

AEROSOL PROJECTOR USAGE GUIDELINES

Aerosol projectors are considered “less-lethal” weapons when properly used by trained personnel. These product usage guidelines are simply that – guidelines for safe and proper use. They **DO NOT** take the place of proper training. Should you or your Department or Agency require training, please call our Training Academy at (800) 733-3832 to arrange Instructor Certification.

The following recommendations should be followed when using ***Defense Technology/Federal Laboratories Duty Aerosol Projectors***.

Aerosol projectors should be sprayed directly in the face of the subject. Aim for the eye area (forehead, brow and eyes). Proper tactics dictate the element of surprise. When possible, deploy 4-6 feet from the subject and actuate your projector in continuous 1/2 to 1 second bursts. This will help overcome the human reflex of blinking or shutting the eyes when sprayed.

Defense Technology/Federal Laboratories Duty Aerosols should always be used with the aerosol projector in an upright position. This will avoid the possibility of releasing only the propellant and no solution. The unit will have reduced distance or cease to function if the propellant is depleted.

Environmental conditions alter the effectiveness of your projector. Always try to determine wind direction when targeting to avoid blow back. Wind, rain, snow, and sleet may reduce your effective maximum distance. Defense Technology/Federal Laboratories Duty Aerosols will work at temperatures well below 0° Fahrenheit, although distance may be compromised. Avoid exposing your projector to prolonged periods of direct sunlight or temperatures over 120° Fahrenheit due to the possibility of seal rupture.

Users should check their aerosol projectors on a regular basis, making sure lint or dirt has not clogged the nozzle and the can is not dented or damaged. Then in a safe outdoor area, spray two (double tap) 1/2 to 1 second bursts to verify proper function. This will help avoid malfunction during a force encounter.

To properly deploy Defense Technology/Federal Laboratories Duty Aerosols, grip the aerosol projector and place your thumb on the actuator button (under the safety cover) with your four fingers around the canister. This is much stronger than a three-finger grip, should a subject attempt to grab your projector. Use whichever hand is more effective for you. However, we recommend practicing with both your strong and weak hands. Small movements of the projector will help you be more target specific and increase your accuracy.

Users should routinely practice spraying the aerosol with inert practice units. These units are identical in all respects except they do not contain active agents. Protective eye wear, although not a necessity, may be used for prolonged practical training.

Your Agency or Department should devise and agree upon a code word such as “spray” or “aerosol” to warn other officers present that you are about to use your aerosol projector so that they can shield their face, or if possible, disengage from the subject to avoid cross contamination. Should a fellow officer be sprayed, refer to the product decontamination guidelines and treat accordingly.

The effects of irritant sprays vary from subject to subject and although it is a highly effective product, ***NOTHING*** is always 100% effective. Aerosol Sprays may ***NOT IMMEDIATELY*** stop a subject - consult your Department's policies to determine the proper response.



EFFECTS OF AEROSOL PROJECTORS

The psychological effects will vary from subject to subject, but the majority may exhibit the following physical effects:

- The eyes may close completely or they may blink open and closed in a rapid fashion. If the eyes are completely closed, the subject will be temporarily visually impaired and unable to see you.
- The subject's respiratory system may become inflamed causing coughing, gagging, hiccuping, or a sensation of shortness of breath. At this point, the subject's ability to resist may be reduced.
- Many subjects will experience a great degree of anxiety and may panic after being sprayed due to the effects described above.
- The subject's hands may go directly to their face to try to rub off the spray and they may drop whatever they are holding.
- The subject may shake or appear to tremble, sit down or drop to their hands and knees.
- The subject may lose their balance and lean forward or backward at the waist or "freeze up," becoming rigid and unmoving.
- The subject may not respond to verbal commands. This is referred to as ***auditory exclusion*** which can occur in any stress or panic situation. They may not be intentionally failing to comply or continuing to resist. You should approach with caution and make your own threat assessment.
- The subject may appear to be disoriented because of a combination of these effects.

EFFECTS OF CN, CS AND OC

To avoid confusion and allow for a more defined comparison between these particular agents, a generalized statement is made that "These agents are all irritating in nature." This allows the following comparisons:

CN (CHLOROACETOPHENONE)

This is a composition that affects the lachrymal glands of the human eye. These effects are readily observed by the profuse tearing which occurs when exposed to this agent. In essence, this agent can further be described in the broad sense as a tearing agent.

This agent also exhibits other distinctive traits. The exposed subject will experience a stinging sensation over exposed areas. This same stinging sensation can be experienced in other warm and moist portions of the body even if not directly exposed. Tissue redness may occur to areas effected by this agent. A drainage of the sinus cavity of the exposed subject is common. A point to take note of is the effects that this agent has on the human eyes. This agent will make the exposed subject close their eyes, basically due to the fact that when the eyes are voluntarily shut, the subject feels less discomfort. It is known that a subject can build a tolerance to this agent. It is also known that on some occasions, subjects who are in a highly agitated state, intoxicated, under the influence of drugs or mentally deranged may not be affected by exposures of CN.



EFFECTS OF CN, CS AND OC (cont.)

CS (ORTHOCHLORBENZALMALONONITRILE)

This agent can be classified as an irritant. A portion of the reactions exhibited by this agent appear to be the same as those caused by exposure to the agent CN. Again, this agent will affect the lachrymal glands of the human eyes. This will cause a tearing reaction, and sinus drainage is also present. The CS agent, however, does show the following differences: The eyes will involuntarily shut, but with a perceived effort, can be made to remain open. If the exposure is of sufficient strength, then this chemical agent can cause a perceived sensation of shortness of breath. Nausea and headaches have also been reported.

This agent causes a very distinct burning sensation to exposed tissue areas, and there are known instances when the warm moist areas of the body experience this same effect. It is a known fact that, in some instances, subjects have been known to build a tolerance against this agent. There are also cases where highly agitated subjects and subjects under the influences of alcohol or drugs have shown no effects to the exposure. The effects of CS appear stronger than those of CN.

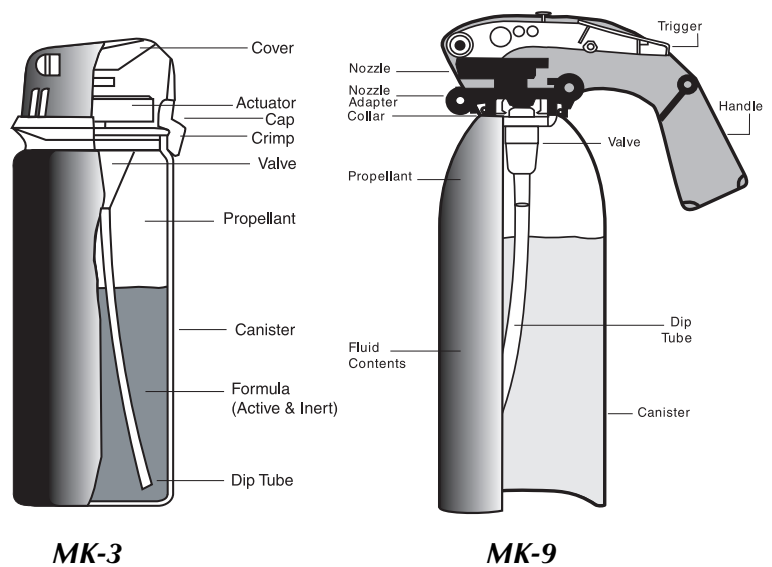
OC (OLEORESIN CAPSICUM)

This is a naturally derived substance refined from the oils and resins of various chili peppers. OC, unlike CN or CS which are synthetic chemical agents, is a food substance. OC is classified as an inflammatory. This substance affects exposed tissue membranes causing them to become inflamed. This substance also causes an intense burning sensation to sensitive exposed tissue areas. The effects, although dramatic, are short-term in duration and with no known long-lasting effects. The eyes should involuntarily close, but with a perceived effort, can be made to remain open. Although OC is not 100% effective, this substance has shown a greater success ratio when utilized properly than that of CN or CS. An additional point of consideration is the minimal contamination caused by this substance. Unlike CN or CS, OC can, as a rule, be cleaned up quicker and more cost-effectively.

COOL-IT!™ DECONTAMINATION AID

PRODUCT CODES: T010 - TOWELETTE
3050 - MK3
9050 - MK9

COOL-IT!™ has a natural herbal ingredient designed to draw the oily resin of OC out of the skin. **COOL-IT!™** also helps to counter the effects of CS and CN tear gas by breaking down the components of these chemical agents. By applying and blotting **COOL-IT!™** on the affected areas of the skin, irritation quickly subsides.



AREA DECONTAMINATION FOR OC

- STEP 1:** Ventilate the building to remove airborne OC. Open all doors and windows that weather permits. This should be accomplished as soon as possible. If fans can be placed to increase ventilation, this will help.
- STEP 2:** Surfaces can be decontaminated by washing with water or a damp cloth. The dry OC residue may be collected by means of a wet/dry vac.
- STEP 3:** Clothing and other fabrics can be cleaned in their usual manner (either by machine washing or dry cleaning).
- NOTE:** Rubber gloves and a gauze face mask should be used by personnel during the clean up stage to prevent the possibility of residual contamination. OC is a better indoor deployment option than CN or CS, as positive clean up and re-occupation of the structure can usually take place within one to two hours. Minimal clean up costs need be imposed on the deploying agency.

FIRST AID FOR OC

I. GENERAL:

1. Remove affected person from the contaminated area to an open, upwind position.
2. Keep subject calm and restrict activity.
3. Most subjects will be well on their way to total recovery 45 minutes after first aid begins.

II. EYES:

Intense burning sensation, temporary inflammation of the tissues around the eyes, causing involuntary closure.

1. Wash eyes out with large amounts of cool water.
2. Do not allow the subject to rub their eyes or face. If the need arises to use a paper towel, use in a blotting motion and discard after one use.
3. Find out if subject is wearing contact lenses. If so, allow them to remove the lenses or call EMS to remove them. Do not attempt to remove unless medically trained to do so. Contacts may become contaminated and may need to be discarded.
4. Keep eyes open facing wind.
5. Tearing helps clear the eyes.

III. NOSE:

Irritation, burning sensation, nasal discharge.

1. Breathe normally.
2. Blow nose to remove discharge and OC particulates.

IV. SKIN:

Burning sensation on affected skin areas. Redness may occur on fair skinned individuals.

1. DO NOT apply creams, salves, oils, lotions or burn cream as they will only trap the OC on the skin.
2. Flush the skin with large amounts of cool water and expose the subject to fresh air.
3. Further relief may be gained by showering with cool water using mild soap and shampooing hair, washing downward from the hairline.



AREA DECONTAMINATION FOR CN AND CS

- STEP 1:** Ventilate the building to remove airborne CN or CS. Open all doors and windows that weather permits. The sooner this can be done, the better. If fans can be placed to increase ventilation, this will help. Remove spent chemical agent casings immediately as they are heavily contaminated. Remove all contents for separate decontamination.
- STEP 2:** If CN or CS powder was used, a commercial water vacuum cleaner should be used to trap the powder. Wet cleaning where possible, using non-ionic detergents, is recommended.
- STEP 3:** Shut all doors and windows and heat the building as hot as is practical (at least four hours at a minimum of 95° F (35°C). Open a window at each end of the building. Place a fan blowing to the outside at one of the openings. Continue to heat the building. This vaporizes much of the CN or CS and carries it out of the building.
- STEP 4:** Surfaces which will not be damaged can be decontaminated with a 5% solution of baking soda (sodium bicarbonate), which will also work, but more slowly.
- STEP 5:** Dry cleaning is suggested for decontaminating clothing and other fabrics. More than one treatment may be necessary.
- STEP 6:** Exposed foods will absorb CN and CS and should be discarded. CN and CS penetrates many plastics, so wrapped foods will probably be contaminated. Foods in cans may be usable after the outside of the cans have been thoroughly cleaned. Always check with the local health department regarding the sale of merchandise that has been exposed to chemical agents.
- NOTE:** Rubber gloves and a gauze face mask should be used by personnel during the clean-up stage to prevent the possibility of residual contamination. In heavily contaminated premises, some of the above steps will need to be repeated a number of times to remove lingering traces of CN and CS.

FIRST AID FOR CN AND CS

I. GENERAL:

1. Remove affected person from the contaminated area to an open, upwind position.
2. Remain calm. Restrict activity.
3. Major discomfort should disappear within 10 to 20 minutes. If major discomfort persists, contact EMS.

II. EYES:

Burning sensation, heavy flow of tears, involuntary closing of eyes.

1. Keep eyes open facing wind.
2. Do not rub eyes.
3. Tearing helps clear the eyes.
4. If effects persist, wash out with large amounts of water.



FIRST AID FOR CN AND CS (cont.)

- III. SKIN:** Stinging or burning sensations on moist skin areas. Blisters may form.
1. **DO NOT** apply creams, salves, oils, lotions, or burn cream, as they will only trap the agent on the skin.
 2. Sit and remain quiet.
 3. Expose the affected areas to air.
 4. Cross contamination can be relieved by flushing with fresh water for at least 10 minutes.
 5. For CS, a solution of 5% to 10% sodium bicarbonate or sodium carbonate is superior to water.
- IV. NOSE:** Irritation, burning sensation, nasal discharge.
1. Breath normally.
 2. Blow nose to remove discharge.
- V. CHEST:** Irritation, burning sensation, coughing, the sensation of shortness of breath, tightness in chest, often accompanied by a feeling of panic.
1. Keep subject calm and restrict activity.
 2. Talking reassuringly to the victim may help to relieve their discomfort and prevent panic.
- NOTE:** If at any point the subject states or appears that they are in medical distress, immediately contact the EMS or a Medical Service Unit.

AREA DECONTAMINATION FOR OC/CN - OC/CS BLENDS

- STEP 1:** Ventilate the building to remove airborne CN or CS. Open all doors and windows that weather permits. The sooner this can be done, the better. If fans can be placed to increase ventilation, this will help. Remove spent chemical agent casings immediately as they are heavily contaminated. Remove all contents for separate decontamination.
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AREA DECONTAMINATION FOR OC/CN - OC/CS BLENDS

(cont.)

NOTE: Rubber gloves and a gauze face mask should be used by personnel during the clean-up stage to prevent the possibility of residual contamination. In heavily contaminated premises, some of the above steps will need to be repeated a number of times to remove lingering traces of CN and CS.

FIRST AID FOR OC/CN - OC/CS BLENDS

I. GENERAL:

1. Remove affected person from the contaminated area to an open, upwind position.
2. Keep subject calm and restrict activity.
3. Most subjects will be well on their way to total recovery 45 minutes after first aid begins.

II. EYES: Intense burning sensation, temporary inflammation of the tissues around the eyes, causing involuntary closure.

1. Wash eyes out with large amounts of cool water.
2. Do not allow the subject to rub their eyes or face. If the need arises to use a paper towel, use in a blotting motion and discard after one use.
3. Find out if subject is wearing contact lenses. If so, allow them to remove the lenses or call EMS to remove them. Do not attempt to remove unless medically trained to do so. Contacts may become contaminated and may need to be discarded.
4. Keep eyes open facing wind.
5. Tearing helps clear the eyes.

III. NOSE: Irritation, burning sensation, nasal discharge.

1. Breath normally.
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IV. SKIN: Burning sensation on affected skin areas. Redness may occur on fair-skinned individuals.

1. **DO NOT** apply creams, salves, oils, lotions, or burn cream, as they will only trap the agent on the skin.
2. Flush the subject's skin with large amounts of cool water and expose the subject to fresh air.
3. Further relief may be gained by showering with cool water using mild soap and shampooing hair, washing downward from the hairline.

V. CHEST: Irritation, burning sensation, coughing, the sensation of shortness of breath, tightness in chest, often accompanied by a feeling of panic.

1. Subject should relax and keep calm.
2. Talking reassuringly to the subject may help to relieve their discomfort and prevent panic.

NOTE: If at any point the subject states or appears that they are in medical distress, immediately contact the EMS or a Medical Service Unit.

