

CRS Insights

Syria's Chemical Weapons: Progress and Continuing Challenges

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On August 18, the Organization for the Prohibition of Chemical Weapons (OPCW) announced the complete destruction of Syria's declared chemical weapons (CW). Despite this significant achievement, serious challenges relating to Syrian CW remain. In early September, the Syrian regime announced previously undeclared chemical weapons research facilities, raising questions about what else it might be concealing. Repeated reports have alleged chlorine gas attacks by the Assad regime. Moreover, press reports speculate that insecure chemical weapons stocks in Syria and Iraq may have gotten into the hands of the Islamic State (ISIL). Most of these questions cannot yet be answered definitively, but the fate of Syria's CW capabilities warrants continued attention.

Syria's CW program began in the 1970s with help from the Soviet Union, primarily as a hedge against Israel. After joining the Chemical Weapons Convention (CWC), Syria declared 1,300 metric tons of [chemical warfare agents](#) and precursor chemicals, including several hundred metric tons of the nerve agents sarin and VX, as well as mustard agent in ready-to-use form. The nerve agents were stored as two separate components that are combined before use, a form that facilitated removal and destruction efforts.

Destruction of Syria's Chemical Weapons and Production Facilities

As part of a diplomatic deal after the Obama Administration [threatened military action](#) against Syria in response to reports of a large-scale CW attack against civilians on August 21, 2013, Syria joined the CWC, which required it to destroy all chemical weapons stocks and production facilities under [international supervision](#). From January through June 2014, all 1,300 tons of Syria's declared chemical weapons agents were moved out of the war-torn country in a dangerous and unprecedented international effort. The United States provided [mobile destruction units](#) for the most deadly agents aboard the U.S. Maritime Vessel *Cape Ray*. On August 18, the *Cape Ray* completed the neutralization of about 600 metric tons of "priority 1" chemicals, the first time chemical weapons have been destroyed at sea. The remaining 700 metric tons of chemicals were successfully delivered to commercial facilities in Riihimaki, Finland; Ellesmere Port, UK; and Port Arthur, TX.

Syria's Declaration

Syria was required to declare all its stocks of chemical weapons and production facilities when it joined the CWC. International inspectors check each of the sites and quantities of agents against the declaration to identify discrepancies. Inspectors may also use information provided by other governments or open sources to evaluate a declaration. According to UN Special Coordinator for Syrian Chemical Weapons Sigrid Kaag, the Syrian declaration contained some omissions, and discrepancies were identified between Syria's declared quantities and what inspectors found. A [White House statement](#) marking the end of the *Cape Ray*'s destruction operations said that "serious questions remain with respect to the omissions and discrepancies in Syria's declaration to the OPCW and about continued allegations of use." Syria [revised its declaration](#) in April and again in September, when it [announced](#) a previously undeclared research and development laboratory that press reports said was used to produce the toxin ricin. As of October 1, the OPCW took over all inspection and destruction activities from the [OPCW-UN Joint Mission](#) and will further verify that Syria has declared all stocks and facilities.

Some [analysts](#) point to past examples of Iraq and Libya as cautionary tales on the difficulty of verifying the completeness of any declaration, and argue that one hundred percent certainty is unlikely. For example, Libya's Qaddafi regime hid part of its chemical weapons stockpile from international

inspectors, and the stash was found only years later. Furthermore, international inspectors in Syria must operate amid the country's ongoing civil war, which makes access to some sites dangerous at best.

CW Production Facilities

The Syrian government did not meet the March 15, 2014, deadline for destroying its 12 declared chemical weapons production facilities, and for many months insisted that the underground facilities not be completely destroyed as required (and as the United States argued), but instead made inaccessible. On July 24, 2014, the OPCW Executive Council decided that the seven hangars would be "razed to the ground," while the five tunnels would be "sealed permanently to make them inaccessible" ([OPCW press release](#)). Special Coordinator Kaag [said](#) that on October 1, the OPCW would "begin destroying the 12 remaining chemical weapons facilities," a task expected to be completed by March 2015.

Reports of Chlorine Use

Despite the removal and destruction of Syria's most deadly agents, reports of the use of chlorine gas as a chemical weapon began to surface in April 2014, and were investigated by international inspectors. The OPCW established a fact-finding mission to investigate these allegations. In a [report](#) released on September 10 based on interviews and other onsite evidence, investigators concluded they have "compelling confirmation" that a toxic chemical was used "systematically and repeatedly" as a weapon against villages in northern Syria, and that "chlorine, either pure or in mixture" was used in attacks on the villages. A CWC State Party is not required to declare chlorine or destroy it under the CWC because of its many civilian purposes. However, any use of chlorine or any other toxic chemical in warfare is illegal under the convention. On [September 21](#) Secretary of State Kerry [said](#) that the OPCW report "raises serious questions about the Syrian regime's compliance with its obligations under the Chemical Weapons Convention (CWC) and UN Security Council Resolution 2118 as well as its willingness to continue using chemical weapons to kill or injure the people of Syria."

The Syrian and Iraqi governments have said that ISIL has used chlorine and has overtaken an old Iraqi chemical weapons depot. [Analysts](#) say, however, that those stocks are most likely significantly degraded beyond usefulness as weapons and would be extremely dangerous to move. Nevertheless, this has raised concerns about ISIL's potential CW capabilities and its willingness to use them in the future.