

Chemical Weapons Then And Now

CIRCA 600 B.C.

The Athenians besiege the city of Kirrha, in ancient Greece. They poison the besieged city's water supply with heart-toxic extracts of hellebore plants (shown).

A.D. 256

Dura-Europos, a Syrian outpost of the Roman Empire, is under siege by a Persian army. The Persians ignite jars of bitumen and sulfur to suffocate the Romans.

13TH CENTURY

The Chinese produce gunpowder bombs filled with feces and poison to use against the Mongols. The poisonous ingredients include arsenic compounds; crushed *Mylabris* beetles, many of which produce a blistering agent called cantharidic acid; and aconite root (shown), which causes nausea, convulsions, and breathing impairment.



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1675

The first international agreement on chemical weapons bans the use of poison-laced bullets and is signed by France and Germany in Strasbourg.

1845

During their conquest of Algeria, the French trap 1,000 Algerian soldiers in a mine and use a "poison fog," likely some form of smoke, to kill them.



WIKIPEDIA/TIMOTHY O'SULLIVAN

1861–64

Both armies in the American Civil War consider using, but do not deploy, chemical weapons. Ideas include spraying chloroform, sulfuric acid, and hydrochloric acid; deploying poisonous gas, such as chlorine gas, from both balloons and projectiles; and filling glass grenades with cacodyl, an arsenic-containing poison liquid.

1907

Many Western nations, including Germany, England, and France, sign on to an international agreement forbidding the use of poisons and poisonous weapons in battle.

AUGUST 1914

The French Army uses tear gas grenades on the Western Front during World War I.

OCTOBER 1914

At Neuve-Chapelle battlefield, in France, the German Army fires 3,000 shells containing the lung irritant dianisidine chlorosulfate at the British Army. The poison, however, is destroyed in the explosion. The British soldiers don't realize they've been attacked with a (failed) chemical weapon.

COLLECTION IN FLANDERS FIELDS MUSEUM YPRES



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APRIL 22, 1915

The Germans launch the first large-scale, successful gas attack against Allied troops in Belgium, near the town of Ypres. Chemist Fritz Haber oversees the deployment of 170 metric tons of chlorine gas in 5,730 cylinders. More than 1,100 people die and 7,000 are injured.

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SEPT. 25, 1915

The British Army retaliates against the German chemical weapon attack with chlorine gas at the Battle of Loos, in France.

DEC. 19, 1915

Germans use phosgene on the Western Front for the first time. More than 1,000 British soldiers are injured; over 100 people die.

WIKIPEDIA

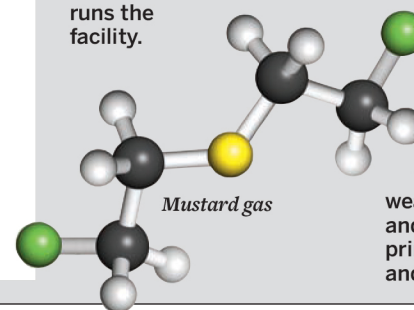


JULY 12, 1917

The German Army uses mustard gas for the first time, resulting in more than 2,000 casualties.

MAY 1918

The U.S. establishes Edgewood Arsenal in Maryland to research chemical weapons; the nation's newly created Chemical Warfare Service runs the facility.



JUNE 1918

The Allies begin using mustard gas on the Germans.

OCT. 13–14, 1918

A young Adolf Hitler experiences a gas attack when he is a messenger-soldier in the German Army stationed near Ypres, in Belgium.

NOV. 11, 1918

World War I ends. All told, chemical weapons kill 90,000–100,000 people and cause 1.3 million casualties. The primary culprits are chlorine, phosgene, and mustard gas.

ACROLEIN *Bis*(2-CHLOROETHYL SULFIDE) (MUSTARD GAS) BROMINE CHLORINE CYANOFORMATE ESTERS DIMETHYLCHLOROARSINE ETHYL IODOACETATE HYDROGEN CYANIDE IODOACETONE METHYL CHLOROSULFATE PHENYLCARBYLAMINE CHLORIDE PHOSGENE THIOPHOSGENE

1925

International efforts to ban the use of chemical weapons intensify after World War I. The Geneva Protocol bans the use of chemical and biological agents in war, but it does not prohibit the development, production, or stockpiling of such weapons.



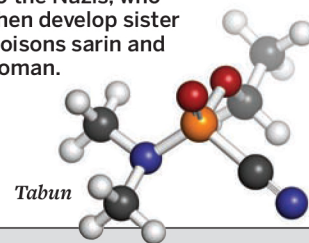
WIKIPEDIA/CLINTON BENNETT

1935–36

The Italian military, under Mussolini's direction, deploys mustard gas in Ethiopia against indigenous fighters who have no gas protection.

DEC. 23, 1936

Trying to develop a new pesticide for use in food preservation, German chemist Gerhard Schrader synthesizes tabun, a deadly nerve agent. The discovery is reported to the Nazis, who then develop sister poisons sarin and soman.



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1939–45

During World War II, the Nazis use poison gases in concentration camps, and the Japanese use them in China. But chemical weapons are not used on European battlefields.

MAY 6, 1953

A British soldier is killed by sarin when he participates in human experiments at the British chemical weapons research facility at Porton Down. The military covers it up for decades.



1961–71

The U.S. deploys the herbicide Agent Orange during the Vietnam War.

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1972

In conjunction with the 1925 Geneva Protocol, the Biological & Toxin Weapons Convention bans the development, production, or possession of biological weapons.

1980s

Iraq uses chemical weapons against Iran during the Iran-Iraq War. After unsuccessfully seeking international support against the attacks, Iran establishes its own chemical weapons program. Both countries are signatories of the Geneva Protocol.

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STRINGER/REUTERS/NEWSCOM



1997

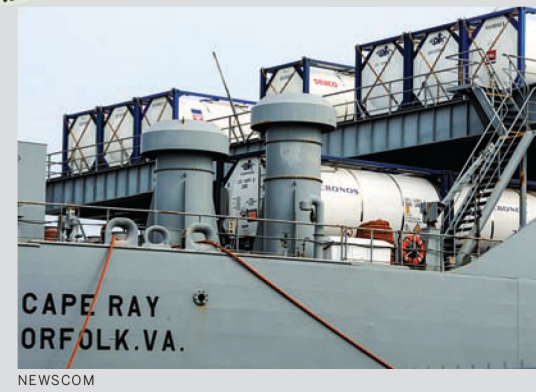
The Chemical Weapons Convention goes into effect. It bans the development, production, stockpiling, and use of chemical weapons and includes destruction timelines for existing arsenals.

2013

Hundreds of Syrian civilians are killed by their military's use of sarin. Under the threat of a U.S. military strike, the Syrian government turns its arsenal of chemical weapons over to the international community for destruction.

2014

U.S. civilian and military specialists onboard the U.S. cargo ship *Cape Ray* neutralize the most dangerous chemicals in Syria's declared arsenal: 600 metric tons of a precursor for sarin and 20 metric tons of liquid sulfur mustard, a blistering agent.



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