# Tellurium (Te)

Element 52 — Complete Summary

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52
**Te**
Tellurium
127.6

## Key Properties

| | |
|---|---|
| Atomic Mass | 127.6 |
| Category | Metalloids |
| State at 20°C | solid |
| Melting Point | 449.51°C |
| Boiling Point | 988°C |
| Density | 6.24 |
| Electron Config | [Kr] 4d105s25p4 |
| Electronegativity | 2.1 |
| Year Discovered | 1782 |
| Discovered By | Franz-Joseph Müller von Reichenstein |

## ✨ Did You Know?

1. It was named after 'Tellus', the Latin word for Earth.
2. Humans exposed to even tiny amounts of tellurium (as little as 0.01 mg/m³) develop a condition called 'tellurium breath', which gives their breath a strong, persistent garlic-like odor.
3. When added to steel and copper, it makes the metals easier to machine.
4. Tellurium is one of the rarest stable solid elements in the Earth's crust, rarer even than platinum.
5. Cadmium telluride (CdTe) is used to make highly efficient thin-film solar cells.

**👁 APPEARANCE**
Tellurium is a brittle, silvery-white metalloid.

**🦸 SUPERHERO PERSONA**
*"The Garlic-Breath, a rare hero from the Earth who leaves a lingering, garlicky impression."*

**🔗 EVERYDAY CONNECTION**
Tellurium is found as a component in some solar cells.

**🎬 POP CULTURE**
Tellurium often appears in sci-fi to describe the strange geology of alien worlds.

## Tellurium: The Rare Semi-Metal

Tellurium is a brittle, silvery-gray semi-metal that is usually found as a powder. It's quite rare in Earth's crust, and its name comes from the Latin tellus, meaning "Earth". It was discovered soon after selenium, which was named after the moon—so together, they represent Earth and Moon! 🌎🌙

## Why Is Tellurium Useful?

Tellurium improves the properties of other materials and is important in modern technology:

Alloys:

Added to copper and steel to make them easier to machine (cut and shape).

Mixed with lead, it increases hardness and resistance to acid, making it stronger and more durable.

Technology: Used in rewritable CDs and DVDs, solar cells, and as a semiconductor when combined with silver or gold. It's also a catalyst in oil refining.

Glass & Ceramics: Tellurium compounds are used to tint glass and ceramics.

## Biological Role

Tellurium has no biological role and is highly toxic. Even small amounts can cause health problems. One strange effect of exposure is "tellurium breath"—a strong garlic-like odor on the breath caused by the body processing the element.

## Natural Abundance

Tellurium is one of the rarest elements in Earth's crust. It usually occurs in minerals as tellurides and is obtained commercially as a by-product of copper refining.

## History of Discovery of Tellurium

1783 – First Discovery: Romanian chemist Franz Joseph Müller von Reichenstein studied an ore he thought contained antimony or bismuth. After three years of careful testing, he realized it was a new element.

1798 – Official Naming: He sent a sample to German chemist Martin Klaproth, who confirmed the discovery and named the element tellurium, after Earth.