RUSSIA EXPANDS LARGE-CALIBRE AMMUNITION PRODUCTION AND STOCKPILES FOR POTENTIAL FUTURE CONFLICTS

Russia's military-industrial complex has increased artillery ammunition production more than seventeenfold since 2021.

Russia is highly likely to rebuild part of its strategic artillery-ammunition stockpiles – in effect preparing for its next war – even as its aggression against Ukraine continues.

Russia's explosives industry has highly likely reduced its dependence on imported raw materials, though significant vulnerabilities remain in its supply chains.

Since the invasion of Ukraine in 2022, the Russian Federation's military-industrial complex has increased its artillery ammunition[2] production several times over. This has enabled Russia's armed forces to sustain combat operations in Ukraine despite international sanctions.

ARTILLERY AMMUNITION

In 2022–2023, Russia's military-industrial complex achieved initial production growth primarily by returning idle capacity to operation. Subsequent expansion has resulted mainly from large-scale investment in the ammunition production chain.

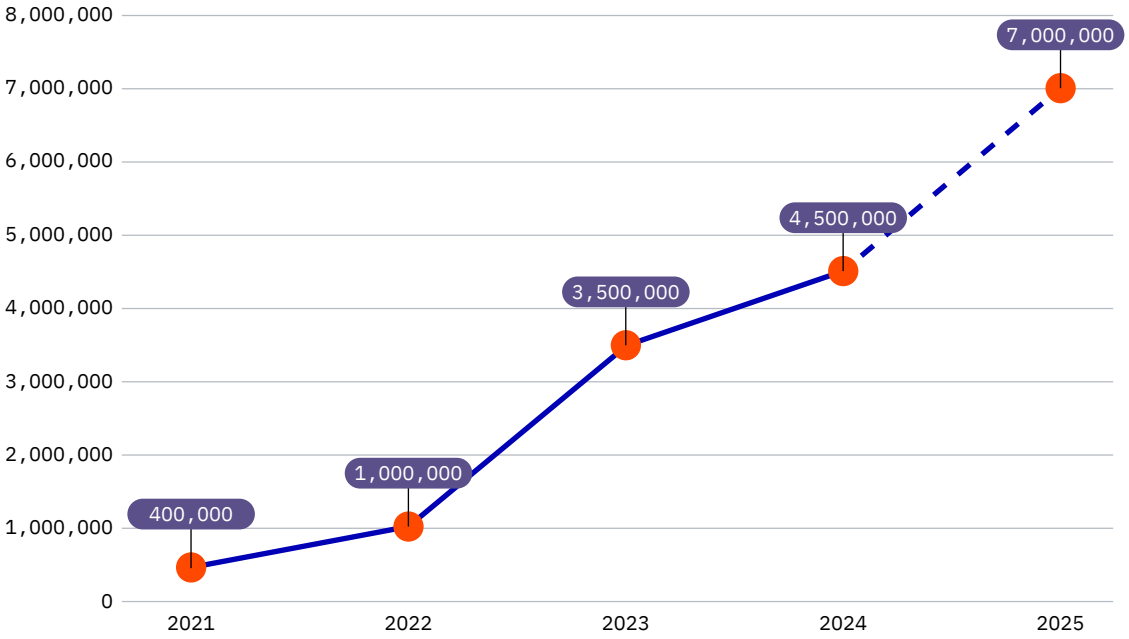
Russia's expenditure of artillery ammunition has fluctuated throughout the war. In the spring of 2022, during offensive operations, daily consumption reached up to 60,000 rounds. Since then, it has generally stabilised at 10,000-15,000 rounds per day. A key factor affecting expenditure is Russia's strategic ammunition stockpile, which was estimated at up to 20 million shells, rockets and mortar rounds before the 2022 invasion. As Russian forces expended most of these reserves in the first two years of the war, they were later compelled to ration ammunition use.

In 2025, Russia's total artillery ammunition output amounted to roughly 7 million shells, mortar rounds and rockets. The breakdown is as follows:

- Howitzer ammunition (122 mm, 152 mm, and 203 mm): 3.4 million
- Tank and infantry fighting vehicle ammunition (100 mm, 115 mm, and 125 mm): 0.8 million
- Multiple-launch rocket system ammunition (122 mm, 220 mm, and 300 mm): 0.5 million
- Mortar rounds (120 mm and 240 mm): 2.3 million

2 We apply the OSCE definition of artillery ammunition, which covers munitions for tanks, howitzers, mortars and multiple-launch rocket systems with a calibre of 100 mm or more.

Russia's artillery-ammunition production, 2021-2025



The procurement of this ammunition cost Russia's armed forces approximately 1 trillion roubles (approximately 10.6 billion euros) in 2025. However, the unit cost to Russia remains comparatively low. For example, an older-model 152 mm shell costs less than 100,000 roubles (about 1,050 euros) in state procurement, which is several times cheaper than similar 155 mm shells produced in Western countries. Such low prices are achieved at the expense of profitability across the state-owned enterprises that make up the supply chain, all of which rely on regular subsidies and other state support.

In addition to expanding domestic production, Russia imports artillery ammunition from Iran and North Korea. Since 2023, it has acquired an estimated 5–7 million rounds from these partners. According to Ukrainian assessments, North Korean ammunition accounted for roughly half of all Russian artillery expenditure on the Ukrainian front in the second half of 2025.

Given this production growth and substantial imports, Russia is highly likely to be able to replenish part of its strategic artillery ammunition reserves even while engaged in the ongoing war against Ukraine. For the Kremlin, maintaining such reserves is almost certainly a critical element of planning for potential future conflicts.

Russia's military-industrial complex will continue efforts to expand artillery ammunition production, whilst reducing dependence on external suppliers, including attempts to procure Western-made industrial machinery through various sanctions-evasion schemes involving intermediaries in third countries.

EXPLOSIVES

Explosives production in Russia is mainly conducted by Spetskhimiya, a subsidiary of the state-owned Rostec conglomerate, which comprises approximately a dozen manufacturing enterprises nationwide. Before the war in Ukraine, Russia's gunpowder industry depended almost entirely on imported cotton cellulose from Central Asia, which was processed domestically into nitrocellulose. Since 2023, Russia has been working to produce nitrocellulose from domestically sourced wood and flax cellulose. These attempts have highly likely been successful, as Spetskhimiya has become an important new customer for Russian cellulose producers. Although Russia's explosives industry is unlikely to eliminate its dependence on imported cotton cellulose entirely, even partial substitution with local raw materials marks a significant step forward and reduces the risks posed by potential sanctions on foreign suppliers.

A second key component of nitrocellulose is concentrated nitric acid or, alternatively, a mixture of nitric and sulphuric acids commonly referred to in Russian industry as "melange".

The production of these chemicals is one of the main bottlenecks in Russia's explosives sector, as melange is manufactured at only one site – the Berezniki chemical plant owned by Uralchem. Concentrated nitric acid is produced both at Berezniki and at EuroChem's facility in Novomoskovsk. Any major disruption to production at these plants – whether technical or economic – would highly likely cause serious interruptions across Russia's entire ammunition-manufacturing supply chain. Although small-scale nitric acid producers exist elsewhere in Russia, their output is several orders of magnitude lower, and they cannot play a meaningful role in supplying the explosives industry.

Adding an ironic twist to the situation, neither of the companies producing these critical inputs for Russia's war industry is subject to EU sanctions. Their second major line of business is the manufacture of nitrogen fertilisers. Imposing sanctions against such producers would, according to prevailing narratives, jeopardise global food security. At the same time, the European Union's own production of nitrogen fertilisers fell by nearly 14% between 2021 and 2024.