

# CHEMICAL WARFARE



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Two Arctic Warriors check an M8 paper stand during a sweep. The first hour after attack is the most dangerous period of time associated with a chemical attack. During this period, tiny droplets of chemical agents fall to the ground, contaminating the entire area over which they fall. It is essential that movement during the first hour after attack be limited to mission critical tasks.

## Dealing with life in a chemical environment

### Maintaining your mask

In the event of a chemical or biological attack, your gas mask may be all that separates life and death—so make sure you take good care of it.

Gas masks should be cleaned and inspected—in that order—when they are issued and after each use.

During wartime, you should complete a thorough inspection at least once every

seven days, and it should be documented on a DD Form 1574 or other approved form.

Also, a PMAT Test, Fit Test and certification must be completed prior to deploying.

During peacetime, perform and document mask inspections at least every six months.

To sanitize your mask, add two tablespoons of household bleach to a gallon of water. Then immerse your mask in the solution and agitate for three minutes.



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People within hardened permanent facilities do not need to take cover under desks or tables during an attack, but should stay away from exterior walls and windows. People within temporary shelters such as tents and trailers must take cover under sturdy furniture and wear field gear during attacks, even if the shelter is splinter protected.

### Facility Sweeps

Teams must wait to be released by the Survival Recovery Center before performing any sweeps.

- Sweeps need to be quick yet thorough.

- Up-channel information to the Unit Control Center right away using the appropriate report format in the ATSO Guide (see pages 29-32). Reports should reach the SRC 20-30 minutes after the release of sweep teams.

- Teams will complete two sweeps:

**First Sweep:** Teams must ensure they take their time in looking at the M8 paper for color changes. The droplets coming down will be very small (almost like a small pencil mark size) so they may be difficult to see on the M8, especially at night.

- Call in M8 readings immediately (positive or negative)!

- Teams should also watch out for unexploded ordnances and casualties.

- Aid casualties as necessary.

**Second Sweep:** Teams conduct a detailed search for UXOs and other hazards.

- Teams should conduct a sweep of their entire area, including vehicles and equipment outside their facilities.

- Mark UXOs according to the instructions on page 29 of the ATSO Guide.

### Using M8 paper/M9 tape

M8 paper and M9 tape are used to detect liquid nerve and blister agents.

M9 tape is used to indicate contamination on your IPE gear. It should be placed on the suit in six locations: upper arms, wrists, and ankles. If M9 paper becomes contaminated, the paper will turn a red or pinkish color. M9 only indicates the presence of chemicals, not the type of agent.

Use M8 paper on vehicles, equipment and around facilities to detect chemical contamina-

tion.

M8 paper should be attached to vehicles and equipment with duct tape, and the time and date should be written on the tape—not the M8 paper. Change the time and date each time the M8 paper is checked or replaced.

Equipment stored outdoors without overhead covering should be covered with two sheets of plastic. Simulated M8 paper should be placed on each corner of the top sheet.

On vehicles, M8 paper should be placed on all four corners of the vehicle so it can be seen from any angle of approach. Put the M8 paper on clean, horizontal surfaces to be sure it detects falling mist or droplets.

For buildings, place the M8 paper on a stand about 10 to 15 feet from each corner. Make sure it is clear of overhangs, trees or anything else that could prevent the paper from detecting chemical “rain.” Secure the paper to the stand with duct tape.

M8 paper should be changed after each chemical attack, and following inclement weather.

### Contaminated buildings

Upon identifying contaminated buildings, notify your UCC. The facility sweep teams must accomplish operational decontamination using a M291/295 kit on the single entry point door and handle of the building upon completion of their sweep. The sweep team will mark single entry points with signs that read, “Wear Chemical Protective Gloves”.

**Initial Phase** (when entering, exiting a contaminated building): After declaration of Alarm Yellow, MOPP 2, people entering a contaminated facility must wear gloves while opening the door. People do not need to assume MOPP 4 when entering or exiting the facility, but must not loiter within 10 feet of the facility during the first 24 hours following an attack.

When working within 10 feet of a contaminated building during the first 24 hours following an attack, personnel performing work (repair of the building exterior, construction or repairs within 10 feet) must remain in MOPP 4 for the duration of their work.

**Follow-on Phase:** After the first 24 hours from the time of the attack, everyone must use gloves when touching the outside of the facility.

### Chemical hazards

Chemical agents are designed to kill and injure personnel and can seriously limit the use of support vehicles, aircraft and equipment. They exist as solids, liquids, or gases and are deliverable from surface or air sources.

**NERVE:** If a nerve agent is in the environment, the color of M8 paper will change to **gold, green or blue**. Some symptoms of exposure to a nerve agent are pinpointing pupils, muscle twitching, runny nose, drooling, chest tightness, sweating, involuntary defecation and urination. To treat for a nerve agent you should don your mask and administer your auto-injectors. Nerve agents are the only chemical agents for which we have a field antidote. Decon skin that is contaminated with the M291 kit, then don the Ground Crew Chemical Ensemble and seek medical attention.

**BLISTER:** If you suspect you have been exposed to a blister agent, first verify that the color of M8 paper has changed to **red**. If it has, then check your symptoms. A blister agent will cause irritation and redness to the skin and you will notice blisters. Also, there will be inflammation of the eyes, nose, throat and trachea. To treat for exposure to a blister agent, don your mask, decon exposed skin with the M291 kit, then don the GCE and seek medical attention.

Medical representatives issue nerve agent antidotes during periods of increased readiness. Unless directed otherwise, store the antidotes in the large pocket inside of the protective mask carrier.

**Auto-injectors: Mark I kit and Nerve agent antidote:**

The auto-injectors are for use with nerve agents only. Do not use them for blister agent

symptoms.

The Mark I or Nerve Agent Antidote kits (NAAK) consist of Atropine and 2-PAM Chloride. There is a third auto injector called Diazepam that is used to relieve convulsions. Diazepam should only be used after three Mark 1 kits have been administered.

**How to use auto-injectors on yourself:**

- Immediately put on your protective mask.
- Remove one set and hold them at eye level.

- Grasp the smaller injector (Atropine) and remove yellow cap. The injector is now armed.

- Do not touch the green end until the injector is pressed against the thigh.

- Check the injection site for buttons, snaps.

- Form a fist around the injector and firmly press the green end against the injection site.

- Hold it in place for 10 seconds.

- Remove the injector carefully and massage the injection area.

- Follow the same procedures for using the larger injector (2-Pam Chloride).

- Stick the injectors through the outer front jacket pocket flap and bend the needles over. As a reminder, when outside air temperature is less than 40 degrees Fahrenheit, Atropine simulations are to be stored in the upper pockets of the GCE, not in the mask carrier.

- Wait 5-10 minutes and if symptoms still persist, seek a buddy to check your symptoms and administer the second set of injections.

- Wait another 5-10 minutes and if symptoms still persist, inject the third set followed by Diazepam.

- Seek medical assistance.

Never exceed three sets of injections. It is working if you have a rapid pulse and a dry mouth. If this occurs, do not take any more injections. Do not use your own auto-injectors on a casualty!

**How to use auto-injectors on casualties of severe nerve agent poisoning:**

- Immediately mask the casualty.

- Position the casualty on their side.

- Remove all three of the casualty's injectors.

- Hold one set at eye level.

- Check the injection site for buttons/snaps.

- Grasp the smaller injector (Atropine) and remove the yellow cap. The injector is now armed. Again do not touch the green end until the injector is pressed against the thigh.

- Form a fist around the injector and firmly press the green end against the casualty's injection site. Hold for 10 seconds.

- Follow the same procedures for the larger injector (2-Pam Chloride).

- Repeat the procedure immediately, using the second and third sets of auto injectors.

- Repeat the procedure using Diazepam.

- Stick the injectors through the outer front

jacket pocket flap and bend the needles over.

- Seek medical assistance.

**M291 Skin Decontamination Kit**

You must use the M291 Kit within three minutes of being contaminated. The sooner after contact you perform personal decontamination, the more successful you will be in neutralizing the chemical agents. This is especially true following a VX airburst attack when you've been exposed to the falling “rain” of chemical agents.

**To use the M291 kit:**

- Remove a packet from carrying pouch.

- Tear open the packet at the notch and remove the applicator.

- Unfold the applicator and slip fingers into handle.

- Thoroughly scrub contaminated area until completely covered with black powder from the applicator. The black powder is non-toxic and can remain on the skin without harm.

- Switch applicator to the other hand and repeat the previous step.

- Decontaminate neck, face if exposed.

- Wash off with soap and water and seek medical treatment when conditions permit.

**M295 Personal Decontamination Kit**

The M295 kit is for external use only. It may be slightly irritating to skin and eyes.

Keep powder out of eyes, cuts and wounds. Use water to wash toxic agents out of eyes, cuts and wounds.

Inspect kit for loose decon powder. If no powder is detected, the kit is operational.

If powder is detected, inspect each packet for leaks. Discard all leaking packets.

**To use the M295 kit follow these steps:**

- Remove decontamination packet.
- Tear open packet and remove decon mitt.

- Keep empty packet for disposal of contaminated mitt.

- Unfold decontamination mitt.

- Grasp green (non-pad) side of decontamination mitt with one gloved hand. Pat the other gloved hand until completely covered with powder.

- Insert decontaminated gloved hand into mitt and tighten wristband on glove.

- Decontaminate individual equipment by scrubbing area with mitt.

- Decontaminate gloved hand that was holding equipment.

- Place contaminated mitt in packet and discard in contaminated waste container.

- If more contamination is present, use another mitt following the procedures above.

- All personal equipment can be decontaminated with the mitt.



COURTESY PHOTO

Check your buddy. Make sure their equipment is worn correctly. Check to ensure the drawstrings at the waist and ankles are tied, the three buttons on the back of the BDO jacket are snapped to the buttons on the BDO trousers, and all velcro is attached.