

Is Borax Safe to Use for Natural Cleaning?



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— by Katie Wells



Medically reviewed by Dr. Madiha Saeed, MD



It may be natural, but is borax safe? This is a question I've tackled before but is worth another look as it is in the news more than ever.

No longer just a cleaner our grandmothers used, borax is enjoying new popularity as a wonder ingredient for natural cleaning. It's found in many recipes for homemade cleaners, or for preserving homemade beauty products. It is also a primary ingredient in my popular [all-purpose cleaner](#) and laundry detergent. What's more, it's a common ingredient in the many of the homemade slime recipes so many of our kids love.

Since I continue to get lots of questions about the safety of borax, let's take a fresh look at the controversy and see how it stacks up.

What Is Borax?

[Borax, of the mule team variety](#), is sodium tetraborate or sodium borate (to get all official for a second) and NOT boric acid (hydrogen borate).

Sodium tetraborate (hereafter referred to as borax) is a salt of boric acid but it is not chemically the same. This is a common misconception on the Internet, apparently, and if you've read an article claiming it is dangerous that goes on about the dangers of boric acid or says they are the same thing, I would not consider that article credible.

Of special concern is whether or not borax is safe to use around children, since many times young children are crawling on (or, let's face it, licking) surfaces that may have been cleaned with borax.

Another reason borax has been in the news lately is its use as a main ingredient in homemade slime recipes. Natural or not, borax isn't meant to be eaten at any time and there is always a chance of harm (even with careful supervision) when kids are using household chemicals. Caution is definitely warranted and this is one reason we use a [borax-free slime recipe](#) just in case.

Borax vs. Boric Acid vs. Sodium Borate

All of these are used as natural pesticides, which is probably the reason for the misconception that they are the same. However, boric acid carries a risk for toxicity at a much lower dose than borax does if ingested.

Borax is used in the process of making boric acid, but there is a tremendous chemical difference between the two. Borax is a naturally occurring mineral, though of course, that doesn't make it inert or safe either. ([Arsenic is a naturally occurring metalloid](#) but it isn't safe for human use. Natural doesn't always mean safe.)

Why does this matter? It matters because the studies used to back up the safety (or danger) of borax often use boric acid, or are often ambiguous about which was used.

The product safety data also combines borax and boric acid, making it unclear which substance the various warnings pertain to. These cautions read like:

This product is white, odorless, crystalline powder. Direct contact with eyes may cause severe irritation with redness, pain, blurred vision, and possibly corneal injury. Repeated or prolonged excessive exposure with skin can result in irritation.

No chronic health effects are expected from the intended use of these products or from foreseeable handling of them in the workplace. Nonetheless, the following effects have been

reported for a component, sodium borate, and boric acid. Sodium borate upon entry into the body becomes boric acid. Sodium borate and boric acid interfere with sperm production, damage the testes and interfere with male fertility when given to animals by mouth at high doses.

Note that these menacing-sounding warnings relate mainly to skin contact, eye contact, or when it was “given ..by mouth at high doses” in animal studies.

You know what else can irritate the eyes and skin and even cause digestive problems at high doses? Vinegar or oregano essential oil (caused a cornea burn in my mother in law), and probably cayenne pepper too. That doesn't mean that those things aren't safe but just that that we must use them safely.

Borax Safety Hazards & Precautions

Borax is extremely alkaline, which makes it irritating when used undiluted. It makes sense not to use any form — borax, sodium borate, or boric acid — as an eyewash or skin scrub. You should also never drink or ingest it in any way.

However, this still doesn't answer the question about if occasional indirect contact (in things like cleaning products) is safe.

[Here's the full material data safety sheet if you want some light reading.](#)

That data sheet does give it a safety rating of “1” which is the same as baking soda and salt. (I wouldn't recommend putting those in your eye or rubbing large amounts on the skin constantly or ingesting large amounts daily either.)

The Environmental Working Group lists borax as a safety rating of 5-6, though again, the studies used contained both borax and boric acid and the warnings referred to ingestion, eye contact, or long-term undiluted use.

What About Boron?

As with so many things in the health world, there is a flip side to the concerns. Boron is a trace element (atomic number 5) and a fascinating character (because I am a dork and easily fascinated by chemistry). It turns out, there is a [biological need for boron](#) in small amounts. Studies show boron plays a key role in healthy cell membrane functions and is especially important for bone health.

Side note: The [boron family](#) may be considered non-toxic to humans in lower amounts, but these products are more dangerous to insects (thus their use as a pesticide):

In biology, borates have low toxicity in mammals (similar to table salt), but are more toxic to arthropods and are used as insecticides. Boric acid is mildly antimicrobial, and a natural boron-containing organic antibiotic is known. Boron is essential to life. Small amounts of boron compounds play a strengthening role in the cell walls of all plants, making boron necessary in soils. Experiments indicate a role for boron as an ultratrace element in animals, but its role in animal physiology is unknown.

But Is Borax Toxic or Not?

There are a lot of confounding factors based on the source. [And lots of differing opinions too.](#) The main points I found in researching were:

- Actual warnings relate to eye irritation, undiluted skin contact, and ingestion.
- The FDA and the ECA (European Chemicals Agency) banned borax as a substance of high concern but didn't provide any documentation other than soil level dangers.
- The European Union and Canada have banned the use of borax not just in food but in body care products made for children under the age of 3, according to [this EWG article](#). This may be reasonable since being applied directly the skin (not the case in cleaning products or laundry detergent residue).
- I was unable to find any studies that proved a danger to borax in natural cleaning products in diluted amounts as long as it didn't get into the eyes or wasn't ingested.
- The EWG Skin Base Database classified borax as a moderate hazard, but most of the studies and listings related to its use in food.

In the event of accidental ingestion, certainly contact your local emergency service or the American Association of Poison Control Centers immediately at 1-800-222-1222.

The Bottom Line on Borax Safety?

I could not find any data that was compelling enough for me to avoid natural borax powder completely. Obviously, I would not ingest it or feel comfortable using it in cosmetic or food preparations.

At the same time, most products I use borax in aren't coming in direct, undiluted contact with my skin, I'm not ingesting them and I'm not getting them in or near my eyes, so most of the concerns and warnings are not valid.

Also, I'm using homemade products with borax to replace things like [regular laundry detergent or cleaners that rate "D" or "F" on the EWG Database](#).

Borax is an effective natural cleaner and a safer alternative to many conventional cleaners. Yes, it is also a pesticide, but a natural one (and great at getting rid of ants- [here's a great tutorial](#)) but

I'm yet to find conclusive evidence that it is either safe or harmful to humans (other than if it is ingested, rubbed in the eyes, etc.).

What I Personally Do

I still consider borax safe for use in natural cleaning, but absolutely do your own research and make sure you are using appropriately in any capacity. I use a [natural borax powder](#) so it is free of any added surfactants or detergents, but [Mule Team Borax](#) is also considered a pure/natural form of borax.

Bottom line, I always advocate that every mom should listen to their gut (and the research, of course). If you aren't comfortable using borax in your home, this line of [green cleaning products](#) may be a great option for you. (To hear more about why I trust them, listen to my interview with the founder in [this Wellness Mama podcast](#).)

This article was medically reviewed by [Madiha Saeed, MD](#), a board certified family physician. As always, this is not personal medical advice and we recommend that you talk with your doctor.