

Beware of Brake Cleaner

by "Brew Dude"

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COMMON CLEANERS CAN TURN INTO POISON GAS

(Editor's Note: This article was originally written by Brew Dude for American Iron Magazine. While the threat to the average blacksmith seems rather slim, the story is such a nightmare that I thought everyone should be made aware of this danger. BG)

After seeing and reading so many warning labels, we tend to no longer pay them any heed. We buy chemicals and sprays at a local parts house and think, "How can this be so bad, health-wise, if I'm buying it over the counter?" Here's how a small whiff of smoke almost dropped me where I stood.

I had a rush job to do welding four diesel tanks. I had to patch where they were pitted by road salt corrosion. Normally, I spray a little carb cleaner on the spot I'm going to weld, wipe it off, and then preheat the area with an acetylene torch to get rid of any solvents. Where I normally get carb cleaner was sold out, so I got a can of brake cleaner and went through my regular routine. To be on the safe side, I even had the shop door open and the exhaust fan on.

I started TIG-welding on Thursday afternoon and had no problem at all at first. But when I started welding across a really pitted area, I found a couple of drops of cleaner that were hunking in a deep dimple. As I came close to the cleaner, a small puff of white smoke popped up, and I almost passed out. I made it outside and sat for awhile in the fresh air. After about 10 minutes, I went to the office and sat at the computer to check the warnings on the brake cleaner can I used. That's when my whole left side started shaking for about 10 to 14 minutes. (I found out later I was having a seizure.)

When I was a bit to control myself again, I read the can's warning: "Vapors may decompose to harmful or fatal corrosive gases such as hydrogen chloride and possibly phosgene." After reading about hydrogen chloride, I started researching phosgene. The active chemical in the brake cleaner is tetra-chloroethylene. When this chemical is exposed to excessive heat and the gas argon, which is used in MIG and TIG welding, it produces phosgene. Phosgene gas can be fatal with a dose as little as four parts per million: basically a single small puff of smoke. Symptoms can be delayed from six to 48 hours after exposure. There is no antidote for phosgene poisoning. If you do survive, the long-term effect can be chronic bronchitis and emphysema.

My breathing still was hard a few hours later, but I felt a little better, so I didn't go to a hospital. The chlorine taste and smell in my mouth and nose were still strong. About midnight, I started coughing and my chest started hurting but I thought that this would pass after a night's sleep. The next day (Friday), the symptoms got worse, and my kidneys started hurting, so I drank

a bunch of liquids and cranberry juice. For the next four days, I was constipated and only urinated a lot of clear fluid with no smell. Though sometimes I felt okay, I was really in a lot of pain on and off for the next several days, as well as weak and tired. Then my urine became very dark and smelled terrible.

By the next Monday, nine days after the poisoning, I lost all balance. I was confused and could hardly talk, so I finally went to the emergency room. My symptoms were low O2 level, sugar levels out of control, vertigo, and I was hurting badly in my entire chest. I was admitted and put into ICU. My kidneys had probably shut down for those first four days. My lungs were damaged, so I had to be on O2. I had to be on insulin to keep my sugar in check. Since there is no antidote for phosgene, all I could do was try to rest and hope I got better. After CT, MRI, EKG, and EEG tests, as well as several blood tests, it looked like, at least for now, there is no permanent damage. However, the MRI showed fluid in my sinuses and a buildup of fluids near my brain. The phosgene scarred my sinuses, which then became infected. The three doctors I saw said I was really lucky to make it.

After four weeks, it appears that I may have emphysema and chronic bronchitis. I'm on nasal medicine and an inhaler. My sinuses are severely scarred, and my smell nerves are damaged. I still have that awful chlorine taste and smell. I may also have pancreas damage. The insulin that I was taking had little effect on my sugar levels, so I'm now on some stronger medicines.

So why am I telling you all this? I hope to save someone from an easily avoidable severe illness or even death. The cleaning sprays commonly found in thousands of bike shops across the country can be just as dangerous if improperly used. Read the labels and warnings! Look up the chemicals you use. Just because you got away with it before, doesn't mean you won't get in trouble the next time.

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