

CAMDS was designed to destroy mustard agent by incineration, GB by reaction with sodium hydroxide solution, and VX by treatment with chlorine. However, the experience obtained to date at CAMDS suggests that incineration is the method of choice for all three agents. Explosives and propellants are thermally destroyed. Inert components and metal parts are mechanically demilitarized and decontaminated by heat treatment. In view of the dangerous materials involved, the entire facility is highly automated and designed for remote handling of items being destroyed.

Figure 1 provides a diagram of the CAMDS facility.

III. Incineration of chemical weapons

Incineration has several advantages over other methods for destruction of mustard agent, GB, and VX. Use of a common destruction method can reduce costs considerably by eliminating the need for different sets of process equipment. Furthermore, incineration produces less salt waste products to be disposed of than the chemical treatment processes do. From an arms control standpoint, incineration is preferable since it destroys the characteristic carbon-phosphorus bond of the nerve agents, thereby ensuring that the salt product cannot be recycled.

Chemical agent can be incinerated without first draining it from a munition or bulk container. This approach, called in situ incineration, is used at CAMDS for destruction of mustard agent. In principle, GB and VX could also be destroyed by this method.

Alternatively, the chemical agent may be drained from a munition or container and then injected into an incinerator. The metal component would be passed through the incinerator or separate metal parts furnace. This approach allows greater control of the incineration process and is being investigated at CAMDS for destruction of GB and VX. A similar process was used for destruction of mustard agent at Rocky Mountain Arsenal (see document CCD/436).

Since the two incineration processes present somewhat different verification tasks, they are described in detail separately below. Illustrative verification procedures, based on United States experience at CAMDS, are outlined in Section IV.

A. In-situ incineration

Figure 2 provides a schematic diagram for destruction of chemical weapons by means of in situ incineration. As indicated, the sequence of steps varies somewhat depending on whether the items being processed are in bulk storage (such as "ton" containers — commercial chemical shipping containers which hold approximately one ton of material), in munitions containing explosives, or in munitions without explosive components.