

## A UL-LISTED CARBON MONOXIDE ALARM MAY NOT PROTECT YOU

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## A UL-LISTED CARBON MONOXIDE ALARM MAY NOT PROTECT YOU

Why you probably need a low-level CO monitor

POSTED ON JAN 2 2013 BY **ALLISON A. BAILES III, PHD, GBA ADVISOR**

Don't judge a book by its cover? That certainly applies to what may be the best protection against carbon monoxide poisoning you can buy. The two best carbon monoxide monitors, the **CO Experts** monitor and the **NSI 3000** from the **National Comfort Institute**, don't have the approval from Underwriters Laboratories (UL) that so many manufacturers crave. There's a good reason for that.

The CO Experts and NSI 3000 monitors are low-level monitors that tell you what's going on with the carbon monoxide levels in your home in real time. They cannot get listed by UL because UL has decided that only high levels matter, apparently to reduce the risk of 'nuisance' alarms. Here's a quote from UL standard 2034, as given on the CO Experts website:

*Carbon monoxide alarms covered by this standard are not intended to alarm when exposed to long term, low level carbon monoxide exposures or slightly higher short term transient carbon monoxide exposures, possibly caused by air pollution and/or properly installed/maintained fuel-fired appliances and fireplaces.*

**Are low levels of carbon monoxide safe?**

Because UL-2034 mandates that CO alarms remain silent during "long term, low level carbon monoxide exposures," you may logically conclude that low levels of carbon monoxide are safe. Is that true? Not according to **George Kerr**, the brains—and the passion—behind CO Experts. He cites numerous studies showing that **low levels of CO are harmful**. In fact, problems show up even at really low levels. A UCLA study found that CO levels above 5 parts per million (ppm) was associated with pregnant women having underweight babies with smaller heads.

David Richardson, a combustion safety trainer for the National Comfort Institute, compares the protection you get from a UL-labeled CO alarm to a home security system. "If you had a home security system that alerted at comparable levels the intruder could already be in your home, standing in your bedroom door while you slept before the alarm went off," he wrote in an **article**



**A low-level carbon monoxide monitor from CO Experts.** The new models have a different case, but work on the same principles.



on CO alarms last year.

The existence of the studies quoted by Kerr probably helps to explain the disclaimers that companies making UL listed CO alarms put on their products. Here's the warning from the **Kidde-Nighthawk Model #KN-COPP-3**, as given in the user manual I downloaded from the Kidde website:

*You should take extra precautions to protect high risk persons from CO exposure because they may experience ill effects from carbon monoxide at levels that would not ordinarily affect a healthy adult. Are there any infants or small children in the home? Be sure to check them for signs of possible CO poisoning because they might have trouble explaining their symptoms. Infants and children are more susceptible to CO poisoning than a healthy adult. Pregnant women should be aware that their unborn fetus could be harmed by exposure to carbon monoxide, even when the mother suffers no ill effect herself. Any pregnant woman who suspects she may have been exposed to carbon monoxide should immediately contact her physician.*

*Is there anyone in the household who is elderly, or who has anemia, heart disease or respiratory problems, emphysema or chronic bronchitis? These individuals are at higher risk for CO poisoning and for health problems from exposure to low levels of carbon monoxide.*

Basically, the problem with UL listed alarms is that they're meant to offer protection to healthy adults during very high levels of CO in a home's air. So how much CO does a UL listed alarm allow you to breathe?

30 ppm for up to 30 days

70 ppm for up to 4 hours

150 ppm for up to 50 minutes

400 ppm for up to 15 minutes

If you think about what those numbers mean, it's actually worse than it looks. For example, as Kerr points out on the CO Experts site, a UL listed CO alarm would allow you to breathe air with 358 ppm for 45 minutes—with NO alarm at all. I don't know about you, but I want a lot more protection than that.

The CO Experts low level CO monitor starts giving you warnings when the CO levels it detects are **above 6 ppm**. As the CO levels rise, the warnings go from visual to auditory and increase in frequency. The highest level of alarm occurs when it reaches 70 ppm, when it gives you a series of beeps every 6 seconds. The **NSI 3000** is similar, giving you a visual readout for levels as low as 5 ppm and beginning auditory alarms at 15 ppm.

#### **Don't judge a book by its cover**

Back to that old aphorism I opened the article with, there are two reasons you might rush to judgment about the CO Experts monitor. I've already mentioned one: No UL listing. I hope I've convinced you already that that's not a valid reason. The problem isn't that this low level monitor isn't UL listed. The problem is with the requirements for the UL listing.

The second may already be apparent to you if you clicked any of the links above: The CO Experts website is a complete mess. George Kerr is knowledgeable and passionate, and if you spend any time talking with him about this issue, you'll be convinced that you and everyone you know needs a low level CO monitor. I met him in 2005 at the **Affordable Comfort conference**. The problem is that Kerr is also an engineer, and his website shows that. It's full of great information presented

poorly. It's one of those '90s websites that somehow has survived a dozen years into the new millenium.

Don't be put off by the website appearance, though. This CO monitor is the real deal.

#### **Where can you buy one?**

Pretty much everyone I know in the home performance industry swears by these low-level CO monitors. You probably won't find them in stores, though. You can buy CO Experts through Kerr's website if you're a professional (HVAC, firefighter, energy auditor...), and you can also find them online in various places. The NSI 3000 is only available through pros certified by the National Comfort Institute. Again, an Internet search may be the easiest way to find one, but you can try entering your zip code into [their locator](#).

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TAGS: **BAILES, CARBON MONOXIDE, CO, COMBUSTION SAFETY, IAQ, INDOOR AIR QUALITY**

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