

**Gold walks into a bar. The bartender says, "AU, get out of here!"**

**What happened to the chemist who fell into the solution?**

💡 They were dissolved of all responsibility!

**Why do chemistry teachers like teaching about ammonia?**

💡 Because it's pretty basic stuff!

**What did sodium say when chlorine asked it out?**

💡 "Na, we're better together -- let's bond!"

**Why can you never trust an atom?**

💡 Because they make up literally everything!

**What did the catalyst say at the reaction party?**

💡 "I'm here to speed things up, but don't worry -- I won't change!"

## Riddles

**I'm a chart with rows and columns. I organize all the known elements by their atomic number. Dmitri Mendeleev created my first version in 1869. What am I?**

💡 The periodic table! It currently has 118 confirmed elements.

**I'm the smallest particle of an element that still has the properties of that element. I have protons in my nucleus, electrons orbiting outside, and often neutrons too. What am I?**

💡 An atom! The word comes from the Greek "atomos" meaning uncuttable.

**I happen when a substance combines with oxygen and releases energy, often as heat and light. Burning wood and rusting iron are both examples of me. What type of reaction am I?**

💡 An oxidation reaction! Combustion is a fast version, rusting is slow.

**I'm a bond formed when two atoms share electrons instead of transferring them. I hold together molecules like water and carbon dioxide. What type of bond am I?**

💡 A covalent bond! Shared electrons create strong connections between non-metal atoms.

**I'm the same element but with a different number of neutrons. Carbon-12 and carbon-14 are examples of me. We behave the same chemically but have different masses. What are we?**

💡 Isotopes! Carbon-14 is used to date ancient objects.

**I'm a state of matter with no fixed shape or volume. My particles move fast and spread out to fill any container. I can be compressed. What state am I?**

💡 A gas! Gas particles have enough energy to overcome all intermolecular attractions.

**I turn litmus paper red, I taste sour, and I have a pH below 7. Lemons and vinegar both contain me. What am I?**

💡 An acid! Acids release hydrogen ions ( $\text{H}^+$ ) in water.

**I'm made of two hydrogen atoms and one oxygen atom. I'm the most common molecule on Earth's surface. I can exist as solid, liquid, or gas. What am I?**

💡 Water ( $\text{H}_2\text{O}$ )! It's the only common substance found naturally in all three states.

**I'm a column on the periodic table. All the elements in me have similar chemical properties because they have the same number of electrons in their outer shell. What am I?**

💡 A group (or family)! Group 1 elements are all reactive metals, for example.

**When an acid and a base react, they produce water and a salt. This reaction is called what?**

💡 Neutralization! The acid's  $H^+$  ions combine with the base's  $OH^-$  ions to form  $H_2O$ .

**I'm a reaction where a compound breaks down into simpler substances. Heating mercury oxide produces mercury metal and oxygen gas. What type of reaction am I?**

💡 A decomposition reaction! One reactant breaks apart into two or more products.

**I'm the number of protons in an atom's nucleus. I determine which element an atom is. Carbon always has 6 of me, gold always has 79. What am I?**

💡 The atomic number! Change the proton count and you change the element.

**I'm the phase change from liquid to gas. I happen at the surface of a liquid at any temperature, but I happen throughout the entire liquid at the boiling point. What am I?**

💡 Evaporation! (The whole-liquid version at boiling point is called boiling.)

**I'm a mixture where one substance is evenly distributed throughout another. Saltwater and lemonade are both examples of me. What am I?**

💡 A solution! The substance that dissolves is the solute; the substance it dissolves in is the solvent.

**I'm a type of bond where one atom gives away electrons and another takes them. This creates positive and negative ions that attract each other. Table salt (NaCl) is held together by me. What am I?**

 An ionic bond! Sodium gives an electron to chlorine.

**I'm the law that says atoms can't be created or destroyed in a chemical reaction. The total mass of reactants must equal the total mass of products. What law am I?**

 The law of conservation of mass! Antoine Lavoisier established this in the 1770s.

**I sit in the far right column of the periodic table. I have a full outer electron shell, so I almost never react with other elements. Helium, neon, and argon are all members of my group. What am I?**

 A noble gas! They're called noble because they don't "mingle" with other elements.

**I'm the phase change from gas directly to solid, skipping the liquid phase entirely. Frost forming on a window is an example of me. What am I?**

 Deposition! The reverse process -- solid directly to gas -- is called sublimation.

**I'm what you use to show a chemical reaction on paper. I have reactants on the left, products on the right, and an arrow in the middle. I need to be balanced. What am I?**

💡 A chemical equation! Balancing makes sure atoms aren't created or destroyed.

**I measure how acidic or basic a solution is on a scale from 0 to 14. Pure water sits right in the middle at 7. What am I?**

💡 The pH scale! Below 7 is acidic, above 7 is basic, and 7 is neutral.

## Silly Stuff

Helium walks into a bar. The bartender says, "We don't serve noble gases in here." Helium doesn't react. Because it literally cannot react. That's the whole point of being a noble gas.

Water is just two gases that decided to get together and become a liquid. Hydrogen -- the most flammable gas -- combined with oxygen -- the gas that keeps fires burning -- and somehow made the thing we use to put fires out. Chemistry is unhinged.

A student was asked to name a liquid that isn't water. They said "melted ice." Technically correct -- the most frustrating kind of correct in chemistry class.

Your body is worth about \$1 in raw chemical elements -- mostly oxygen, carbon, hydrogen, and nitrogen at bulk prices. But the labor cost to assemble 37 trillion cells from those elements? Priceless. You're basically a chemistry project that got way out of hand.

A neutron walks into a bar and asks, "How much for a drink?" The bartender says, "For you, no charge." The neutron was not amused. It never is. Because neutrons are neutral about everything.

Dry ice doesn't melt -- it sublimates, going straight from solid to gas. Imagine if regular ice did that. You'd put ice cubes in your drink and they'd just vanish into thin air. Your lemonade would never get cold, and your freezer would constantly be full of fog.

A student balanced a chemical equation and celebrated like they'd won the championship. The teacher said, "You just made sure the number of atoms is the same on both sides." The student said, "Exactly. Justice. Balance. Chemistry."

Diamonds and pencil graphite are both made entirely of carbon. The only difference is how the atoms are arranged. So technically, every time you write with a pencil, you're writing with the same element as the world's most expensive gemstones. Your homework is basically jewel-encrusted.

If you could somehow remove all the empty space from the atoms in every human on Earth, the entire human race would fit inside a sugar cube. Atoms are 99.9999% empty space. You are mostly nothing, and so is everyone else.

A chemistry teacher said, "There are no stupid questions." A student raised their hand and asked, "Is mayonnaise an element?" The teacher reconsidered their statement.

Baking a cake is just chemistry you're allowed to eat. You mix compounds, add a catalyst (heat), trigger chemical reactions (baking soda producing  $\text{CO}_2$ ), and denature proteins (eggs setting). Every baker is an unlicensed chemist.

Francium is so reactive that if you had a visible chunk of it, it would explode on contact with air and water. It's also so rare and radioactive that the largest amount ever gathered was smaller than a grain of sand. Even chemistry is afraid of francium.

Oxygen was discovered in the 1770s. Before that, people were breathing it just fine without knowing what it was. The oxygen didn't care whether anyone had discovered it or not. It just kept doing its job.

If you put a drop of food coloring in a glass of water, it spreads out all by itself until the color is even. This is diffusion, and it works because molecules are in constant random motion. Molecules are just tiny particles that can't sit still. Ever.

A pH of 1 is strong acid. A pH of 14 is strong base. Your stomach acid is about 1.5, meaning your stomach is basically a vat of acid strong enough to dissolve metal, and it's just... inside you. Right now. Being casual about it.

## Fun Facts

Did you know? The human body contains enough carbon to make about 9,000 pencils, enough iron to make a 3-inch nail, and enough phosphorus to make about 2,200 match heads!

Did you know? Gallium is a metal that melts at just 85.6 degrees Fahrenheit -- barely above room temperature! You can literally melt it by holding it in your hand. It looks like liquid silver pooling in your palm.

Did you know? Oxygen is actually colorless as a gas, but when cooled to a liquid (at minus 297 degrees Fahrenheit), it turns a beautiful pale blue! Liquid oxygen is also magnetic.

Did you know? The element mercury is the only metal that is liquid at room temperature! Ancient alchemists called it "quicksilver" because of how it flows and pools like a living silver liquid.

Did you know? A single drop of water contains about 1.67 sextillion molecules (that's 1,670,000,000,000,000,000,000). Even the tiniest visible droplet is home to an unimaginably huge number of H<sub>2</sub>O molecules!

Did you know? Hydrogen is the lightest and most abundant element in the universe -- about 75% of all normal matter is hydrogen! Stars like our Sun are powered by fusing hydrogen atoms into helium.

Did you know? The periodic table wasn't completed all at once. When Mendeleev first published it in 1869, he left gaps for elements that hadn't been discovered yet -- and correctly predicted their properties! Gallium and germanium were found years later, matching his predictions.

Did you know? Glass is technically not a solid or a liquid -- it's an "amorphous solid." Its atoms are arranged randomly like a liquid, but it's rigid like a solid. The old myth that glass "flows" over centuries in old windows is false, though.

Did you know? Bananas are slightly radioactive! They contain potassium, and a small fraction of natural potassium is the radioactive isotope potassium-40. You'd need to eat about 10 million bananas at once for the radiation to be dangerous.

Did you know? The smell after rain has a name -- it's called "petrichor." It's caused by a chemical called geosmin, which is produced by bacteria in the soil and gets released into the air when raindrops hit the ground.

Did you know? Astatine is the rarest naturally occurring element on Earth. At any given moment, there's estimated to be less than one ounce of it in the entire planet's crust! It's so rare that no one has ever seen a visible piece of it.

Did you know? A chemical reaction happens every time you strike a match! The friction creates heat, which ignites potassium chlorate on the match head, which burns sulfur, which lights the wood. Four chemical reactions in about one second.

Did you know? Your car's airbag works by a chemical reaction! When the sensor detects a crash, it ignites a pellet of sodium azide, which decomposes into sodium metal and nitrogen gas. The nitrogen gas inflates the bag in about 30 milliseconds.

Did you know? Neon signs aren't all neon! Only the red-orange ones use actual neon gas. Other colors use different gases -- argon for lavender, helium for yellow, krypton for white, and mercury vapor for blue.

Did you know? Hot water can freeze faster than cold water under certain conditions! This is called the Mpemba effect, named after a Tanzanian student who noticed it in 1963 while making ice cream. Scientists still debate exactly why it happens.

## Keep laughing

That's **70 jokes** from ChemQuest. Made someone laugh? Try making up your own – the best jokes are the ones you tell.

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