



"FROM VISION TO VICTORY"

Implications of Russia's Alleged Use of Chemical Weapons in the Ukraine War

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Credible allegations of Russian forces using chemical weapons in its war with Ukraine continue to prompt calls for international accountability, underscoring the need to counter potential chemical weapon threats in future large-scale combat operations (LSCO). Reports from Ukraine's Ministry of Foreign Affairs indicate thousands of instances of Russia's alleged use of chemical weapons throughout the conflict, documenting more than 6,000 occurrences of chemical attacks from February 2023 to March 2025.¹ These munitions reportedly included agents such as o-Chlorobenzylidene Malononitrile (CS) gas,^a chloropicrin, and other irritants typically delivered via grenades or drones, leading to respiratory issues, irritation, choking, and other detrimental health effects, all of which would constitute violations of the Chemical Weapons Convention (CWC) if confirmed.^{2,3,4}

Open-source reports reveal an escalation in Russian troops' alleged employment of toxic chemicals against both military and civilian targets since the onset of the invasion in 2022. The Ukrainian Armed Forces noted 465 instances of chemical weapon deployment from the onset of hostilities in February 2022 through December 2023.⁵ Chemical weapon reports increased in 2024, indicating a total of 4,547 attacks for the year.⁶ For 2025, the reports of chemical munitions employment have increased dramatically, with 740 instances in January, 844 in February, 767 in March, and 888 in May.^{7,8,9,10} Reports detail the use of improvised explosive devices containing chemical agents, as well as drones dispersing capsules filled with harmful chemicals, inducing panic and forcing the abandonment of fortified positions.^{11,12} European intelligence sources publicly corroborate these reports, identifying frequent use of agents like chloropicrin and CS gas.¹³

a CS gas, also known as tear gas, is used by law enforcement and militaries to control crowds or as a training tool. While generally nonlethal, it can cause significant discomfort and temporary incapacitation.





Figure 1: Observed Incidents of Russian Chemical Weapons Employment From January 2024 to May 2025. (Source: T2COM G-2)

The use of chemical weapons in the ongoing conflict in Ukraine has posed significant threats to both human health and the environment. Immediate physical harm to civilians and military personnel stemming from the reported employment of CS gas and chloropicrin includes respiratory issues, skin irritation, and psychological distress. Additionally, chemical contamination of soil, water, and air disrupts ecosystems, impacting agriculture and access to clean resources. This ecological damage may take decades to address, further exacerbating the difficulties faced by the affected communities. For military personnel, physical repercussions stem from both the chemicals



and their impact on protective measures. Chemical agents have been used to dislodge Ukrainian troops from fortified locations, rendering them susceptible to conventional assaults. This strategy not only inflicts immediate damage but also undermines military operations and troop morale.^{14, 15}

Figure 2: On 9 December 2023, a Russian Telegram channel administrator actively engaged in the conflict, claimed that RG-Vo grenades are very effective at drawing Ukrainian soldiers out from cover when dropped from a quadcopter. "Russian Riot Control Agent Grenades in Ukraine." CBNW - Powered by NCT. 5 July 2024. <https://nct-cbnw.com/russian-riot-control-agent-grenades-in-ukraine/>. An RG-Vo grenade was found on the battlefield on 14 December 2023 (Image source: Wikimedia Commons, Creative Commons Attribution 4.0 International).

International condemnation of Russia's alleged use of chemical weapons in Ukraine has been widespread, with numerous calls for investigations and unified action to uphold the CWC.¹⁶

The UN, foreign governments, nongovernmental organizations (NGOs), and international bodies have denounced Russia's purported employment of chemical weapons in Ukraine.^{17, 18} While the Organization for the Prohibition of Chemical Weapons (OPCW) has detected toxic substances in the impacted regions, it has stated that the evidence is not sufficiently corroborated.¹⁹ The United States has accused Russia of violating the CWC by using riot control agents to force Ukrainian forces from their positions.^{20, 21, 22} The UN has called for independent inquiries into these allegations, stressing the importance of accountability and compliance with international law, and NGOs like the European Leadership Network have urged the activation of CWC mechanisms for investigation and response.²³ Despite the mounting evidence, Russia denies any use of chemical weapons.²⁴

In response to the allegations, the United States and its allies have implemented a robust series of sanctions aimed at crippling Russia's military capabilities and holding it accountable for CWC violations. These sanctions target more than 280 individuals and organizations associated with Russia's chemical and biological weapons programs and its military-industrial complex, including limitations on foreign military funding, export permits for defense materials, and sanctions against Russian governmental bodies and corporations involved in chemical weapons operations.^{25, 26, 27} Additionally, the United States has activated the Chemical and Biological Weapons Control and Warfare Elimination Act, reinstating penalties for Russia's use of substances such as chloropicrin, aiming to undermine Russia's military capacity and enforce compliance with international agreements.²⁸

Despite the evidence and international pressure, achieving accountability for Russia's alleged use of chemical weapons in Ukraine remains a significant challenge due to Russia's denial and obstruction. Russia persistently refutes these claims, dismissing them as Western propaganda and accusing Ukraine of staging the attacks.²⁹ The OPCW's assessment of "insufficiently substantiated" evidence weakens enforcement mechanisms, which rely on diplomatic pressure and sanctions rather than direct intervention.^{30, 31} Furthermore, Russia's permanent membership on the UN Security Council allows it to veto resolutions intended to hold it accountable, and reluctance from nations like China and those in the Global South to take decisive action against Russia due to their economic and strategic interests further undermines international efforts to impose repercussions.³²

IMPLICATIONS FOR LARGE-SCALE COMBAT OPERATIONS

Russia's alleged widespread use of chemical weapons in Ukraine emphasizes the continued importance of maintaining effective capabilities to counter chemical threats in future LSCO. Important elements of such readiness include a comprehensive and adaptable training framework, improvements in Soldier and unit equipping, and continued capture of lessons learned to share across the Joint Force.

- Focused training in detection, decontamination, and rapid response could enhance U.S. force chemical, biological, radiological, and nuclear (CBRN) defense capabilities.³³ Joint training exercises with allies can be beneficial, such as with the STEADFAST WOLF 2025 exercise, which included more than 100 CBRN experts from both NATO and U.S. defense sectors.³⁴ Additionally, emphasizing training at home station, combat training centers, and during warfighter exercises reflecting the current Operational Environment would improve preparedness.
- Continued development and acquisition of advanced technologies for chemical detection, neutralization, and Soldier protection would further help to prepare the force for adversaries' use of chemical weapons during future LSCO.³⁵
- Maximizing the use of the Joint Lessons Learned Information System supports the Department of War's effort to identify and apply battlefield trends to training scenarios.³⁶ Integrating insights from the Russia-Ukraine conflict into LSCO training ensures that forces are prepared for evolving battlefield dynamics.
- Active participation in relevant working groups, such as the U.S. Forces Command Countering Weapons of Mass Destruction Working Group and the Center for Army Lessons Learned Action Officers Working Group, promotes sharing of information among stakeholders. Lessons and best practices from recent analysis and information sharing can improve CBRN readiness and benefit training in both the institutional and operational Army.

 Chemical Attack on DSA MEM's #0048 (131500NOV24/T12) 	
	<p>MISSION</p> <p>Who: Dr Doom/TF SUST OCTs What: Chemical Attack & IDF on DSA When: 13 1500NOV24 (T12) Where: 15R VQ 80494 57667 Why: Support DSSB by targeting the DSA IOT meet CDR's training OBJ of reacting to CBRN attack</p>
	<p>TIMELINE</p> <p>1500: Dr Doom/Fire Marker/Lima OCT Link up to discuss scheme of maneuver 1530: OCT Staged to Observe and Adjudicate 1545: OCT Report when in Position 1555: 5 min Warning Call 1600: Execute MEMs</p>
	<p>TASKS TO BE TRAINED</p> <ul style="list-style-type: none"> • 013-COM-1007 React to Chemical Or Biological (CB) Hazard/Attack, • 031-COM-1004 Protect Yourself from Chemical and Biological (CB) Contamination Using Your Assigned Protective Mask • 031-COM-1009 Detect Liquid Chemical Agents Using M9 Detector Paper • 031-COM-1011 Decontaminate Individual Equipment • 031-COM-1003 Mark CBRN-Contaminated Areas.
	<p>MEM'S SUMMARY</p> <p>Key Tasks:</p> <ol style="list-style-type: none"> 1. RTU conducts defensive battle drills to react to the chemical threat and indirect fires. 2. Perform chemical detection operations to determine threat in the area. 3. Conduct decontamination and medical evacuation following the attack. <p>Concept of the Operation: Enemy forces execute a deliberate attack on the DSA with 5 to 8 rounds mixed Chemical IDF with the objective to degrade sustainment operations.</p> <p>End State: Assess the unit's ability to react to chemical threat, IDF, assess damages to equipment and personnel, and proper reporting procedures.</p>
<p>COORDINATING INSTRUCTIONS</p> <ol style="list-style-type: none"> 1. T11 Coordinate with TF Sustainment TAFF to verify details of the attack: time, location, requirements, and intent. 2. T12 OCT Linkup with fire marker and video one hour prior to execution IOT brief current situation, verify details, and intent of the attack, making any adjustments as required. 3. Resources Required: Fire Markers with air and ground burst and effects, purple smoke, CS Gas and Video, DR, DOOM (CBRN dispersal vehicle), IF AVAILABLE. 	

Figure 3: Chemical Attack Training Scenario (Source: U.S. Army Joint Readiness Training Center; used with permission)³⁷

ENDNOTES

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