

SACRAMENTO POLICE DEPARTMENT

CHEMICAL AGENTS MANUAL



RM 580.07



SACRAMENTO POLICE DEPARTMENT CHEMICAL AGENTS MANUAL 2-7-22



A. CHEMICAL AGENT TRAINING

1. With the exception of individual aerosol canisters, only those supervisors trained in the use and deployment of chemical agents shall direct or participate in the decision to use chemical agents.
2. The training shall consist of classroom and field training with chemical agents using departmentally approved lesson plans and instructors.

B. CHEMICAL AGENT OPTIONS

1. The active ingredient in each of these chemical munitions (grenades or frangible projectiles) is CS or OC. Methods of deployment include handthrown and 40mm launched. CS and OC are carried into the environment as micro-pulverized solid (powder), liquid, or burning pellets (smoke). Some of these projectiles and grenades will cause fires. Each projectile and grenade shall be discussed in the following pages. The carrying agent and methods of introduction shall also be covered. These munitions shall only be deployed by officers trained in their use.
2. CS (Ortho Chlorobenzalmalononitrile)
 - a. Color code Blue.
 - b. Reaction time of 3-7 seconds and is effective for approximately one half-hour.
 - c. When deployed there is a high likelihood officers may experience some level of exposure.
 - d. Can cause the following physiological and respiratory effects:
 - (1) excessive tearing.
 - (2) excessive mucous discharge.
 - (3) involuntary closure of the eyes.
 - (4) shortness of breath.
 - (5) feeling suffocated.
 - (6) coughing, sneezing, and burning sensation through the respiratory tract.
 - e. Extreme exposures may result in, nausea, vomiting, and blistering of the skin.
 - f. Some failures may occur with:
 - (1) subjects under the influence of drugs and/or alcohol.
 - (2) subjects with mental disorders.
 - (3) animals.
3. OC (Oleoresin Capsicum)
 - a. Color code Orange.
 - b. Reaction time of 1-2 seconds and effective time of approximately one half-hour.
 - c. When deployed there is a high likelihood officers may experience some level of exposure.
 - d. Can cause the following physiological and respiratory effects:
 - (1) burning sensation and inflammation of the eyes, mucous membranes and skin.
 - (2) involuntary muscle spasm of the eye causing intermittent blinking or complete shutting of the eyes.



SACRAMENTO POLICE DEPARTMENT CHEMICAL AGENTS MANUAL



- (3) shortness of breath.
 - (4) feeling suffocated.
 - (5) coughing, sneezing and burning sensation through the respiratory tract.
- e. Some failures may occur on people and animals.
4. The arsenal of chemical agents maintained by Special Weapons and Tactics (SWAT) shall be the responsibility of the SWAT Commander.
 5. The arsenal of chemical agents maintained by patrol shall be the responsibility of each Station Captain or designee. Maintenance shall include the ordering and rotation of stock.

C. FIRSTAID

1. When a chemical agent is used, the Department shall provide first aid as soon as possible to all persons affected by its deployment
 - a. Fresh air (face into wind).
 - b. Flushing of eyes and face with large amounts of clean water.
 - c. Shower as soon as practical and launder clothing.
 - d. Never apply any oils, salves, or lotions.
2. If symptoms persist, medical aid should be obtained.

D. CHEMICAL AGENT EXPOSURE

1. Exposure normally causes no lasting effects. However, a large overdose of CS or OC without removing the subject from the environment where it was introduced can cause serious illness or even death.
2. Many variables affect the saturation. The amount of ventilation is the primary variable. Furniture, carpeting, and drapes also have an effect. The dosage (the amount of agent entering an exposed person's system) is difficult to determine. The effects of exposure to these chemical agents will vary depending on a person's general physical condition, breathing rate, etc.
3. Because of these and other considerations, it is not possible for manufacturers to recommend specific guidelines for use of chemical munitions. Indiscriminate use of chemicals must be avoided. Plans to deploy chemical munitions must be based on the tactical situation, law, and Department policy.
4. Pyrotechnics, designed for indoor use, are the most effective form of munitions (i.e. Barricaded subjects). Only pyrotechnic munitions that are specifically designed for indoor use (i.e. Tri-Chamber Flameless) should be used in an indoor enclosure.
5. The risk of serious illness or death increases with the length and concentration of the exposure. Persons who have pre-existing medical conditions may be at a greater risk of experiencing these severe effects and death. The amount of chemical agents introduced into a structure will be determined by a mathematical formula of agent exposure and time.
6. Chemical agents shall be used with caution and only by trained personnel. Life cannot exist if the oxygen content in a room is reduced by the introduction of smoke or chemical agent to less than 19.5% by volume.



SACRAMENTO POLICE DEPARTMENT CHEMICAL AGENTS MANUAL



E. DECONTAMINATION

1. Whenever a chemical agent is introduced into a structure and the situation or incident has been resolved, the following steps shall be taken:
 - a. Notify the Fire Department for ventilation and deployment of fans for aeration.
 - b. The SWAT Commander or designee shall see that the property owner of the contaminated structure receives a copy of the Sacramento Police Department Chemical Agent Notification Form (SPD 076) or that the structure is posted with a copy of the SPD 076. The name of the person to whom the form is given shall be recorded as part of the Command Post report.

F. INDIVIDUAL AEROSOL CHEMICAL AGENTS (DEF-TEC MK 4 and 6)

1. Application
 - a. Individual aerosol chemical agents are intended to be used primarily against suspects who are non-compliant. Other circumstances may exist where an officer can best resolve a conflict by the use of the individual aerosol canister. A stream of agent (liquid or foam) should be aimed at the suspect's facial area (eyes, nose and mouth) using multiple short bursts ensuring delivery directly onto the target area from a distance of [REDACTED].
 - b. As with any chemical agent, its use may not stop an attack by a suspect. Officers must have other options available. General Order 580.02 outlines reporting procedures to be complied with after the use of this agent.
2. Performance
 - a. The canisters project a liquid stream of agent up to a distance of [REDACTED]. The stream should not be projected at less than [REDACTED]. Medical follow-up must be utilized after exposure. Medical follow-up shall include aeration and flushing the eyes with water.

G. FOGGERS (DEF-TEC MK-9)

1. Application
 - a. The CS and OC foggers can be used against individual persons or crowds. The fogger can also be used to introduce chemical agents into a small area. If used against a person, the spray should be directed towards the facial area.
 - b. As with any chemical agent, its use may not stop an attack by a suspect. Officers must have other options available.
2. Performance

The chemical agent in the fogger is released in a liquid mist. The effective distance [REDACTED] and each of the magnum aerosols contains approximately [REDACTED] bursts.

H. MUZZLE BLAST DISPERSION ROUNDS (DEF-TEC #6040 and #6042)

1. Application
 - a. The muzzle blast dispersion rounds are munitions used primarily for crowd management. These muzzle blast rounds are an excellent device for deploying chemical-laden powder at close ranges in both indoor and outdoor environments. These rounds provide instantaneous emission of the chemical agent directly at or on non-compliant subjects.



SACRAMENTO POLICE DEPARTMENT CHEMICAL AGENTS MANUAL



- b. These rounds may also be used on barricaded subjects and in compliance with the First Amendment Assembly Manual (RM 532.11).
2. Performance
 - a. When fired, they give an immediate blast of a powder which contains the agent. Muzzle blast rounds are designed to deliver chemical agents in the immediate area [REDACTED] of the grenadier.
 - b. Muzzle blast dispersion rounds present no fire danger.
- I. DIRECT IMPACT ROUNDS OC 40MM DEF-TEC #6320
 1. Application
 - a. Direct impact rounds are lightweight, high speed projectiles that are spin stabilized via the incorporated rifling collar and the 40mm launcher's rifled barrel. Impact rounds are designed to be fired at a person.
 2. Performance
 - a. Direct impact rounds consist of a plastic body and a crushable foam nose that contains a powder payload. The crushable foam nose dissipates energy upon impact by releasing the powder payload.
 - b. Direct impact rounds have an optimal energy range of [REDACTED] feet but may be used in situations from [REDACTED].
 - c. Direct impact rounds shall not be intentionally fired at the head, spine or groin.
 - d. Direct impact rounds present no fire danger.
- J. SPEDE-HEAT LONG RANGE ROUNDS (DEF-TEC #6182 and #6183)
 1. Application
 - a. Spede-Heat rounds are designed to deliver one chemical or smoke canister from a launcher. The rounds have a maximum range of [REDACTED] and are primarily used as a crowd management solution when the agent is released as smoke from the canister.
 - b. Spede-Heat rounds are designed for outdoor use and have a fire-producing capability.
 - c. When launching these rounds, it is recommended to have a spotter to ensure canisters do not land on rooftops or enter windows or doorways when skip fired.
 - d. These rounds shall not be fired directly at personnel as serious injury or death may result.
 2. Performance
 - a. Spede-Heat rounds may be launched into the air from a shoulder fired launcher at an angle of [REDACTED] or they may be skip fired into the target area.
 - b. Are not designed for barricade penetration and present an extreme fire danger.
 - c. Shall not be intentionally fired directly at persons.
- K. CONTINUOUS DISCHARGE CS MUNITION (DEF-TEC #1082)
 1. Application
 - a. The Continuous Discharge CS Munition are intended for outdoor use only and smoke is the carrying agent for the chemical.
 - b. It is hand thrown and has an extreme fire danger.



SACRAMENTO POLICE DEPARTMENT CHEMICAL AGENTS MANUAL



2. Performance
 - a. The Continuous Discharge CS Munition have a pull-ring-safety lever operation and it will instantaneously discharge approximately [REDACTED] of smoke and irritant.
 - b. The longer burn time may allow for throwback by individuals wearing burn protection (i.e. welder's mitt).
 - c. It should not be deployed onto rooftops or indoors as they present an extreme fire danger.
- L. TRIPLE-CHASER CANISTER - CONTINUOUS DISCHARGE (DEF-TEC #1020)
 1. Application
 - a. The Triple Chaser Canister is intended for outdoor use only. It is a fast burning pyrotechnic grenade consisting of three separate canisters pressed together with separating charges between each section.
 2. Performance
 - a. When deployed, these canisters will separate into [REDACTED] sub-munitions which are dispersed approximately [REDACTED] allowing for increased area coverage.
 - b. It should be deployed in an underhand method that keeps the canister's body moving sideward towards the deployment site. This will assist in delivering the sub-canisters along a line.
 - c. Quick burn time minimizes throwback potential.
 - d. It should not be deployed onto rooftops or indoors as they present an extreme fire danger.
- M. HAN-BALL RUBBER BALL OC MUNITIONS - OC (DEF-TEC #1099)
 1. Application
 - a. The Han-Ball rubber ball OC munitions are fast burning, high volume continuous discharge munitions. The chemical agent is discharged through six gas ports located around the equator of the body.
 2. Performance
 - a. Designed for outdoor use in crowd management situations.
 - b. It utilizes the pull ring-safety lever operation and it has a [REDACTED] delay before a release of [REDACTED] of agent.
 - c. Due to the quick discharge time, throwback potential is greatly reduced.
 - d. It should not be deployed onto rooftops or indoors as it presents an extreme fire danger.
- N. SMOKE GRENADES (DEF-TEC #1063 and 1017)
 1. Application
 - a. The smoke grenade can be used as a signaling device, for testing wind direction, screening officer movements from a suspect, or as a carrying agent to assist the deployment of other chemical agents.
 2. Performance
 - a. It utilizes the pull ring-safety lever operation and it has a [REDACTED] delay before a release of [REDACTED] of smoke. The pocket tactical grenade will release [REDACTED] of smoke.
 - b. It should not be deployed onto rooftops or indoors as it presents an extreme fire danger.



SACRAMENTO POLICE DEPARTMENT CHEMICAL AGENTS MANUAL



O. AEROSOL OC VAPOR (DEF-TEC #1056)

1. Application
 - a. It delivers a very high concentration of OC in a powerful mist. The OC Vapor requires minimal decontamination with maximum effectiveness.
 - b. It is designed for indoor use but can be used outdoors.
2. Performance
 - a. It utilizes the pull ring-safety lever operation and it has a [REDACTED] delay before a release of vapor from three lower ports.
 - b. It presents no fire danger.

P. FLAMELESS EXPULSION CS (DEF-TEC #2042)

1. Application
 - a. Designed for indoor use and contents are expelled upon actuation of a CO₂ cartridge.
 - b. It will affect a confined area consisting of approximately [REDACTED].
 - c. Most commonly used in tactical deployment situations when dealing with barricaded subjects.
 - d. Not suited for outdoor use.
2. Performance
 - a. It has [REDACTED] delay, followed by a submunition that mechanically activates a CO₂ cartridge and the pressure expels the powder through one or two ports on the side of the canister within [REDACTED].
 - b. It is for indoor use and does not present and fire danger.

Q. OC AEROSOL GRENADE FOGGER (DEF-TEC 56854)

1. Application
 - a. Designed as an operator controlled instantaneous initiated aerosol grenade that is a non-pyrotechnic that contains no CFCs.
 - b. It is not a fire hazard and requires minimal decontamination.
2. Performance
 - a. The 6 oz. Aerosol Grenade will deliver its payload of [REDACTED] Major Capsaicinoids OC in [REDACTED]. It is most effective when used in confined areas or deployed close to the target.
 - b. It is designed for use in tactical indoor operations when a non-pyrotechnic instantaneous delivery system is desired.
 - c. It is ideal for situations where the use of pyrotechnic, powder, or liquid devices are not practical or desired. The [REDACTED] Major Capsaicinoids provides sufficient effects in confined areas of up to [REDACTED] such as attics, crawl spaces, garages, and interior rooms.

R. MK-46V VERTICAL AEROSOL PROJECTOR (DEF-TEC 56346V)

1. Application
 - a. The MK-46 features a trigger handle and is intended for use in crowd management.
2. Performance
 - a. It will deliver [REDACTED] of OC at an effective range of [REDACTED]
 - b. The [REDACTED] Major Capsaicinoids OC aerosol product utilizes a stream delivery method providing a target-specific, strong concentrated stream for greater standoff.



SACRAMENTO POLICE DEPARTMENT CHEMICAL AGENTS MANUAL



S. GAS MASKS

1. Identification

- a. [REDACTED]

2. Use

- a. Officers shall have a functioning gas mask at all times.
- b. [REDACTED]
- c. [REDACTED]
- d. It is recommended that all personnel in the immediate vicinity of the deployment of chemical agents utilize protective masks.

3. Maintenance

- a. Masks shall be stored in their designated container.
- b. Officers should remove the filter and perform a tap-test by tapping the filter against a hard surface in order to free any residual materials. The mask should be cleaned with mild, non-oil-based soap and clean water. The mask should be rinsed thoroughly and be left to air dry for approximately one hour. Specific instructions on care and cleaning this mask can be found in the instruction manual.
- c. Replace the harness assembly if the straps become frayed or threadbare.
- d. Check the rubber discs inside the inlet valve assembly. They must be totally intact and pliable.
- e. The life of the mask depends on how it is carried, stored and cared for. Every NIOSH mask has a date of manufacture listed; consult the manufacturer's instructions and warranties.
- f. If you have difficulty breathing, immediately replace the filter. When exposed to chemical environments for extended periods of time, it is recommended that the filter be replaced as necessary or at least every four hours in heavily contaminated areas.
- g. Officers shall conduct an annual departmental fit test of their issued gas mask to assure it is in working order and fits correctly.

T. LIQUID FILLED BARRICADE PROJECTILE ROUNDS (DEF-TEC #1262)

1. Application

- a. The liquid filled barricade projectile rounds are non-burning and suitable for indoor use. They are designed to penetrate barriers such as windows, particleboard doors, and interior walls. These rounds have no fire potential. The chemical agent is released in a liquid mist.

2. Performance

- a. The maximum effective range for these munitions is [REDACTED] when



SACRAMENTO POLICE DEPARTMENT CHEMICAL AGENTS MANUAL



deployed from a shoulder deployed launcher. These munitions will burst and disseminate the agent on impact.

- b. For use by [REDACTED] only and shall not be intentionally fired directedly at persons.
- c. Liquid filled barricade projectiles present no fire danger.

U. TRI-CHAMBER FLAMELESS CS MUNITIONS (DEF-TEC #1032)

1. Application

- a. It is designed specifically for indoor use for crowd control or tactical operations.
- b. It provides the option of delivering a pyrotechnic chemical device while maximizing the chemicals' effectiveness via heat and vaporization and minimizing or negating the chance of fire.

2. Performance

- a. Pyrotechnic contents are burned within the innermost of [REDACTED] canisters.
- b. The internal combustion allows the chemical-laden smoke to release through [REDACTED] ports on the outer canister side while safely containing any of the fire-producing properties within the [REDACTED] internal canisters.
- c. The fuse is shrouded to further protect surrounding materials from the possibility of fire.
- d. It has a burn time of [REDACTED] and presents little to no fire damage.
- e. They are for use by [REDACTED] only.

V. 40MM WARNING/SIGNALING MUNITION OC (DEF TEC #6028OC) AND OR AERIAL DISTRACTION DEVICE CS (SAFARILAND #6028CS) WITH CHEMICAL AGENT PAYLOAD

1. Application

- a. Launched from a 40MM platform and are designed to produce [REDACTED] of sound, and [REDACTED] candelas of light.
- b. Each munition is manufactured to deflagrate at a set distance of [REDACTED] and deliver a small amount of chemical agent payload [REDACTED]

2. Performance

- a. The 40MM aerial distraction munitions shall be used in compliance with the First Amendment Assembly Manual (RM 532.11). management and civil disobedience operations.
- b. When fired, the 40MM aerial distraction munitions are designed to travel and deflagrate [REDACTED] target when launched at a [REDACTED] angle, from a distance of 50 meters.
- c. The 40MM aerial distraction munitions are designed for outdoor use and have a fire-producing capability. These munitions shall not be intentionally fired directly at persons as serious injury or death may result.
- d. Are for use by [REDACTED] members only.