Chemical and Biological Weapons Status at a Glance

Updated: June 2018

Despite the progress made by international conventions, biological weapons (BW) and chemical weapons (CW) still pose a threat.

More progress has been made by Chemical Weapons Convention (CWC) states-parties and the Organization for the Prohibition of Chemical Weapons (OPCW) in the destruction of declared CW stockpiles. Progress on the implementation of the Biological Weapons Convention (BWC), however, has been slower due to the lack of a formal verification mechanism.

There are 180 states parties to the BWC, including Palestine, and six signatories (Central African Republic, Egypt, Haiti, Somalia, Syria, and Tanzania). Eleven states have neither signed nor ratified the BWC (Chad, Comoros, Djibouti, Eritrea, Israel, Kiribati, Micronesia, Namibia, Niue, South Sudan and Tuvalu).

For more information about the BWC, please see BWC at a Glance.

There are 193 states parties to the Chemical Weapons Convention. Israel has signed but not ratified the convention and Egypt, North Korea, South Sudan have neither signed nor ratified the CWC.

For more information about the CWC, please see CWC at a Glance and Chemical Weapons: Frequently Asked Questions.

Below is a list of states believed to currently possess or have once possessed biological and/or chemical weapons and their current status. Some states have officially declared BW or CW programs, while other programs have been alleged to exist by other states. Therefore, both official declarations and unofficial allegations of chemical and biological weapons programs are included below.

ALBANIA

Chemical Weapons

State declaration: Although it joined the CWC in 1994, Albania did not acknowledge its possession of 16 metric tons of mustard agent (as well as small quantities of lewisite and other chemicals) until 2003. The OPCW declared Albania’s destruction complete in July 2007.

CHINA

Biological Weapons

State declaration: China states that it is in compliance with its BWC obligations and that it has never had an active BW program.

Allegations: According to the United States, China’s BW activities have been extensive and a 1993 State Department Compliance Report alleged that activities continued after China joined the BWC.
The 2010 report indicates that little information is known about China’s activities, and that recent dual-use activities may have breached the BWC. Existing infrastructure would allow it to develop, produce, and weaponize agents. The 2017 report does not discuss China’s BWC compliance or noncompliance.

Chemical Weapons

**State declaration:** China states that it is in compliance with the CWC. China declared in 1997 that it had a small offensive CW program that has now been dismantled, which has been verified by over 400 inspections by the OPCW as of 2016.

**Allegations:** The U.S. alleged in 2003 that China has an “advanced chemical weapons research and development program.” However, these allegations have decreased in magnitude in recent years and the State Department’s 2017 report on compliance with the CWC cited no such concerns.

**Other information:** Approximately 350,000 chemical munitions were left on Chinese soil by Japan during the Second World War. Work with Japan to dispose of these is ongoing.

**CUBA**

**Biological Weapons**

**State declaration:** Cuba denies any BW research efforts.

**Allegations:** A 2003 State Department Compliance Report indicated that Cuba had “at least a limited developmental offensive biological warfare research and development effort.” The 2010 report claimed that “available information did not indicate Cuba's dual-use activities during the reporting period involved activities prohibited by the BWC.” The 2017 report did not mention any problems with Cuba’s compliance with BWC.

Allegations of BW programs have been made by Cuban defectors in the past.

**Other information:** Cuba has a relatively advanced biotechnology industrial capabilities.

**EGYPT**

**Biological Weapons**

**State declaration:** Two vague statements alluding to a BW capability were made by President Saddat and one of his ministers in 1972, but Egypt has not officially declared a biological weapons stockpile.

**Allegations:** There have been various allegations that Egypt possesses biological weapons. Some argue that Egypt’s reluctance to ratify the BWC signals that it does possess biological weapons. The 2014 State Department compliance report notes that Egypt has "continued to improve its biotechnology infrastructure" over the past three years, including through research and development activities involving genetic engineering, as of 2013's end, "available information did not indicate that Egypt is engaged in activities prohibited by the BWC." The 2017 State Department report does not mention any problems with Egypt's compliance with the BWC.

**Chemical Weapons**

**Allegations:** There is strong evidence that Egypt employed bombs and artillery shells filled with phosgene and mustard agents during the Yemen Civil War from (1963 – 1967) but it is unclear if Egypt currently possesses chemical weapons. In 1989, the United States and Switzerland alleged that Egypt was producing chemical weapons in a plant north of Cairo. As a non-party to the CWC, Egypt has not had to issue any formal declarations about CW programs and capabilities.
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Chemical Weapons

**State declaration:** India declared in June 1997 that it possessed a CW stockpile of 1,044 metric tons of mustard agent. India completed destruction of its stockpile in 2009.

**IRAN**

Biological Weapons

**State declaration:** Iran has publicly denounced BW.

**Allegations:** The Defense Intelligence Agency alleged in 2009 that Iran’s BW efforts “may have evolved beyond agent R&D, and we believe Iran likely has the capability to produce small quantities of BW agents but may only have a limited ability to weaponize them.”

The 2010 report assesses that there is evidence showing Iran continues dual-use activities, but there is no conclusive evidence showing BWC violations. The 2017 State Department report on compliance with the BWC does not mention any problems with Iran’s compliance with the BWC.

Chemical Weapons

**State declaration:** Iran has denounced the possession and use of CW in international forums.

**Allegations:** Pre-2003 U.S. intelligence assessments alleged that Iran had a stockpile of CW. This stockpile is thought to have included blister, blood, and choking agents and probably nerve agents. After 2003, however, the United States stopped making such allegations. The United States claimed it was unable to ascertain if Iran is meeting its obligations under the CWC, according to a [State Department 2017 report](https://www.state.gov) on compliance with the CWC.

**Other information:** Iran suffered tens of thousands of casualties from Iraqi use of chemical weapons during the 1980-1988 Iran-Iraq war. Iran’s CW program is believed to have been started after Iraqi CW use. There are no known credible allegations that Iran used any chemical weapons against Iraq in response.

**IRAQ**

Biological Weapons

**State declaration:** Iraq admitted to testing and stockpiling BW in the mid-1990s. These stockpiles appear to have been destroyed prior to the 2003 invasion. There have been no declarations about BW after 2003.

Chemical Weapons

**State declaration:** Iraq had an extensive chemical weapons program before the Persian Gulf War dating back to the 1960s under which it produced and stockpiled mustard, tabun, sarin, and VX. Iraq delivered chemical agents against Iranian forces during the Iran-Iraq War using aerial bombs, artillery, rocket launchers, tactical rockets, and helicopter-mounted sprayers and it also used chemical weapons against its Kurdish population in 1988. Its program was largely dismantled by United Nations weapons inspectors in the 1990s.

Iraq declared in August 1998 that it had dismantled all of its chemical weapons in partnership with the UN Special Commission established for that purpose.

Iraq then submitted an additional declaration to the OPCW of an unknown quantity of chemical weapons remnants contained in two storage bunkers in March 2009. Destruction activities were delayed due to an unstable security situation, but began in 2017. On March 13, 2018, the OPCW announced that all of Iraq’s chemical weapons had been destroyed.
ISRAEL

Biological Weapons

State declaration: Israel has revealed little in terms of its biological weapons capabilities or programs.

Allegations: There is belief that Israel has had an offensive BW program in the past. It is unclear if this is still the case.

Chemical Weapons

Allegations: Some allege that Israel had an offensive CW program in the past. It is unclear if Israel maintains an ongoing program.

LIBYA

Biological Weapons

State declaration: Libya announced in December 2003 that it would eliminate its BW program.

Allegations: Between 1982 and 2003 there were many allegations of a Libyan biological weapons program, although later inspections failed to reveal any evidence to support these claims.

Chemical Weapons

State declaration: In 2003, Libya announced it would be abandoning its CW program and in 2004 it declared possession of chemical agents and facilities. Libya declared 24.7 metric tons of mustard agent in bulk containers. In addition, it declared one inactivated chemical weapons production facility, two chemical weapons storage sites, 1,300 metric tons of precursor chemicals, and 3,563 unfilled aerial bombs. Libya completed the destruction of its Category 1 chemical weapons in January 2014. With assistance from the OPCW and other member states, Libya removed all of the remaining chemical weapons from its territory for destruction in August 2016. In January 2018, the OPCW declared that Libya's entire chemical weapons arsenal had been destroyed.

For more information on Libya's disarmament see Chronology of Libya's Disarmament and Relations with the United States.

NORTH KOREA

Biological Weapons

Allegations: The 2010 State Department report on compliance with the BWC remarks that North Korea may “still consider the use of biological weapons as a military option.” In a 2012 Ministry of National Defense White Paper, South Korea asserted that “North Korea likely has the capability to produce[...] anthrax, smallpox, pest, francisella tularensis, and hemorrhagic fever viruses.”

Chemical Weapons

Allegations: North Korea is widely believed to possess a large chemical stockpile including nerve, blister, choking, and blood agents. The 2012 unclassified intelligence assessment provided to Congress states that North Korea has a "long standing CW program" and "possesses a large stockpile of agents." In February 2017, North Korean agents used VX, a nerve agent, to assassinate Kim Jong Nam, the half-brother of Kim Jong Un in Malaysia.

RUSSIA

Biological Weapons
**State declaration:** In January 1992, Boris Yeltsin acknowledged that the Soviet Union had pursued an extensive and offensive BW program throughout the 1970s and 1980s. However, since joining the BWC in 1992, Russia has repeatedly expressed its commitment to the destruction of its biological weapons.

**Allegations:** The Soviet Union’s extensive offensive germ program included weaponized tularemia, typhus, Q fever, smallpox, plague, anthrax, Venezuelan equine encephalitis, glanders, brucellosis, and Marburg. The Soviet Union also researched numerous other agents and toxins that can attack humans, plants, and livestock.

The United States has repeatedly expressed concern about Russia’s inherited biological weapons program and uncertainty about Russia’s compliance with the BWC.

The 2010 State Department report on compliance with the BWC details that Russia continues to engage in dual-use biological research activities, yet there is no evidence that such work is inconsistent with BWC obligations. It assesses that it remains unclear whether Russia has fulfilled its obligations under Article I of the convention. The 2017 report states that “Russia’s annual BWC CBM submissions since 1992 have not satisfactorily documented whether the BW items under these programs were destroyed or diverted to peaceful purposes, as required by Article II of the BWC.”

**Chemical Weapons**

**State declaration:** Russia possessed the world’s largest chemical weapons stockpile: approximately 40,000 metric tons of chemical agent, including VX, sarin, soman, mustard, lewisite, mustard-lewisite mixtures, and phosgene.

Russia has declared its arsenal to the OPCW and commenced destruction. Along with the United States, Russia received an extension when it was unable to complete destruction by the 2012 deadline imposed by the CWC. A 2016 OPCW report indicated that as of 2015, Russia had destroyed about 92 percent of its stockpile (around 36,7500 metric tons). On September 27, 2017, the OPCW announced that Russia completed destruction of its chemical weapons arsenal.

**Allegations:** The U.S. has some reservations about Russian compliance with the CWC, as expressed in the 2017 State Department report on CWC compliance which stated “The United States cannot certify that Russia has met its obligations under the Convention,” and asserted that Russia had not made a complete declaration of its stockpile.

The UK accused Russia of assassinating a former Russian spy, Sergei Skripal, and his daughter Yulia, in the UK using the chemical agent Novichok on March 4, 2018.

**SOUTH KOREA**

**Chemical Weapons**

**State declaration:** South Korea declared a chemical weapons stockpile of unspecified agents when it joined the CWC in 1997 and completed destruction of its declared arsenal on July 10, 2008. It does not admit publically that it possessed chemical weapons and was noted in OPCW materials as a “state party.”

**SUDAN**

**Chemical Weapons**

**State declaration:** After acceding to the CWC in 1999, Sudan declared only a small selection of unspecified riot control agents.

**Allegations:** There are unconfirmed reports that Sudan developed and used CW in the past. The U.S. bombed an alleged CW factory in 1998. There have been no serious allegations in recent years.
Sudan was not included in the 2017 State Department report on compliance with the CWC.

SYRIA

Biological Weapons

State declaration: In July 2012, a spokesman for the Syrian Foreign Ministry confirmed that the country possesses biological warfare materials, but little is known about the extent of the arsenal. On July 14, 2014, Syria declared the existence of production facilities and stockpiles of purified ricin, although little is known about the continued existence of such facilities in 2017.

Chemical Weapons

State declaration: On September 20, 2013, Syria submitted a declaration of its chemical weapons and facilities to the OPCW after years of denying the program’s existence. The OPCW announced that the entirety of Syria’s declared stockpile of 1,308 metric tons of sulfur mustard agent and precursor chemicals had been destroyed in January 2016. However, reports continue to surface of chemical weapon use in Syria, raising questions about the accuracy of its initial declaration.

Allegations: Syria had an extensive program producing a variety of agents, including nerve agents such as sarin and VX, and blistering agents, according to governments and media sources. There were also some allegations of deployed CWs on SCUD missiles. Several UN-OPCW Joint Investigative Mechanism (JIM) reports have found that the Syrian government was responsible for chemical weapons attacks in Syria, including in April 2014, March 2015, March 2016, and April 2017 and that the Islamic State was responsible for chemical weapons attacks in Syria in August 2015 and September 2016.

For more information about Syrian chemical weapon use see Timeline of Syrian Chemical Weapons Activity, 2012-2018.

TAIWAN

Chemical Weapons

State declaration: Taiwan has declared that it possesses small quantities of CW for research but denies any weapons possession.

THE UNITED STATES

Biological Weapons

State declaration: The United States unilaterally gave up its biological weapons program in 1969. The destruction of all offensive BW agents occurred between 1971 and 1973. The United States currently conducts research as part of its biodefense program.

Allegations: According to a compliance report published by the Russian government in August 2010, the United States is undertaking research on Smallpox which is prohibited by the World Health Organization. Russia also accused the United States of undertaking BW research in order to improve defenses against bio-terror attacks which is “especially questionable from the standpoint of Article I of the BTWC.”

Chemical Weapons

State declaration: The United States declared a large chemical arsenal of 27,770 metric tons to the OPCW after the CWC came into force in 1997. Along with Russia, the United States received an extension when it was unable to complete destruction of its chemical stockpiles by 2012. A 2016 OPCW report declared that the United States had destroyed approximately 90 percent of the chemical weapons stockpile it had declared as the CWC entered into force; nearly 25,000 metric tons of the declared total of 27,770. The United States has destroyed all of Category 2 and Category 3
weapons and is projected to complete destruction of its Category 1 weapons by 2023.

**Allegations:** A 2010 Russian report alleged that the United States has legislation which could inhibit inspections and investigations of U.S. chemical facilities. Russia has also accused the United States of not fully reporting chemical agents removed from Iraq between 2003 and 2008 and sent to the United States for testing and subsequent destruction.

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