SACRAMENTO POLICE DEPARTMENT

CHEMICAL AGENTS MANUAL

RM 580.07

02-26-19

TO: ALL PERSONNEL

General Order 110.01 implements this manual and requires personnel know its contents and follow its guidelines when deploying chemical agents.

Officers shall report, through the chain of command, any discrepancies they discover between the contents of this manual and current law or the manufacturers' suggested use so that this manual shall remain as contemporary, viable, and useful as possible.

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. ARSENAL
1. The active ingredient in each of these chemical munitions (grenades or frangible projectiles) is CS or OC. Methods of deployment include hand thrown 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.
      (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 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. FIRST AID
1. When a chemical agent is used, the Department shall provide First Aid to all persons affected by its deployment. Aid should be rendered as soon as possible.
   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 SATURATION

1. Chemical agents are generally considered harmless. Exposure normally causes no lasting effects. However, a large overdose of CS or OC can cause serious illness or even death.
2. Many variables affect the situation. The amount of ventilation is the primary variable. Furniture, carpeting, and drapes also have an effect. The dosage (the amount of agent actually 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 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 and Department policy.
4. Pyrotechnics, designed for indoor use are the most effective form of munitions. Only pyrotechnic munitions that are specifically designed for indoor use should be used in an indoor enclosure (i.e. Tri-Chamber Flameless). Generally, two Tri-Chamber Flameless grenades are sufficient for one level of an average home.
5. OC and CS can cause serious illness or injury, up to and including death. 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.
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.

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 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 log.

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 (see General Order 580.02). A stream of agent (liquid or foam) should be aimed at the suspect's forehead or eyes, 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 weapons 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 face.
   b. As with any chemical agent, its use may not stop an attack by a suspect. Officers must have other weapons available.
2. Performance
   a. The chemical agent in the fogger is released in a liquid mist. The effective distance [redacted] Each of the magnum aerosols contains approximately 14 one-second bursts.

H. GAS LAUNCHERS
1. Application
   a. The 40mm gas launchers are intended to be used for firing all 40mm chemical agent projectiles in the Department's arsenal.
   b. The 40mm launchers have a rifled barrel.

I. LIQUID FILLED BARRICADE PROJECTILE ROUNDS (DEF-TEC #1162 and #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 deployed from a shoulder deployed launcher. These munitions will burst and disseminate the agent on impact.
3. **LIQUID FILLED BARRICADE PROJECTILE ROUNDS ARE FOR USE BY SWAT ONLY AND ARE NOT TO BE FIRED DIRECTLY AT PERSONS. THEY PRESENT NO FIRE DANGER.**

J. 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.
   b. These rounds may also be used on barricaded subjects and civil disobedience operations.
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.
3. MUZZLE BLAST DISPERSION ROUNDS PRESENT NO FIRE DANGER

K. DIRECT IMPACT ROUNDS 40mm (DEF-TEC #6322 and #6320)
1. Application
   a. The Direct Impact rounds are lightweight, high speed projectiles that are spin stabilized via the incorporated rifling collar and the 40mm launcher's rifled barrel. These are impact rounds designed to be fired at a person.
2. Performance
   a. The 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. The Direct Impact rounds have an optimal energy range of [redacted] feet but may be used in situations from [redacted]
3. THE DIRECT IMPACT ROUNDS SHOULD NOT BE FIRED AT THE HEAD, SPINE OR GROIN. THEY PRESENT NO FIRE DANGER

L. SPEDE-HEAT LONG RANGE ROUNDS (DEF-TEC #6182, 6183 and #1182)
1. Application
   a. The Specie-Heat rounds are designed to deliver one chemical or smoke canister from a launcher. The rounds have a maximum range of [redacted] These rounds are primarily used as a crowd management solution.
   b. The Specie-Heat rounds are designed for outdoor use and have a fire-producing capability. The agent is released as smoke from the canister. 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. These rounds should not be fired directly at personnel as serious injury or death may result.

2. Performance
   a. The 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. These rounds are not designed for barricade penetration.
3. **THE SPEDE-HEAT ROUNDS SHOULD NOT BE FIRED DIRECTLY AT PERSONS. THEY PRESENT AN EXTREME FIRE DANGER.**

M. INSTANTANEOUS BLAST GRENADES (DEF-TEC #1042)
1. Application
   a. The Instantaneous Blast Grenades are designed for indoor or outdoor use. The chemical agent is deployed as a powder.
2. Performance
   a. They are a pull-ring, safety lever operation type grenade. They instantaneously disperse the active ingredient in a powder form after a very low ordnance explosion.
3. **INSTANTANEOUS BLAST GRENADES ARE FOR USE BY SWAT ONLY. THEY PRESENT LITTLE TO NO FIRE DANGER.**

N. CONTI NUOUS DISCHARGE GRENADES (DEF-TEC #1082)
1. Application
   a. The Continuous Discharge Grenades are intended for outdoor use only. They have a high fire danger and smoke is the carrying agent for the chemical. They can be hand thrown. They are a device to control people in outdoor circumstances.
2. Performance
   a. The Continuous Discharge Grenades have the pull-ring, safety lever operation. They instantaneously discharge approximately [redacted] of smoke and irritant.
   b. The longer burn time may allow for throwback by individuals wearing burn protection such as a welder's mitt.
3. **CONTINUOUS DISCHARGE GRENADES SHOULD NOT BE DEPLOYED ONTO ROOFTOPS OR INDOORS. THEY PRESENT AN EXTREME FIRE DANGER.**

1. TRIPLE-CHASER GRENADES - CONTINUOUS DISCHARGE (DEF-TEC #1020)
2. Application
   a. The Triple Chaser Discharge Grenades are intended for outdoor use only. They are fast burning pyrotechnic grenades consisting of three separate canisters pressed together with separating charges between each section.
3. Performance
   a. When deployed, these grenades will separate into three sub-munitions spaced approximately [redacted] apart allowing for increased area coverage.
   b. Devices should be deployed in an underhand method that keeps the grenade 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.
3. **TRIPLE-CHASER DISCHARGE GRENADES SHOULD NOT BE DEPLOYED ONTO ROOFTOPS OR INDOORS. THEY PRESENT AN EXTREME FIRE DANGER.**

P. HAN-BALL RUBBER BALL GRENADES - OC **(DEF-TEC #1099)**
1. Application
   a. The Han-Ball rubber ball grenades are fast burning, high volume continuous discharge grenades. 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. They have the pull ring, safety lever operation. They have a [redacted] delay before a release of [redacted] of agent.

c. Due to the quick discharge time, throwback potential is greatly reduced.

3. **HAN-BALL RUBBER BALL GRENADES SHOULD NOT BE DEPLOYED ONTO ROOFTOPS OR INDOORS. THEY PRESENT AN EXTREME FIRE DANGER.**

Q. SMOKE GRENADES (DEF-TEC #1063 and 1017)

1. Application

b. The smoke grenades can be used as a signaling device, for testing wind direction, screening officer movements from a suspect, and as a carrying agent to assist the deployment of other chemical agents.

2. Performance

d. They have the pull ring, safety lever operation. It has a [redacted] delay before a release of [redacted] and [redacted] for the pocket tactical grenades.

3. **SMOKE GRENADES SHOULD NOT BE DEPLOYED ONTO ROOFTOPS OR INDOORS. THEY PRESENT AN EXTREME FIRE DANGER.**

R. VAPOR AEROSOL GRENADES **(DEF-TEC #1056)**

1. Application

a. The aerosol grenades deliver a very high concentration of OC in a powerful mist. The OC Vapor requires minimal decontamination while the target effect and inhalation are dramatic.

b. Designed for indoor use but can be used outdoors.

2. Performance

a. They have the pull ring, safety lever operation. It has a [redacted] delay before a release from three lower ports.

3. **VAPOR AEROSOL GRENADES PRESENT NO FIRE DANGER.**

S. TRI-CHAMBER FLAMELESS GRENADES (DEF-TEC #1032)

1. Application

a. The Tri-Chamber Flameless Grenades are designed specifically for indoor use; they can be used in crowd control environments as well as tactical deployment situations. The Tri-Chamber Flameless Grenades provide 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. This grenade's pyrotechnic contents are burned within the innermost of three canisters. The internal combustion allows the chemical-laden smoke to release through three ports on the outer canister side while safely containing any of the fire-producing properties within the two internal canisters. The fuse is shrouded to further protect surrounding materials from the possibility of fire. The grenades burn for [redacted]

3. **TRI-CHAMBER FLAMELESS GRENADES PRESENT LITTLE TO NO FIRE DANGER. THEY ARE FOR INDOOR USE BY SWAT ONLY.**

T. FLAMELESS EXPULSION GRENADES (DEF-TEC #2042)

1. Application

a. The Flameless Expulsion Grenades are designed for indoor use; this grenade's contents are expelled upon actuation of a C02 cartridge that will affect a confined area consisting of approximately [redacted]

b. The Flameless Expulsion Grenades are most commonly used in tactical deployment situations. Their applications include detection and/or dislodging of barricaded subjects. These devices are not suited for outdoor use.

2. Performance
   a. The Flameless Expulsion Grenades have a [redacted] followed by a submunition that mechanically activates a C02 cartridge. The released C02 pressure expels the powder through one or two ports on the side of the canister within seconds. These grenades are extremely safe for indoor use.
3. **FLAMELESS EXPULSION GRENADES PRESENT NO FIRE DANGER. THEY ARE FOR INDOOR USE.**

U. GAS MASKS
1. Identification
   [redacted]
2. Use
   a. Officers shall have a functioning gas mask at all times.
   [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.