

Video Transcript – What Is Volcanic Ash, Anyway?

Liz Cottrell: Hi, I'm Liz Cottrell. I'm a curator here at the National Museum of Natural History and I'm the director of the global volcanism program at the Smithsonian. Have you ever seen a picture like this and heard someone say, "Wow, look at all the smoke coming out of that volcano." Well, now you being the smart person that you are can tell that person that is not smoke, that's volcanic ash. What's volcanic ash? Is it like the ash in my fireplace? Nope, not related. The ash in your fireplace is the residue of burning wood. It's carbon, it's organic. Nothing in common with volcanic ash.

Liz Cottrell: Volcanic ash is a gritty mix of ground up rock and glass. It's sharp, ouch. Beyond being a hazard to people on the ground, volcanic ash can also be a hazard in the air. If a volcano erupts and sends a plume of ash into the sky, that sharp ash can get sucked into the engines of planes flying overhead. It can damage the engines and even bring the planes out of the sky.

Liz Cottrell: Here I am in the collections of the museum. We have a lot of volcanic products here. Everything that's come out of volcanoes, we've got. If I pull open a drawer here I have got a can of glass ash. This is from the eruption of Mount Saint Helens. Let's open this up. See all that smoke coming off? Remember it's not smoke, it's ground up glass and rock in all different size fractions. If I take some out into my hand here it's gritty and sharp.

Liz Cottrell: Volcanic ash is formed — when a volcano erupts — from the force of the eruption pulverizing all the rock and turning it into the dust — volcanic ash. The other thing volcanic ash is, is actually little pieces of frozen liquid hot magma and that's where all the bubbles come from. They're the trapped gases that are driving the eruption.

Liz Cottrell: Frozen hot magma, what's that? Well, freezing is when a substance turns from a liquid into a solid. So we have liquid hot magma deep in our volcano. The volcano erupts and sprays this liquid into the sky where it cools really quickly. It turns into a solid, so we end up with frozen hot magma, also known as volcanic ash.

Liz Cottrell: This image of ash is magnified many, many times. It's only 30 microns across. That's the width of a human hair, pretty small. Remember, volcanic ash, it's not smoke: it's ground up glass and rock. It's sharp and it's one of the major sources of hazards from volcanoes.