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FACTS ABOUT 1080

Prepared in the Division of Wildlife Research

Compound 1080 is the wartime code for sodium fluoroacetate. This chemical is a fluffy white powder, highly soluble in water. It has a faint acetate odor and a mild acid-salty taste, neither of which is unusual nor objectionable. The present quality of the chemical available for use is the "Technical" grade, which contains a minimum of 90 percent sodium fluoroacetate.

The value of 1080 as an economic poison was discovered by the Wildlife Research Laboratory of the Fish and Wildlife Service during its search for new rodenticides, supported in part by the Office of Scientific Research and Development as a wartime project. It has been found to be highly toxic to most form of life on which it has been tested, including dogs, cats, rabbits, rats, mice, field rodents, chickens, ducks, pigeons, goats, horses, and monkeys. It is much less toxic to frogs. It will kill ants, cockroaches, and certain other insects.

This rather general toxicity requires that this poison be used with the utmost caution, even by persons accustomed to handling toxic materials. It should never be entrusted to inexperienced people, the danger of accidental poisoning is too great. Trained workers who have to handle the raw poison should wear masks while opening bottles and during all weighing or measuring operations. Although this chemical will not soak through the skin, if there are no cuts or abrasions, all baits containing it should be put out with spoons or special dippers.

One of the most effective ways to use 1080 for rat control is to dissolve  $\frac{1}{2}$  ounce of it in 1 gallon of ordinary tap water. This solution is then placed in  $\frac{1}{2}$  fluid ounce amounts in small containers along rat and mouse runways and around areas where damage is seen. The containers should be protected and should be inaccessible to children or pets. This poison can also be mixed with food baits, one gram being enough to treat 1 pound of bait, or 1 ounce for 28 pounds of bait.

It is recommended that water or baits poisoned with 1080 be used indoors only, with the single exception of its use to control rats on trash or garbage dumps municipally operated, with watchmen to keep persons and pets away from the premises.

Compound 1080 has been shown to be very effective in controlling field rodents. This operation is somewhat more complex than rat or mouse control and should be handled by organized crews under responsible leadership.

As this chemical is particularly toxic to cats and dogs, persons exposing it for the control of rats should take care to remove these pets from the vicinity, so that they cannot find and eat the treated bait itself or the rats or mice poisoned by it. A cat may be killed by eating a mouse that died from the effects of the poison. The hazard of secondary poisoning with 1080 is greater than with any other poison now in use. This emphasizes the necessity of permitting it to be used only by qualified and experienced people.

There is no known antidote for 1080 so the only safe way is to prevent all accidents. At the present time, first-aid treatment is limited to the use of emetics, and the poison must be eliminated within a few minutes. Cause the patient to vomit at once by tickling the throat with the finger or by giving  $\frac{1}{2}$  teaspoonful of powdered mustard in a cup of warm water. Later give a dose of Epsom Salts as a purge. CALL A PHYSICIAN AT ONCE.

#### INSTRUCTIONS FOR THE PHYSICIAN (Chemical Warfare Service Recommendations)

Compound 1080 affects the myocardium and the central nervous system. In primates, the effect on the heart is the primary cause of death. Pulsus alternans appears first, followed by premature systoles and ventricular fibrillation. The reaction on the central nervous system is characterized by epileptiform convulsions.

After the treatment to remove the poison, put the patient at complete rest. Control the central nervous system excitement by careful use of barbiturates having moderate duration of action, such as sodium amytal. Little else can be done to arrest the cardiac symptoms. If ventricular fibrillation should occur, the heroic treatment of injecting 5 cc. of a 1 percent procaine hydrochloride by intracardiac puncture will be justified in an attempt to restore an organized heart beat.

Symptoms of 1080 poisoning usually subside within 12 to 24 hours. If any evidence of myocardium injury persists, however, keep the patient in bed for at least 3 days.

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NOTE 1.--Only one manufacturing company is now producing sodium fluoroacetate (1080) in commercial quantities, and it limits the acceptance of orders to those from governmental agencies, as city, county, State, and Federal organizations connected with rodent control, and to orders from commercial pest-control firms. None is being sold directly to the general public.

NOTE 2.--Compound 1080 is a new poison, and the Wildlife Research Laboratory, Fish and Wildlife Service, 546 Custom House, Denver, Colorado, would be glad to receive reports of any unusual experiences with it.