

Reg # 35978-8

PM-14

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### DIRECTIONS FOR USE

It is a violation of State and Federal laws to use this product in a manner inconsistent with its labeling or the Compound 1080 cancellation order. Misuse may result in civil or criminal enforcement action.

DO NOT REMOVE TOXICANT FROM COLLARS. DO NOT USE TORN, DAMAGED OR LEAKING COLLARS. Dispose of damaged collars in accordance with the "Storage and Disposal" instructions on this label.

Put collars on the necks of sheep or goats in fenced pastures where coyote predation is occurring or is expected to occur. Use collars only in accordance with the User Instructions and Use Restrictions contained in the accompanying Technical Bulletin.

### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**STORAGE:** Store Livestock Protection Collars only in original container, in a dry, locked place away from food, feed domestic animals and corrosive chemicals. Do not store in any structure occupied by humans.

**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of such materials is a violation of Federal Law.

Dispose of wastes contaminated by 1080 (carcasses, wool hair, vegetation, soil, leather clothing, and water) under three feet of soil, at a safe location, preferably on property owned or managed by the applicator and at least one half mile from human habitations and water supplies.

When snow or frozen ground make on-site disposal impractical, up to one cubic foot of wastes may be stored in a leakproof container, in a dry, locked place for up to 90 days.

Alternatively, contact your state pesticide Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in disposing of wastes at approved hazardous waste disposal facilities.

**COLLAR DISPOSAL:** Return damaged, irreparable and/or leaking collars to the Wyoming Department of Agriculture, at Cheyenne, for disposal.

**CONTAINER DISPOSAL:** Metal and plastic container - Triple rinse contaminated and uncontaminated containers with water. Then puncture and dispose of contaminated containers and rinse as above.

## RESTRICTED USE PESTICIDE

Due to High Acute Toxicity  
and the need for highly specialized applicator training.

Collars shall be sold or transferred only by registrants or their agents and only to certified Livestock Protection Collar applicators. Collars may be used only by specifically certified Livestock Protection Collar applicators or by persons under their direct supervision.

## FOR USE ONLY IN THE STATE OF WYOMING SODIUM FLUOROACETATE (COMPOUND 1080) LIVESTOCK PROTECTION COLLAR

For use on sheep or goats to kill depredating coyotes.

ACTIVE INGREDIENT - SODIUM FLUOROACETATE	1.00%
INERT INGREDIENTS	99.00%
TOTAL	100.00%

KEEP OUT OF REACH OF CHILDREN

DANGER



POISON

### STATEMENT OF PRACTICAL TREATMENT

**IF SWALLOWED:** Induce vomiting at once with an emetic such as syrup of Ipecac; use as directed. If emetic is not available, drink 1-2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

**PROMPT TREATMENT IS MANDATORY. GET MEDICAL ATTENTION IMMEDIATELY.**

**IF ON SKIN:** Wash the exposed area twice with soap and water.

**IF IN EYES:** Flush eyes with plenty of water for at least 15 minutes.

**IF ON CLOTHING:** Remove contaminated clothing and wash before reuse. Dispose of all contaminated leather, including shoes, boots, and gloves, according to the "Pesticide Disposal" section. See disposal instruction on the side panel.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

MANUFACTURED FOR: Wyoming Department of Agriculture, Cheyenne, WY 82002-0100

U.S. PAT. 3,842,806 EPA ESTABLISHMENT NO: 35978-WY-1 / EPA REGISTRATION NO: 35978-8

NET CONTENTS: 30.4 grams (1.1 oz) per collar

### NOTICE

Seller makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risks of use and/or handling of this product when such use and/or handling is contrary to label instructions.

ACCEPT  
MAR 2 - 1994  
Under the Federal Insecticide, Fungicide, and Rodenticide Act, this pesticide is registered under EPA Reg. No. 35978-8

BEST AVAILABLE COPY

# RESTRICTED USE PESTICIDE

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and the need for highly specialized applicator training.

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DANGER



POISON

### STATEMENT OF PRACTICAL TREATMENT

**ALLOWED:** Induce vomiting at once with an emetic such as syrup of Ipecac; use as directed. If Ipecac is not available, drink 1-2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

**PROMPT TREATMENT IS MANDATORY. GET MEDICAL ATTENTION IMMEDIATELY.**

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**BEST AVAILABLE COPY**

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

#### DANGER

May be fatal if swallowed. Wear waterproof gloves when handling collars. Wash hands after handling collars or animals that have been contaminated with 1080 solution. Do not use contaminated animals for food or feed.

#### ENVIRONMENTAL HAZARDS

This product is highly toxic to wildlife. Birds and mammals feeding on carcasses of contaminated livestock may be killed. Apply this product only as specified on this label. Keep out of any body of water.

#### ENDANGERED SPECIES CONSIDERATIONS

**NOTICE:** It is a Federal offense to use any pesticide in a manner that results in the death of a member of an endangered species.

The use of 1080 in the Livestock Protection Collar has been determined to pose a hazard to several endangered species. See technical bulletin (for restriction No. 16) for specific areas where the 1080 collar cannot be used without specific approval from the U.S. Fish and Wildlife Service.

#### INFORMATION FOR PHYSICIANS

**WARNING SYMPTOMS:** 1080 poisoning results from the transformation of fluoroacetate into fluoroacrylate within cell mitochondria. Poisoning is normally characterized by a symptom-free latent period of 1/2 to 2 hours or longer between ingestion and onset of symptoms (nausea, vomiting, diarrhea, and hyperactive behavior leading to convulsions, coma, and cyanosis). Ventricular fibrillation is commonly noted and is the primary cause of death. Early symptoms include alteration of heart sounds and premature, weak cardiac contractions.

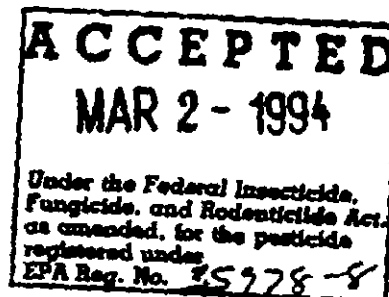
**TREATMENT:** No effective antidote is known but symptomatic treatment may be effective. Establish respiration; create artificial airway if necessary. Check adequacy of tidal volume. Initiate emesis. If patient is comatose, convulsing, or has lost the gag reflex, endotracheal intubation should precede gastric lavage with large bore tube. Administer activated charcoal and magnesium sulfate. Treat seizures with IV Diazepam. Monitor cardiac function closely. Treatment with glycerol monoacetate (monoacetin) may be effective; however, it is experimental and unproven in humans. **CONSULT NEAREST POISON CONTROL CENTER FOR CURRENT INFORMATION.** Symptoms of nonlethal intoxication will usually subside within 12-24 hours.

LIVESTOCK PROTECTION  
COLLAR LABEL

DANGER - 1080 - PELIGRO

Wyoming Department of Agriculture  
Cheyenne, WY 82002-0100

EPA ESTABLISHMENT NO: 35978-WY-1  
EPA REGISTRATION NO: 35978-8



**BEST AVAILABLE COPY**

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**TECHNICAL BULLETIN  
FOR APPLICATOR USE OF THE  
LIVESTOCK PROTECTION COLLAR**

**ACCEPTED  
with COMMENTS  
in EPA Letter Dated**

**MAR 2-1994**

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.

35978-8

Wyoming Department of Agriculture  
2219 Carey Ave.  
Cheyenne, Wyoming 82002-0100

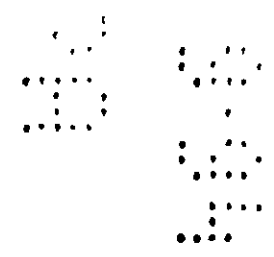
Phone: 307-777-7321

**BEST AVAILABLE COPY**

TECHNICAL BULLETIN FOR APPLICATOR USE  
OF THE LIVESTOCK PROTECTION COLLAR

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## DO'S AND DON'TS FOR THE LIVESTOCK PROTECTION COLLAR

### DO

- Read the label and instructions before using collars.
- Plan how to target coyotes to your collared animals before using collars.
- Use the appropriate size of collar: small collar for 15-50 lb. animals, large collar for animals over 50 lbs.
- Be sure to position collars correctly, (See Section I.D.2.).
- Check and repair fences if necessary before putting collared animals in pasture.
- Notify neighbors that collars can be hazardous to free-ranging pets.
- Keep warning signs in place as long as collars are being used, (See Section II, 10).
- Check collared animals weekly or more often to be sure that all are present and collars are in position and not punctured, (See Section II, 11).
- Properly dispose of all collars, animals, vegetation, soil, water, leather clothing, and containers contaminated by 1080, (See Section II, 13 and 14).
- Report any suspected poisoning of nontarget animals or humans, (See Section II, 6).
- Minimize human activity in pastures where collars are being used.
- Keep records up-to-date as directed in the labeling, (See Section II, 5).
- Take collars off when predation has stopped, or is not expected to occur.
- Store collars properly when not in use, (See Section II, 15).
- Wear waterproof gloves when handling the collars.
- Wash your hands with soap and water after handling collars.

DON'T

Waste time by placing collared animals where coyotes won't attack them.

Use collars if your livestock can be protected more easily or economically by other measures.

Use so few collared animals that coyotes won't find them.

Use more than twenty (20) collars in any 100-acre or smaller pasture, or more than fifty (50) collars per section (640 acres) of pasture, (See Section II, 17).

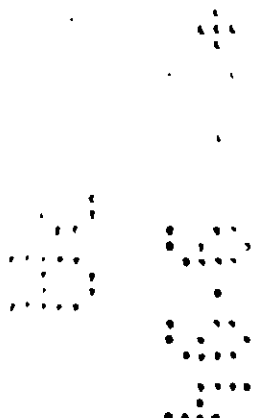
Use collars on unfenced, open range, (See Section II, 8).

Use contaminated animals for food or feed, (See Section II, 19).

Use leaking or damaged collars, (See Section II, 12).

Remove toxicant from collar, (See Section II, 7).

Use until you have consulted Section II, 16, for those counties where its use has been prohibited or requires written permission from the local office of Endangered Species, Fish and Wildlife Service.



SECTION I

USER INSTRUCTIONS

A. INTRODUCTION AND THEORY

The Livestock Protection Collar, invented by Roy McBride of Alpine, Texas, exploits the coyote's habit of killing sheep and goats by bites to the throat. As described in McBride's U.S. Patent No. 3,482,806 (issued in 1974), coyotes that attack collared livestock usually bite through the collars and receive oral doses of the contents. When used with a toxicant such as sodium fluoroacetate (Compound 1080), Livestock Protection Collars kill the attacking coyotes. Collars may be used only by specifically certified Livestock Protection Collar applicators or persons under their direct supervision (See Section II, 2). This publication is intended for the instruction of collar applicators.

Coyotes' attacking and feeding behavior do not seem to be affected by the presence of Livestock Protection Collars. Attacking coyotes usually kill and feed upon collared animals just as they would if no collar were present. After a lethal dose of sodium fluoroacetate (Compound 1080) has been ingested, symptoms of intoxication typically do not appear for two or more hours. Death occurs from two to seven hours (average four hours 20 minutes) after the collar is punctured.

When collars are used properly, coyotes may puncture them in 75 percent or more of their attacks. A 100 percent puncture rate is unlikely to be achieved because coyotes sometimes attack body sites other than the throat.

Effective use of Livestock Protection Collars requires not only that collars be positioned correctly, but also that coyote attacks be directed or targeted to collared livestock. Targeting may be difficult or impossible under some conditions. If coyotes are killing less than once per week, the collar technique may be impractical. Collars are recommended for ranches with high rates of coyote predation and management conditions that permit effective targeting of predations to collared livestock.

Experienced persons usually can evaluate local conditions quickly to decide whether or not collars will be effective. In addition to the basic problem of targeting, other factors to consider in deciding whether or not to use collars include availability and effectiveness of other control methods; costs of collars; labor requirements to collar and monitor livestock; potential hazards of collars to humans, domestic animals including pets, and nontarget wildlife; and severity of predation.

B. TOXIC PROPERTIES OF SODIUM FLUOROACETATE (COMPOUND 1080)

Compound 1080 is highly toxic to warm-blooded animals, including man, when taken internally. Humans are not likely to be poisoned except by ingestion of collar contents. Based on available estimates of toxicity (0.7-2.1 mg/kg) of collar contents.



Based on available estimates of toxicity (0.7-2.1 mg/kg) a lethal dose for a 150-pound man would be contained in 5 to 14 ml of collar solution. Each Livestock Protection Collar (contents 30 ml) contains two to six lethal doses. Before using collars, read the label (Appendix A) and the Use Restrictions in this Technical Bulletin (Section II) carefully.

The toxic solution in the Livestock Protection Collars contains a yellow dye (Tartrazine) which is used as a safety marker. Punctured, damaged, or broken collars together with clothing, animal remains, vegetation, soil, or other materials marked by this dye must be cleaned and disposed of in accordance with the label and Sections I.D.5. and II:13,14. of this Technical Bulletin. Collars with minor damage to straps or fastenings may be repaired by applicators as long as the toxicant reservoirs have not been punctured and do not leak.

Compound 1080 is hazardous to domestic animals including livestock and pets. Dogs are particularly susceptible. In field studies, dogs have died after they attacked collared livestock and punctured the collars. As little as 0.1 ml of collar contents may be fatal to a 25-pound dog. Dogs could be poisoned by scavenging the carcasses of collared livestock. Therefore, to minimize the potential hazard to dogs, promptly dispose of all livestock carcasses as well as coyote carcasses suspected of being poisoned by Compound 1080 according to instructions in this bulletin.

Pen studies have shown that an adult sheep can be fatally poisoned by eating forage containing as little as 1 ml of 1080 solution from Livestock Protection Collars. Although no livestock appeared to have been poisoned by eating contaminated vegetation during the five years of field testing, it could happen. Therefore, contaminated forage must be disposed of as directed on the product labeling.

### C. DESCRIPTION OF COLLARS

The Livestock Protection Collar is a rubber bladder that contains a solution of Compound 1080, with neck straps for attachment to a sheep or goat. The type of collar used most up to 1985, has two Velcro<sup>R</sup> neck straps (0.75 inches wide and 22-25 inches long on new collars). Three-strap models also are available and are intended for use on goats. Both two-strap and three-strap collars have two toxicant reservoirs and come in two sizes, small and large. The small collar is intended for use on lambs and kids weighing from 15 to 50 pounds. Livestock Protection Collars are not recommended for small animals (under 15 lbs.). The large collar is designed for use on large lambs and kids, and on adult sheep and goats.

### D. MANAGEMENT OF COLLARS ON SHEEP AND GOATS

1. Things to do before putting collars on livestock:
  - a. Be sure you have enough collars of proper size.
  - b. Inspect all collars for leaks and inspect straps to be sure they are securely attached. Do not use leaking or torn collars or collars on which the straps are coming loose. Loose straps may be reattached by sewing.
  - c. Check the fence around the pasture where collared animals are to be placed and repair as necessary to keep animals within the pasture.

- d. Establish locations for warning signs (Appendix B), and be sure you have enough signs.
- e. Inform neighbors of your intent to use Livestock Protection Collars and advise them of the potential hazards to free-roaming dogs.
- f. If ear tags or other marks are to be used, have the tags and related equipment on hand.
- g. Have an emetic (one-ounce bottle of syrup of ipecac) available when collars are to be handled. Also have a few good-quality plastic bags or other leakproof containers on hand for packaging damaged collars.
- h. Select and pen the target flock (animals to be collared).

## 2. Attaching Collars

Hold collars up to the necks of target livestock to determine the size of collar needed for each animal. The rubber portion of the collar should come up to the ear. If the collar is too small, there will be an unprotected region below each ear. This will result in a lower puncture rate than would be obtained with collars of proper size.

One person can put collars on livestock, but the task is much easier for a two-person team. One person holds each animal while the other attaches its collar. To attach a collar, hold it in position under the animal's throat. Tighten the rear strap over the animal's neck just behind the ears and fasten it temporarily. Then tighten the front strap over the head between the eyes and ears and fasten it securely. Straps should be positioned to keep the rubber part of the collar directly below the ear. On goats with horns, the front straps may pass in front of both horns or in front of one horn and behind the other. If necessary, use string or twine to tie the front strap to one or both horns to keep the collar in position. Once the front straps are in position, readjust the rear strap if necessary and secure it. If the straps are longer than needed, a knife or scissors can be used to trim off the excess. Fasten the strap ends by stapling.

Collar straps must be tight enough to prevent collars from slipping out of position, but not so tight as to choke the animal or cause sores. Each strap should be loose enough that the applicator can insert two fingers between the strap and the animal. Collars stay in place well on animals with wool or mohair, but may be difficult to keep in position on newly shorn or slick-necked animals, particularly goats. Head and neck conformation varies among animals and it may be impossible to keep collars in place on some individuals. They should be taken out of the collared flock.

A suitable method of permanently identifying individual animals in a target flock is required to keep track of collared livestock. One such method is the use of numbered ear tags. Tags that can be read from a distance of 50 feet or more are most useful. If you are using ear tags, attach them before the animal is collared.

When the collar is in place, release the animals into a corral or other confined area and observe it carefully. Listen for labored breathing that may indicate the collar is too tight. When first released, collared sheep and goats often shake their heads, rub or make other attempts to rid themselves of the collars. This behavior will stop within a few hours if collars are not too tight. After you are satisfied that the collars are properly attached, move collared animals to the desired location.

Place warning signs at logical points of access, (See Section II.10 and Appendix B).

After handling Livestock Protection Collars, wash your hands with soap and water.

### 3. Monitoring collared livestock

Once collared animals are in the desired location, the pasture should be checked every seven days or more often if frequent predation is expected. During each check, try to locate each animal and observe collars to be sure they are in position. If the collar has slipped out of position, catch the animal and reposition its collar. Inspect each animal's neck for yellow dye which could indicate a punctured or leaking collar. If the dye is seen, catch the animal and check the collar. Replace any damaged or leaking collars. See the label and Section I.D.5. and II.12. of this Technical Bulletin. Collars on small kids or lambs may require periodic adjustment to allow for growth.

When searching for collared livestock, watch for both animal carcasses and congregations of scavenging birds that could indicate the locations of carcasses. Whenever you visit a pasture, record the identity of each collared animal seen. Check each warning sign weekly to insure it is in place and is legible.

Based on experience gained in research studies, you will not see each collared animal every time you visit large, brushy pastures. Any animal not accounted for in two consecutive checks may be dead. An intensive search for it must be made. In addition, if more than three collared animals are not accounted for during any one check, an intensive search for these animals is required. Pastures must be systematically searched in their entirety or until the missing animals are located.

If more than nine collars and/or collared animals are unaccounted for during any 60-day period, remove all collars from animals and terminate their use. Seek technical advice if necessary to determine and correct the cause(s) of collar loss. Collar use may be resumed after adequate steps have been taken to prevent further, excessive loss of collars, (See Section II.11).

Routine checks of collared livestock are difficult if the animals are secretive or wild. Feed concentrates can be used to train animals to come to you or your vehicle. This facilitates the identification and inspection of collared livestock. It also helps to have a few tame animals in the collared flock. Binoculars may be useful for inspecting collared livestock from a distance.

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Infrequently, collars may be missing from carcasses of sheep or goats killed by coyotes. In research studies, missing collars appeared to have been carried or dragged away by coyotes. Some were found as far as a half mile away from kill sites, but about half of the missing collars were never recovered. Coyotes sometimes cache (hide or bury) them. When ever a collar is missing, make a reasonable effort to find it. (See Section II.11).

If you see any animal other than the target animals (coyotes) that you think may have been poisoned, report it promptly to the Wyoming Department of Agriculture. Any suspected poisoning of threatened or endangered species must be reported immediately. (See Section II.6).

4. **Handling collars and contaminated animal remains, vegetation, clothing, water and soil.**

The toxic solution in the small Livestock Protection Collars contains a yellow dye, Tartrazine, which is used as a marker for the presence of 1080 on punctured, damaged, or broken collars; on clothing, animal remains, vegetation, soil, or other materials; and in water. Always use waterproof gloves when handling collars or any materials known to be contaminated by 1080.

Inspect carcasses of collared animals to determine the cause of death. When the carcasses are fresh (within 24 hours after death), coyote kills usually are obvious. Remove punctured collars carefully and examine the punctures. Holes made by coyote teeth usually can be distinguished from accidental punctures. When collars are punctured by cactus thorns, the thorns sometimes remain in the holes.

If the collar was punctured, remove it carefully to minimize leakage and place in a leakproof plastic bag or other container for transport to the Wyoming Department of Agriculture for disposal. If necessary, doublebag to prevent leakage. Examine the carcass for contamination as indicated by the yellow dye. Cut away the contaminated parts for disposal along with the punctured collar, (See Section II.12-14). Dispose of what remains of the carcass using your normal practice. Cut or dig up contaminated forage and soil and place them in a leakproof container for transport to the disposal site.

If the collar was not punctured, the applicator can reuse it on another animal. Dispose of the carcass using your normal practice. No special handling is required. If an unpunctured collar has only minor damage to the straps or fasteners, the applicator may repair it.

When predation has stopped, or when collars are to be taken off for other reasons such as shearing, gather the collared flock into a corral. Hold each animal and inspect its collar for punctures. loosen the neck straps and pull them free. Do not pull so hard you rupture the collar. It may be necessary, particularly with Angora goats, to use a knife or scissors to free collar straps from the animals' hair. Clean unpunctured collars as necessary and return them to locked storage until you need them again.

If clothing becomes contaminated with 1080 solution, remove it promptly. Wash clothes before wearing them again. Contaminated leather clothing, including

gloves and footwear, should be disposed of in the same manner as contaminated animal remains because pesticides cannot be easily cleaned from leather, (See Section II.14).

5. **Disposal of damage collars and other contaminated materials**

Contaminated animal remains, vegetation, soil, water, and leather clothing must be properly disposed of. The preferred method is by deep burial under three feet of soil in a safe field location at least one-half mile from human habitations and water supplies. For disposal on the ranch, it may be convenient to drill several deep holes using a mechanized post hole auger, or to make a trench with a backhoe. Then, as waste materials are produced, they can be dropped into the hole or trench and covered with earth.

Alternatively, contact your State Pesticide or Environmental Control Agency or the Hazard Waste representative at the nearest EPA Regional Office for guidance in disposing of wastes at approved hazardous waste disposal facilities.

When snow or frozen ground make on-site disposal impractical, up to one cubic foot of wastes may be stored in a leakproof container in a dry, locked place for up to 90 days.

E. **DIRECTING COYOTE PREDATION TO COLLARED LIVESTOCK**

1. **General Comments**

The process of directing coyote predation to collared livestock is called targeting. Knowledge of targeting is in its infancy and should improve as more people gain experience with Livestock Protection Collars. Three different approaches or targeting strategies are described here. Ranchers and predation control specialists are encouraged to apply these methods as necessary to achieve the best results in their own circumstances.

2. **Targeting Strategies**

a. **Collar all vulnerable livestock**

Collaring all sheep or goats on a ranch would solve the targeting problem. This strategy has not been tested due to the cost of collars and the large number that would be required in large flocks (over 100 animals). Nevertheless, in small flocks (50 or fewer animals) it may be practical to collar all the lambs or kids. In flocks with 50 to 100 lambs or kids, it may be worthwhile to collar the smallest 20 to 50 individuals. Do not use more than 20 collars in any pasture under 100 acres, or more than 50 collars per square mile of fenced pasture.

b. **Use target (collared) flocks**

When coyotes are killing in particular pastures, remove all vulnerable livestock. Place 20 to 50 collared lambs or kids with their mothers in the

pasture while all other vulnerable animals are penned at night or moved elsewhere. Add uncollared adult sheep or goats to the target flock to increase its total size to 50 or 100 head. If coyotes have been killing adult sheep or goats in the area, both adults and kids in the target flock should be collared. Remove collars 30 days after predation ceases, or when the risk of predation has abated.

This was the strategy used in most field tests and is the usual approach when collars are introduced onto a ranch where depredation is in progress. This strategy also can be employed by placing collared flocks in vacant pastures one or two months before large bands of sheep or goats arrive.

c. Collar vulnerable individuals in large flocks

Coyotes usually prefer kids or lambs to adult goats or sheep. Experience with Angora goats has shown that if a few collared kids are placed in wether flocks (5-10 collared kids per 100 uncollared adults), coyotes will select the kids. This strategy has not been tested on sheep.

3. Mistakes in Targeting

As with any new technique, one must learn how to use Livestock Protection Collars before optimum results can be expected. Following is a list of some mistakes commonly made by persons learning this technique.

- a. Collar may be placed where effective targeting cannot be expected. In an example, 20 lambs were collared in an ewe-lamb flock containing hundreds of lambs. Coyotes subsequently killed the uncollared lambs. Effective targeting did not occur because collared lambs were far outnumbered by uncollared lambs that were equally attractive to coyotes.
- b. Collars are placed where predation is too infrequent. In one such case, collared sheep were exposed for four weeks during which no predation occurred. The users then lost interest and removed the collars. There was no further predation on this ranch for several months. Collars cannot be used effectively where there is little or no predation.
- c. Target flocks are too small. In one example, six collared lambs were left alone in a one-section pasture. Coyotes passed through the pasture without finding the collared animals and then killed sheep from a large flock in an adjacent pasture. The larger the flock, the more likely it is to attract coyotes. The optimum size for target flocks has not been determined, but pastures of 100 acres or more should probably contain at least 50 head.
- d. Target flocks are not isolated sufficiently from uncollared livestock. On one small farm, a group of ewes and collared lambs were exposed while other sheep on the place were penned each night. Instead of killing in the collared flock, coyotes switched to a neighbor's unprotected flock half a mile away. With small farm flocks, adjacent landowners may have to work together to achieve effective targeting.

- e. Small collars are used on large sheep or goats, leaving the throat region inadequately covered. Coyotes frequently kill these animals without puncturing the collars.
- f. Collars are attached improperly, or they slip out of position. Coyotes will kill these animals but are unlikely to puncture the collars.
- g. Collars are placed on sick or cull animals in an effort to avoid sacrificing more valuable livestock. This may be false economy, as coyotes may not attack ill or lethargic animals. Collars should be used only on animals of the size and kind that coyotes have been killing locally.
- h. Use of collars may be accompanied by increased human activity on the ranch. Coyotes often are wary of unusual activity and may temporarily stop killing because of it. Collars should be placed and monitored with a minimum of disruptive activity.

SECTION II

USE RESTRICTIONS

SODIUM FLUOROACETATE (COMPOUND 1080) LIVESTOCK PROTECTION COLLARS

- 1. Use of collars shall conform to all applicable Federal, State, and local regulations.
- 2. Collars shall be sold or transferred only by registrants or their agents and only to certified Livestock Protection Collar applicators. Collars may be used only by specifically certified Livestock Protection Collar applicators or by persons under their direct supervision.<sup>1</sup>

The certified applicator is directly responsible for assuring that all use restrictions are met. The certified applicator will decide, in accordance with label directions, when and under what circumstances collars will be used. The certified applicator will either apply collars or be physically present where collars are applied by a noncertified person. However, the noncertified person who has received appropriate instructions from the certified applicator may store collars, check collars in the field, remove collars, repair or dispose of damaged collars in accordance with use restrictions, retrieve collars lying in the field, and properly dispose of contaminated material and animal carcasses.

- 3. Certification of applicators shall be performed by appropriate regulatory agencies. Prior to certification, each applicator shall receive training which will include, but need not be limited to:
  - (a) Training in safe handling and attachment of collars.
  - (b) Training in disposal of punctured or leaking collars, contaminated animal remains, contaminated vegetation and soil, and contaminated clothing.
  - (c) Instructions for practical treatment of 1080 poisoning in humans and domestic animals.
  - (d) Instructions on record keeping.
- 4. Registrants or their agents shall keep records of all collars sold or transferred at their address of record. Records shall include the name, address, state where Livestock Protection Collar certification was issued, certification number of each recipient, and dates and numbers of collars sold or transferred.

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<sup>1</sup> "Direct Supervision" as described in this restriction, conforms to the requirements established under 40 CFR 171.6



5. Each applicator shall keep records dealing with the use of Livestock Protection Collars and the results of such use. Records shall be maintained in accordance with appropriate State or Federal regulations but for not less than two years following disposal or loss of collars. Such records shall include, but need not be limited to:
- (a) The number of collars attached on livestock.
  - (b) The pasture(s) where collared livestock were placed.
  - (c) The dates of each attachment, inspection, and removal.
  - (d) The number and locations of livestock found with ruptured or punctured collars and the apparent cause of the damage.
  - (e) The serial number, dates, and approximate location of collars lost.
  - (f) The species, locations, and dates of all animals suspected to have been killed by Livestock Protection Collars.
  - (g) All suspected poisonings of humans, domestic animals or nontarget wild animals resulting from collar use.
6. Any suspected poisoning of threatened or endangered species must be reported immediately (within three days) to the Wyoming Department of Agriculture, (307) 777-7321, as well as each suspected poisoning of humans, domestic animals or nontarget wild animals.
7. Only the registrant or collar manufacturer is authorized to fill collars with 1080 solution. Certified applicators are not authorized to fill collars. Compound 1080 solution may not be removed from collars and used in any other way.
8. Collars shall only be used to take coyotes within fenced pastures. Fenced pastures include all pastures which are enclosed by livestock fencing. In addition to wire livestock fences, these may include other man-made fences, such as rock walls, and natural barriers, such as escarpments, lakes, and large rivers, that will prevent escape of livestock. Collars shall not be used on unfenced, open range.
- Use of Livestock Protection Collars shall be limited to fenced pastures no larger than 2,560 acres (four square miles). Larger fenced pastures, up to a maximum of 10,000 acres, may be treated where the average annual precipitation is less than 20 inches and vegetation of the pasture is sparse, nonforested and restricted to short to midheight grasses and scattered shrubs.
- Collared livestock shall not be placed in any pasture in which the applicator cannot monitor use in accordance with all other use restrictions. In no case shall collared livestock be placed in a pasture larger than 10,000 acres.
9. Collars shall be used only where losses of sheep or goats due to predation by coyotes are occurring or, based upon prior experience, where coyote predation can reasonably be expected to occur.

10. Where collars are in use, each logical point of access (e.g. gates, trails, etc.) shall be conspicuously posted with a bilingual (English and Spanish, or other second language appropriate for the region) warning sign not less than 8" x 10" in size. Such signs shall be inspected weekly to ensure their continued presence and legibility and will be removed when collars are removed. The signs will have a minimum type size for "DANGER-POISON" of 24 point (1/4 inch). The remaining text would be at least 18 point (3/16 inch).

11. Check all collared livestock at least once every seven days and adjust collars if needed.

If any collared animal is not accounted for in two consecutive checks, an intensive search for it must be made.

In addition, if more than three collared animals are not accounted for during any one check, an intensive search for these animals is required.

If more than nine collars are unaccounted for during any 60-day period, remove all collars from animals and terminate their use. Do not resume use until adequate steps have been taken to prevent further, excessive loss of collars.

12. Damaged, punctured, or leaking collars shall be removed from the field for repair or proper disposal. Damaged collars shall be placed in leakproof containers while awaiting repair or proper disposal. Authorized collar repairs are limited to minor repairs of straps and fastenings. Leaking or punctured collars must be properly disposed.

13. Punctured, leaking, or otherwise irreparable, damaged collars shall be placed in leakproof containers and returned to the Wyoming Department of Agriculture at Cheyenne for disposal.

14. Dispose of 1080 wastes (contaminated leather clothing, animal remains, wool, hair, vegetation, water, and soil) under three feet of soil, at a safe location, preferably on property owned or managed by the applicator and at least 1/2 mile from human habitations and water supplies.

Alternatively, contact your state pesticide or Hazardous Waste representative at the nearest EPA Regional Office for guidance in disposing of wastes at approved hazardous waste disposal facilities.

When snow or frozen ground make on-site disposal impractical, up to one cubic foot of wastes may be stored in a leakproof container, in a dry, locked place for 90 days.

**Metal Container:** Triple rinse contaminated and uncontaminated containers with water. Puncture and dispose of contaminated container or rinsate as above.

**Plastic Container:** Triple rinse with water, then puncture and dispose of container and rinsate as above.

15. All persons authorized to possess and use Livestock Protection Collars shall store them under lock and key in a dry place away from food, feed, domestic animals and corrosive chemicals. Livestock Protection Collars may be stored in outbuildings or storage areas attached to, but separate from human living quarters. Collars shall not be stored in human living quarters.

- 16. The 1080 Livestock Protection Collar may not be used in the following areas without written approval from the nearest U.S. Fish and Wildlife Service Office (FWS, Endangered Species Specialist). If the U.S. Fish and Wildlife Service or the user determines that the use of the collar may adversely impact an endangered species (Black-Footed Ferret, Northern Rocky Mountain Wolf, or Grizzly Bear) in the specific areas requested, the collar may not be used in these areas. Written approval must be obtained annually for use of the Livestock Protection Collar in these areas.

STATE	COUNTIES OR AREA	NEAREST FWS OFFICE AND PHONE NUMBER
Wyoming	Fremont, Hot Springs, Park, Sublette, and Teton Counties and Yellowstone National Park	Helena, Montana (406) 449-5225

- 17. The number of collars used shall be the minimum necessary for effective livestock protection. For pastures of the following size classes, do not use more collars than the number indicated.

SIZE IN ACRES	NUMBER OF COLLARS
0 to 100	20
101 to 640	50
641 to 10,000*	100

\*See Use Restriction 8.

- 18. Each applicator will have a one-ounce bottle of syrup of ipecac available when attaching, inspecting, removing, or disposing of collars.
- 19. No contaminated animal will be used for food or feed.

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**APPENDIX A**

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**APPENDIX B**

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# **DANGER — POISON**



**TO CONTROL STOCK-KILLING COYOTES  
SHEEP OR GOATS IN THIS AREA ARE WEARING  
NECK COLLARS THAT CONTAIN A POISON, COMPOUND 1080  
(Sodium Fluoroacetate)**

**DO NOT TOUCH COLLARED LIVESTOCK,  
COLLARS, OR DEAD ANIMALS.  
DO NOT RELEASE LIVESTOCK**



# **PELIGRO — VENENO**



**PARA CONTROLAR COYOTES QUE ATACAN AL GANADO,  
ALGUNAS OVEJAS O CABRAS EN ESTA ÁREA LLEVAN  
COLLARES QUE CONTIENEN UN VENENO, COMPUESTO 1080  
(Fluoroacetato de sodio)**

**NO TOQUE LOS ANIMALES, LOS  
COLLARES, NI LOS ANIMALES MUERTOS.  
NO SUELTE A LAS OVEJAS O CABRAS.**

## DIRECTIONS FOR USE

It is a violation of State and Federal laws to use this product in a manner inconsistent with its labeling or the Compound 1080 cancellation order. Misuse may result in civil or criminal enforcement action.

DO NOT REMOVE TOXICANT FROM COLLARS. DO NOT USE TORN, DAMAGED OR LEAKING COLLARS. Dispose of damaged collars in accordance with the "Storage and Disposal" instructions on this label.

Put collars on the necks of sheep or goats in fenced pastures where coyote predation is occurring or is expected to occur. Use collars only in accordance with the User Instructions and Use Restrictions contained in the accompanying Technical Bulletin.

## STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**STORAGE:** Store Livestock Protection Collars only in original container, in a dry, locked place away from food, feed domestic animals and corrosive chemicals. Do not store in any structure occupied by humans.

**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of such materials is a violation of Federal Law.

Dispose of wastes contaminated by 1080 (carcasses, wool hair, vegetation, soil, leather clothing, and water) under three feet of soil, at a safe location, preferably on property owned or managed by the applicator and at least one half mile from human habitations and water supplies.

When snow or frozen ground make on-site disposal impractical, up to one cubic foot of wastes may be stored in a leakproof container, in a dry, locked place for up to 90 days.

Alternatively, contact your state pesticide Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in disposing of wastes at approved hazardous waste disposal facilities.

**COLLAR DISPOSAL:** Return damaged, irreparable and/or leaking collars to the Wyoming Department of Agriculture, at Cheyenne, for disposal.

**CONTAINER DISPOSAL:** Metal and plastic container - Triple rinse contaminated and uncontaminated containers with water. Then puncture and dispose of contaminated containers and rinse as above.

## RESTRICTED USE PESTICIDE

Due to High Acute Toxicity  
and the need for highly specialized applicator

Collars shall be sold or transferred only by registrants or their agents and only Protection Collar applicators. Collars may be used only by specifically certified Collar applicators or by persons under their direct supervision.

## FOR USE ONLY IN THE STATE OF WYOMING SODIUM FLUOROACETATE (COMPOUND 1080) LIVESTOCK PROTECTION COLLARS

For use on sheep or goats to kill depredating coyotes.

ACTIVE INGREDIENT - SODIUM FLUOROACETATE	1.00
INERT INGREDIENTS	99.00
TOTAL	100.00

KEEP OUT OF REACH OF CHILDREN

DANGER



POISON

## STATEMENT OF PRACTICAL TREATMENT

**IF SWALLOWED:** Induce vomiting at once with an emetic such as syrup of ipecac. If emetic is not available, drink 1-2 glasses of water and induce vomiting by touching the back of the tongue with a finger. Do not induce vomiting or give anything by mouth to an unconscious person. **PROMPT TREATMENT IS MANDATORY. GET MEDICAL ATTENTION.**

**IF ON SKIN:** Wash the exposed area twice with soap and water.

**IF IN EYES:** Flush eyes with plenty of water for at least 15 minutes.

**IF ON CLOTHING:** Remove contaminated clothing and wash before reuse. Dispose of leather, including shoes, boots, and gloves, according to the "Pesticide Disposal" instruction on the side panel.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

MANUFACTURED FOR: Wyoming Department of Agriculture, Cheyenne, WY 82002

U.S. PAT. 3,842,806 EPA ESTABLISHMENT NO: 35978-WY-1 / EPA REGISTRATION NO: 1080-1080

NET CONTENTS: 30.4 grams (1.1 oz) per collar

## NOTICE

Seller makes no warranty, expressed or implied, concerning the use of this product on the label. Buyer assumes all risks of use and/or handling of this product if handling is contrary to label instructions.

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# RESTRICTED USE PESTICIDE

Due to High Acute Toxicity  
and the need for highly specialized applicator training.

Collars shall be sold or transferred only by registrants or their agents and only to certified Livestock Protection Collar applicators. Collars may be used only by specifically certified Livestock Protection Collar applicators or by persons under their direct supervision.

## FOR USE ONLY IN THE STATE OF WYOMING SODIUM FLUOROACETATE (COMPOUND 1080) LIVESTOCK PROTECTION COLLAR

For use on sheep or goats to kill depredating coyotes.

ACTIVE INGREDIENT - SODIUM FLUOROACETATE	1.00%
INERT INGREDIENTS	99.00%
TOTAL	100.00%

**KEEP OUT OF REACH OF CHILDREN**

**DANGER**



**POISON**

### STATEMENT OF PRACTICAL TREATMENT

**IF SWALLOWED:** Induce vomiting at once with an emetic such as syrup of ipecac; use as directed. If emetic is not available, drink 1-2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.  
**PROMPT TREATMENT IS MANDATORY. GET MEDICAL ATTENTION IMMEDIATELY.**

**IF ON SKIN:** Wash the exposed area twice with soap and water.

**IF IN EYES:** Flush eyes with plenty of water for at least 15 minutes.

**IF ON CLOTHING:** Remove contaminated clothing and wash before reuse. Dispose of all contaminated leather, including shoes, boots, and gloves, according to the "Pesticide Disposal" section. See disposal instruction on the side panel.

**SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS.**

**MANUFACTURED FOR:** Wyoming Department of Agriculture, Cheyenne, WY 82002-0100

**U.S. PAT. 3,842,806 EPA ESTABLISHMENT NO: 35978-WY-1 / EPA REGISTRATION NO: 35978-8**

**NET CONTENTS:** 30.4 grams (1.1 oz) per collar

#### NOTICE

Seller makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risks of use and/or handling of this product when such use and/or handling is contrary to label instructions.

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

#### DANGER

May be fatal if swallowed. Wear waterproof gloves when handling collars. Wash hands after handling collars or animals that have been contaminated with 1080 solution. Do not use contaminated animals for food or feed.

#### ENVIRONMENTAL HAZARDS

This product is highly toxic to wildlife. Birds and mammals feeding on carcasses of contaminated livestock may be killed. Apply this product only as specified on this label. Keep out of any body of water.

#### ENDANGERED SPECIES CONSIDERATIONS

**NOTICE:** It is a Federal offense to use any pesticide in a manner that results in the death of a member of an endangered species.

The use of 1080 in the Livestock Protection Collar has been determined to pose a hazard to several endangered species. See technical bulletin (for restriction No. 16) for specific areas where the 1080 collar cannot be used without specific approval from the U.S. Fish and Wildlife Service.

#### INFORMATION FOR PHYSICIANS

**WARNING SYMPTOMS:** 1080 poisoning results from the transformation of fluoroacetate into fluorocitrate within cell mitochondria. Poisoning is normally characterized by a symptom-free latent period of 1/2 to 2 hours or longer between ingestion and onset of symptoms (nausea, vomiting, diarrhea, and hyperactive behavior leading to convulsions, coma, and cyanosis). Ventricular fibrillation is commonly noted and is the primary cause of death. Early symptoms include alteration of heart sounds and premature, weak cardiac contractions.

**TREATMENT:** No effective antidote is known but symptomatic treatment may be effective. Establish respiration; create artificial airway if necessary. Check adequacy of tidal volume. Initiate emesis. If patient is comatose, convulsing, or has lost the gag reflex, endotracheal intubation should proceed gastric lavage with large bore tube. Administer activated charcoal and magnesium sulfate. Treat seizures with IV Diazepam. Monitor cardiac function closely. Treatment with glycerol monoacetate (monoacetin) may be effective; however, it is experimental and unproven in humans. **CONSULT NEAREST POISON CONTROL CENTER FOR CURRENT INFORMATION.** Symptoms of nonlethal intoxication will usually subside within 12-24 hours.

Use this product in accordance with the Compound 1080 label or criminal enforcement.

DO NOT USE TORN, damaged collars in accordance with instructions on this label.

Use in fenced pastures where depredation is expected to occur. Use instructions and Use Technical Bulletin.

Storage or disposal.

Use only in original container, do not feed domestic animals in any structure.

Extremely hazardous. See Federal Law.

Use on carcasses, wool hair, and under three feet of ground or managed human habitations.

Use in areas where disposal is impractical, up to 100 proof container.

Environmental Control at the nearest EPA office as approved.

Use in areas where leakage or spillage, at Cheyenne, Wyoming.

Wash - Triple rinse with water. Then wash hands and rinse as directed.

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