

## “Off-label” uses of the CWA library in a ChemPro100

The ChemPro100s were initially conceived and designed for the detection and classification of Chemical Warfare Agents (CWAs). While incidents like Aum Shinrikyo’s 1995 Sarin (GB) attack on the Tokyo subway has demonstrated that responders need to have CWA detection capability, first responders rarely encounter CWAs. However, organophosphate CWAs are fundamentally concentrated forms of insecticides and because of this, many organophosphate pesticides are detectable with the ChemPro100 in a CWA library. According to Wikipedia “Off-label use is the practice of prescribing pharmaceuticals for an unapproved indication or in an unapproved age group, unapproved dose or unapproved form of administration.” Here are some examples of “Off-label” usage of the ChemPro100 CWA detection capabilities:

- **Sickening house:** A HazMat team responded to a house where the occupants reported that they were getting sick. Sniffing with the ChemPro100i they found higher concentrations of chemical around the perimeter of the floor of the house. Switching to the CWA library a consistent “Nerve” alarm was found when sniffing these areas of higher concentration. Upon discussions with the homeowner it was found that the house had experienced an insect infestation and had been sprayed to address this problem. HazMat helped to ventilate the structure and left when the “Trend” screen levels on the ChemPro100i indicated that the interior levels were similar to outdoor background levels.
- **Attempted suicide:** “At 0930 FD/EMS units made initial response to residence for an unconscious female patient. Responders were in and out of the house for about 25 minutes with no responder issues. While the female was at the ER, she regained consciousness and advised ER staff that she attempted suicide and most likely her two sons will not make it. She provided no indications of the method/manner in which she attempted to take her life. She was intubated and placed in ICU before any more information could be obtained. At 1400 FD/EMS units returned to the residence after family/friends discover the two sons unconscious in their bedroom (bodies appear to be staged/placed in a position conducive to ‘peaceful’ sleep). Based on information obtained from the ER and calling party, FD units call for hazmat and law enforcement. Hazmat units entered the residence with PPE and SCBA and rapidly retrieved the two additional victims turning them over to EMS. The Hazmat units then began atmospheric monitoring of the interior of the residence, all meters read within normal ranges, biological indicators (pets in the residence, and other civilians who were in the residence prior to FD arrival) indicated no atmospheric deficits. Samples were taken and analyzed by a GasID (FTIR), with no results. A ChemPro and another CWA detector both alerted immediately upon entering the residence for the presence of “Nerve” agents. Samples were again taken for GasID analysis, in the immediate area of the alerts, no match with the GasID. Monitoring continued with the ChemPro100i, and the levels eventually diminish to a level of no detection in any

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library. Based on biological indicators, and PT conditions, and lack of any further alerts the scene was released to law enforcement. ER staff advised hazmat units the following day, that the victims had ingested a product.” The ingested substance is believed to be an organophosphate insecticide. The GasID could not corroborate the results of the ChemPro100i because the GasID has a much higher limit of detection (~50 ppm) versus the ppb levels of sensitivity to G-series of the ChemPro100i.

- **Security sweep before a high profile sporting event:** A state capitol has a prominent college sports venue that requires a security sweep before major sporting events. A ChemPro100 was used to sweep the stadium for chemical contamination the day before the event and it consistently gave a “Nerve” alarm when scanning near the concrete risers of the stadium. Upon investigation it was found that the stadium was sprayed with pesticides to kill nuisance insects the day before it was scanned. As the event was planned for the next day the alert wasn’t considered dangerous. It is recommended to also scan the day of event before fans arrive to see if pesticide levels have decreased as expected. If the “Nerve” alarm persists the “Basic Levels” can be reset “zero-out” this background (please reference TN-009 “Canceling Background Levels: Using the ChemPro Basic Levels Display”) so that monitoring can continue throughout the event without the false alarm from the background levels of pesticides.
- **Bad odor in a trailer park:** A HazMat team was called out to investigate a “bad odor” in a trailer park. Investigation showed the odor was coming from a broken bottle of Malathion pesticide (please reference SN-004 “ChemPro100 Identifies “Unknown Odor” as an Insecticide” for more detailed information on this incident).
- **Personal protection for Marijuana Grow Houses:** Marijuana growers often hide their crop inside of houses called “Grow Houses.” These houses are closed systems which can concentrate odors and pesticides. Members of a law enforcement team were suffering side effects from exposure to pesticides in these concentrated environments. “...We have used the ChemPro at a total of 28 grow-ops...It has alerted on several occasions to the pesticides that were used within the indoor “Gardens”. As a result our members are ensuring that proper PPE along with the proper APR are be utilized, and when the unit does alert, we are ensuring that proper ventilation takes place” Many pesticides are similar in formulation to Nerve agents and will produce “Nerve” alarms on the ChemPro100i. Once the alarm has gone away the Trend mode the ChemPro100i can help confirm that areas are free of any vapors.

### Conclusion

While there seems to be little reason to use a CWA detector in daily first response operations, it is not uncommon to find CWA detectors like the ChemPro100i to be useful in responses where pesticides are found. This can be an indoor air quality call after application of a pesticide to the conscious use of pesticides while attempting suicide. Because of these uses, a versatile detector like the ChemPro100i that has CWA capabilities and usefulness in routine HazMat calls can be an excellent tool.