

PROMETHEUS COUNCIL

Chemical Attack

Chemical agents, including some nerve agents, are much easier to make than biological weapons. The chemicals necessary are usually readily available to individuals, they can be made in home laboratories, and many of them can be disseminated fairly easily.

Chemical agents fall into five classes:

- Nerve Agents, which disrupt nerve impulse transmissions
- Blister Agents, also called vesicants, which cause severe burns to eyes, skin, and tissues of the respiratory tract.
- Blood Agents, which interfere with the ability of blood to transport oxygen.
- Choking Agents, which severely stress respiratory system tissues.
- Irritating Agents, which cause respiratory distress and tearing, designed to incapacitate. They also can cause intense pain to the skin, especially in moist areas of the body. They are often called Riot Control Agents.

Nerve Agents

Nerve agents are similar in nature to organophosphate pesticides, but with a higher degree of toxicity. All are toxic at small concentrations (a small drop can be fatal). The agents include Sarin (GB), Soman (GD), Tabun (GA) and V agent (VX). These materials are liquids that typically are sprayed as an aerosol for dissemination. In the case of GA, GB, and GD, the first letter "G" refers to Germany where it was developed and the "V" stands for Venom while the "X" represents one of the chemicals in the specific compound.

The victim's symptoms will be an early outward warning sign of the use of nerve agents. There are various generic symptoms similar to organophosphate poisoning.

- Excessive salivation
- Lacrimate
- Urinate
- Defecate without much control
- Pinpointed pupils, dimmed and blurred vision, pain aggravated by sunlight
- Excessive sweating and fine muscle tremors
- Involuntary muscle twitching and contractions
- Runny nose and nasal congestion, chest pressure and congestion, coughing and difficulty in breathing
- Abdominal pain, nausea and vomiting
- Giddiness, anxiety, difficulty in thinking and sleeping

Nerve agents resemble water or light oil in pure form and possess no odor. The most efficient distribution is as an aerosol. Small explosions and equipment to generate mists (spray devices) may be present. These agents kill insect life, birds and other animals as well as humans.

Blister Agents

Blister agents are also referred to as mustard agents due to their characteristic smell. They readily penetrate layers of clothing and are quickly absorbed into the skin. Mustard (H, HD, and Lewisite (L) are common blister agents. All are very toxic, although much less so than nerve agents. A few drops on the skin can cause severe injury, and three grams absorbed through the skin can be fatal. Symptoms may not appear for hours or days. The symptoms of blister agents include:

- Eyes reddening, congestion, tearing, burning and a gritty feeling, swelling of the eyelids, severe pain and spasm of the eyelids.
- Within 1 – 12 hours, initial mild itching of the skin followed by redness, tenderness, and burning pain, followed by burns and fluid-filled blisters. The effects are enhanced in the warm, moist areas of the groin and armpits.
- Within 2 – 12 hours, a burning sensation in the nose and throat, hoarseness, profusely running nose, severe cough and shortness of breath.
- Within 2 – 3 hours, abdominal pain, nausea, bloodstained vomiting and bloody diarrhea.

Blister agents are heavy, oily liquids, dispersed by aerosol or vaporization, so small explosion or spray equipment may be present. In a pure state they are nearly colorless and odorless, but slight impurities give them a dark color and an odor suggesting mustard, garlic or onions.

Blood Agents

Blood agents interfere with the ability of the blood to transport oxygen, and result in asphyxiation. Common blood agents include hydrogen cyanide (AC) and cyanogen chloride (CK). Cyanide and cyanide compounds are common industrial chemicals. CK can cause tearing of the eyes and irritate the lungs. All blood agents are toxic at high concentrations and lead to rapid death. Affected persons require removal to fresh air and respiratory therapy. Symptoms of people affected by blood agents include:

- Respiratory distress
- Vomiting and diarrhea
- Vertigo and headaches

Under pressure, blood agents are liquids. In pure form, they are gasses. Precursor chemicals are typically cyanide salts and acids. All have the aroma of bitter almonds or peach blossoms. They are common industrial chemicals and are readily available.

Choking Agents

Choking agents stress the respiratory tract. Severe distress causes edema (fluid in the lungs), which can result in asphyxiation resembling drowning. Chlorine and phosgene, common industrial chemicals, are choking agents. Symptoms include:

- Severe eye irritation
- Respiratory distress (coughing and choking)

Most can have and odor of chlorine, others, which are phosgene has the odor of newly cut hay. Both are gases, they must be stored and transported in bottles or cylinders.

Irritating Agents

Irritating agents, also known as riot control agents or tear gas, are designed to incapacitate. Generally, they are nonlethal; however, they can result in asphyxiation under certain circumstances. Common irritating agents include chloropicrin, MACE (CN), tear gas (CS), capsicum / pepper spray and dibenzoxazepine (CR).

Symptoms include:

- Burning or irritation of the eyes and throat, tearing of the eyes

- Respiratory distress, coughing, choking and difficulty breathing
- High concentrations may lead to nausea and vomiting

These agents can cause pain, sometimes severe, on the skin, especially in moist areas. Most have an odor of pepper or tear gas.

The primary routes of exposure for chemical agents are inhalation, ingestion, and skin absorption / contact. Injection is a potential source of entry, but is less likely. With the exception of blister agents, inhalation is the primary route of exposure for chemical agents. However, skin absorption / contact with irritant nerve agents and blister agents also are a highly possible route of exposure.

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