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I cover geology, topical earth science, and natural disasters.

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9 Deadliest Rocks And Minerals On Earth

Lead found in Flint, Michigan water is an unfortunate example of negligence leading to the mass exposure of elemental lead found naturally in iron ore. Much in the same way humans communicate warnings of deadly plants and animals, it's important to communicate the risks and exposure of deadly rocks and minerals.

It's easy to forget how lethal our natural world can be, where an encounter with the wrong rock or mineral could lead to injury or death. Often times toxic minerals are associated material we use everyday for construction, computers, and cosmetics. With a keen eye and an understanding of toxicity, you can help to identify deadly minerals in your surrounding.

Deadliest Rocks & Minerals



Chalcanthite - $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$





Chalcanthite (Credit: messingminerals.com)

The brilliant blue [Chalcanthite](#) is a hydrated water-soluble copper sulfate. The mineral is used to ore copper, however it's necessary to keep the environment dry as the mineral can easily dissolve

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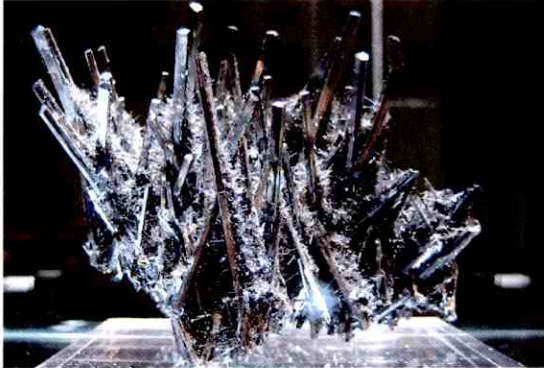






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and recrystallize in a wet environment. The water solubility of this mineral can easily lead to copper poisoning of an environment and is toxic to humans.

Stibnite - Sb_2S_3



Stibnite (Credit: Wikimedia)

[Stibnite](#) is a toxic antimony sulfide mineral with an orthorhombic crystal lattice and a source of metalloid antimony. Stibnite paste has been used for thousands of years for cosmetics to darken eyebrows and lashes. The mineral was also used to make eating utensils, causing poisoning from antimony ingestion.

Asbestos - $\text{Mg}_3\text{Si}_2\text{O}_5(\text{OH})_4$



Asbestos (Credit: Flickr/Asbestorama)

You have likely heard of the mineral [asbestos](#) and associate it with lung cancer. This silicate mineral grows thin fibers crystals that can easily break off and form dust particles. Despite its usefulness in insulation, fire resistance, and sound absorption, the mineral dust is deadly if inhaled. The fibers can cause lung cancer, mesothelioma, and asbestosis.

Arsenopyrite - FeAsS



Arsenopyrite (Credit: Dakotamatrix.com)

[Arsenopyrite](#) is an iron arsenic sulfide with a brilliant steel metallic color often found in hydrothermal vents and [pegmatites](#). The arsenic leads to a number of environmental and human damages and can sometimes be associated with gold deposits. Oxidation of arsenopyrite leads to soluble arsenic in water and subsequent acid mine drainage.

Cinnabar - HgS



Cinnabar (Credit: Dakota Matrix)

[Cinnabar](#) is a deep red mercury sulphide mineral that provides much of the world's elemental mercury. Despite the brilliant color and history of use in trading and as a coloring agent, [Cinnabar is deadly](#). Mercury is toxic to humans and was a source of death from many mines around the world.

Galena - PbS



Galena (Credit: Dakota Matrix)

[Galena](#) is a lead sulphide mineral that is one of the primary ores of lead found around the world. Galena has a cubic lattice structure and is also a source of silver. The lead in Galena is toxic if inhaled or ingested from dust particles, but the mineral or rock containing the mineral can be handled safely if there is no lead dust present.

Hutchinsonite - $(\text{Tl}, \text{Pb})_2\text{As}_5\text{S}_9$



Hutchinsonite (Credit: Dakota Matrix)

[Hutchinsonite](#) is a form of arsenic sulfide with thallium and lead that can be found in hydrothermal vents. Thallium salts are nearly tasteless and highly toxic and have been used in rat poison and insecticides. The thallium inclusion in this arsenic sulfide combines two extremely dangerous and deadly minerals. Exposure to this mineral can potentially lead to death.

Orpiment - As_2S_3



Orpiment (Credit: Periodictable.com)

[Orpiment](#) is another arsenic sulfide mineral with a stunning orange-yellow color. The mineral is found naturally in hydrothermal vents, hot springs, and fumaroles. Strangely, this mineral was once used [medicinally in China](#) despite its toxicity and in alchemy in search for a way to create gold. The arsenic, especially if it is allowed to oxidize, will lead to arsenic poisoning if handled incorrectly.

Torbernite - $\text{Cu}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 8 - 12 \text{H}_2\text{O}$



Torbernite (Credit: le-comptoir-geologique.com)

[Torbernite](#) is a dangerous mineral composed of hydrated green copper, phosphate, and uranyl. The mineral is often found in granites that contain uranium and is dangerous due to its radioactive nature. The mineral releases radon naturally and can cause lung cancer if exposure is long enough.

The rocks and minerals above are highly toxic yet some may be rather rare. This list does not include natural resources that are physically dangerous to collect. In many instances mine collapse or equipment failure can be much more deadly than

the ore that is being mined. Both dangers need to be adequately planned for with robust safety procedures in place.

Trevor Nace is a geologist, [Forbes contributor](#), and adventurer. Follow him on Twitter [@trevornace](#)

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