



VIHTAVUORI 100_v

NAMMO VIHTAVUORI

**100 YEARS OF SECURITY
OF SUPPLY FOR GUNPOWDER**





THE NEW STATE NEEDS **GUNPOWDER**

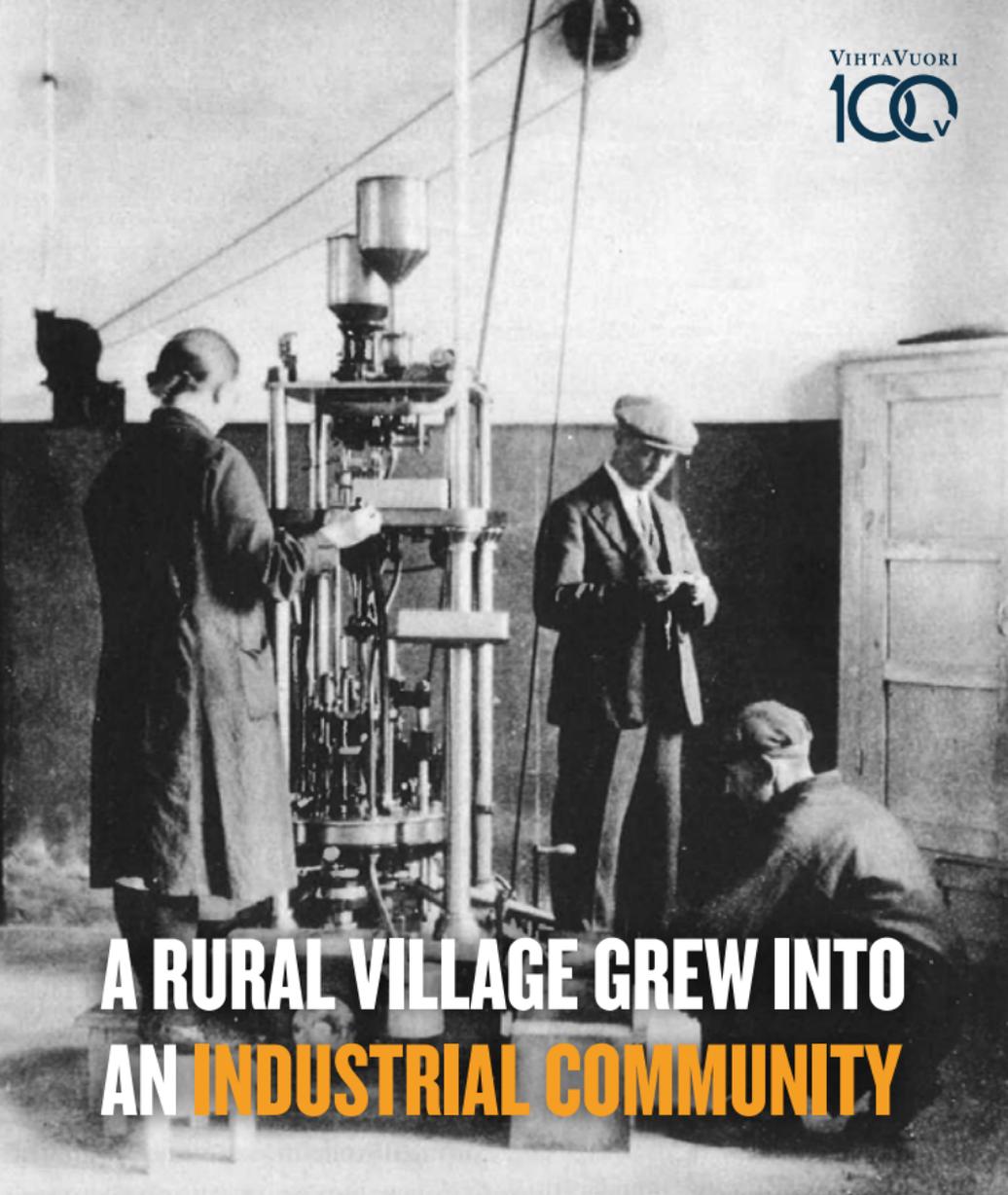
The newly independent Finland found itself in a situation where security of supply necessitated establishing a state-owned gunpowder factory. In 1922, the Finnish government decided to establish a gunpowder factory to meet the needs of the army. Alhbacka in Laukaa was chosen as the site, where the construction of the gunpowder factory began in 1923. The factory was originally named after a local farm; the name Vihtavuori was introduced in 1925.

A decisive role during the wars

The first batches of gunpowder were made in March 1926. Shortly after, nitrocellulose and gunpowder plants on the site were complemented with a powder charging station, a charring plant to produce activated charcoal, primer and dynamite mills, and shotgun shell production. During World War II, the factory played a major role in security of supply and ammunition supply, and the nitrocellulose, primer, and powder production departments were expanded to meet demand.

1922

Government's gunpowder
factory is established.



A RURAL VILLAGE GREW INTO AN INDUSTRIAL COMMUNITY

The village of Vihtavuori, located in the municipality of Laukaa near Jyväskylä, was a small and peaceful rural village until the powder factory was opened. The factory turned the village into a lively industrial community. The area was deemed a suitable location for the factory because of its location, proximity to railways, security of energy supply, and the purity of water of the nearby Siikajärvi lake.

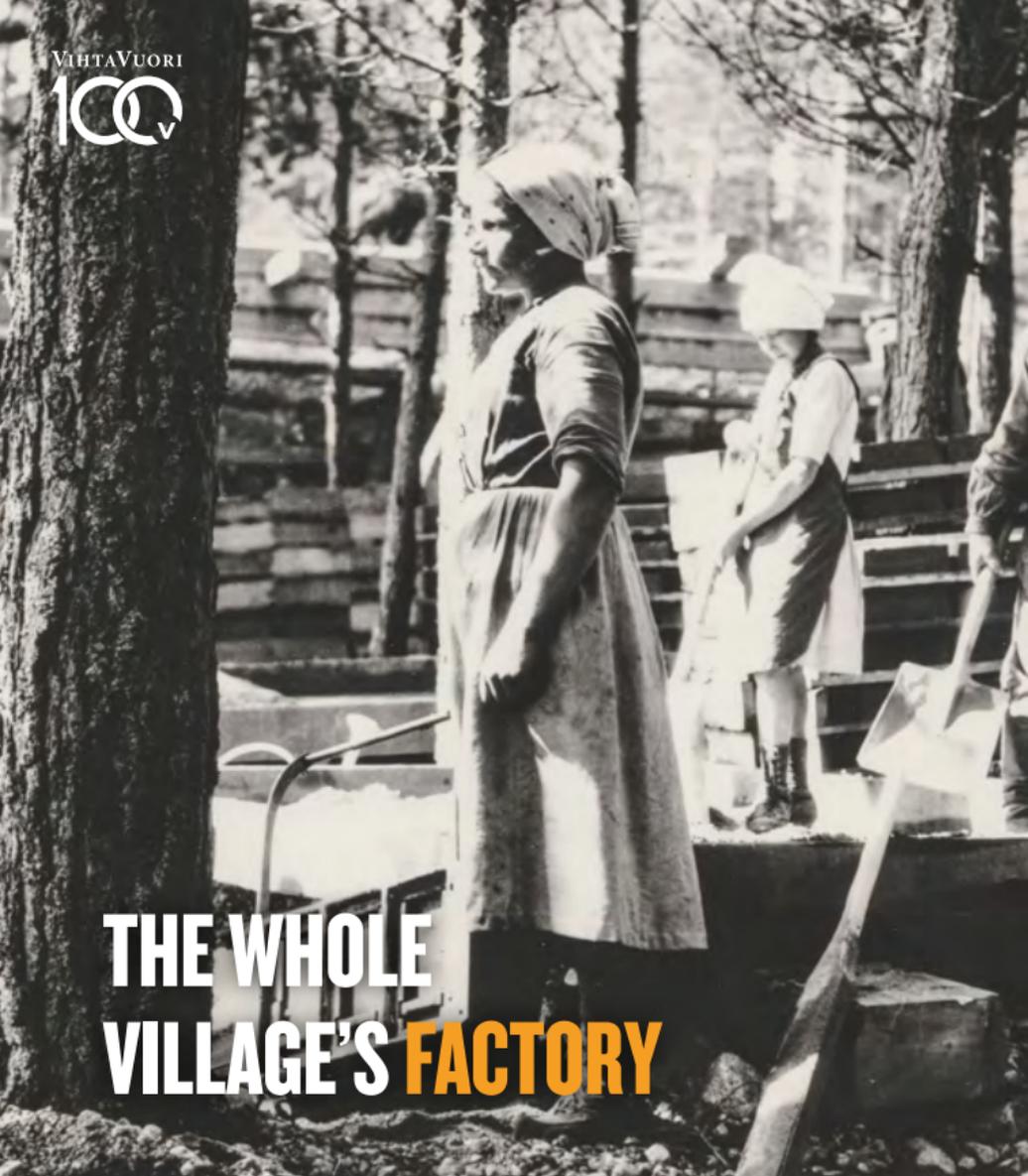
Employees have had access to many kinds of services in the factory area over the years, and the factory has supported several associations, like the local sports club.

1946

Vihtavuori Oy,
subsidiary of Rikkihappo- ja
Superfosfaattitehtaat Oy.

1949

Vihtavuori Oy
is incorporated to
Rikkihappo- ja
Superfosfaattitehtaat Oy.



THE WHOLE VILLAGE'S **FACTORY**

The construction work of the gunpowder plant and the factory itself employed a large number of people from the region and surrounding areas for decades. At best, about 450 people were involved in the construction of the factory. Many workers from outside the village lived in barracks built especially for them, and some were even housed in barns.

At its best, almost every villager was somehow dependent on the factory and its success. In the record year of production in 1942, the plant employed approximately 900 employees.

Today, the factory has an area of 235 hectares, and it has over 300 separate buildings.

1972

Company changes name to Kemira Oy. The factory operates under the name of Kemira Oy Vihtavuori plants.

1990

Vihtavuori Oy, subsidiary of Kemira Oy.



ENTERING INTERNATIONAL MARKETS

After the end of World War II, the state-owned gunpowder plant did not receive any more orders from the Finnish Defense Forces, so it started developing new products for the civilian market. The factory was incorporated into a large chemical manufacturer (now Kemira Oyj). The factory produced ether, dynamite, primers, shotgun shells, and activated charcoal. Production expanded, new premises were built, and more products were manufactured for export. Especially since the late 1960s, sales grew rapidly. In 1990, Kemira's propellant and military production was organized into a separate company, Vihtavuori Oy.

Quality known world-wide

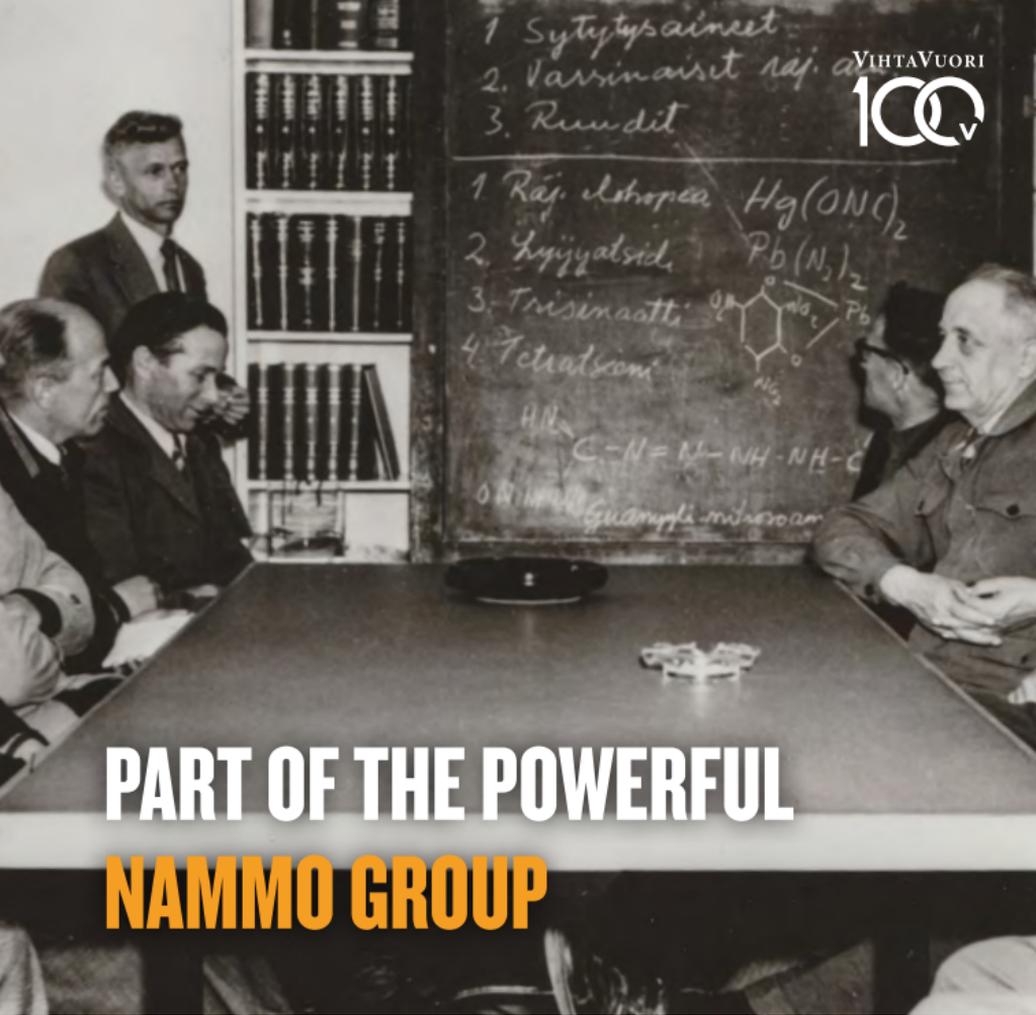
Over the years, there have been changes in the ownership of Vihtavuori due to mergers and acquisitions. In January 2014, Nammo acquired the factory from French-owned Eurenco. Today, over 80% of Vihtavuori products are exported. The products' prime quality is recognized internationally both in the defense industry and among sports shooters and hunters.

1997

Vihtavuori shares are transferred to Suomen Puolustusväline Oy which changes its name to Patria Industries Oy.

1998

The new name is Patria Lapua Oy. It becomes a part of the Nexplo Group and is called Nexplo Vihtavuori Oy.



PART OF THE POWERFUL NAMMO GROUP

The Vihtavuori factory is a part of the international Nammo Group, a defense company whose main markets are North America, the Nordic countries, and Europe. The Group operates in 12 countries with 28 different production facilities and employs approximately 2,700 people. Nammo is jointly owned by the Norwegian State and Patria Oyj; both hold a 50% stake in the company.

Large investments

In recent years, Nammo has invested over EUR 30 million in the Vihtavuori factory. Processes have been streamlined, and safety measures have been improved. The factory has been able to boost its product development and increase production volumes.

Nammo Vihtavuori's annual revenue is approximately EUR 25 million.

2004

Vihtavuori factory becomes a part of Euroco Group and changes name to Euroco Vihtavuori Oy.

2014

Nammo buys the factory; its name changes to the currently used Nammo Vihtavuori Oy.

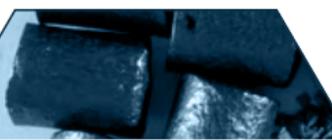


THE BEST GUNPOWDER IN THE WORLD

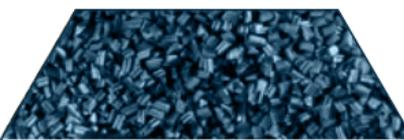
The Vihtavuori V-logo and black & blue gunpowder bottles are a sign of quality among sports shooters, hunters, and other shooting enthusiasts in all over the world. In addition to recreational shooters and competitive athletes, Vihtavuori powder is used by western defense organizations and ammunition manufacturers worldwide. Nammo Vihtavuori's product range is the widest in the industry, and its powder is suitable for many products from small-bore rifle calibers to artillery rounds.

A successful export product

Today, more than 80% of the factory's production is exported. High-quality products are in demand. In addition to the defense equipment industry, especially US shooting enthusiasts are buying more and more Vihtavuori products. Significant investments are underway at the factory to increase its manufacturing capacity.



155 mm howitzer full charge
propellant grain size approx.
17 x 20 mm



Shot shell powder
approx. n. 1.2 x 1.2 mm

A BRIEF GUIDE TO GUNPOWDER

What is gunpowder?

There are two basic types of single base powder: black gunpowder and smokeless gunpowder, which is used in all modern weapons. All Vihtavuori products are smokeless powders. Smokeless gunpowder is a chemical mixture that has been developed to burn at the desired burning rate and thus act as a propellant in firearms. Smokeless powder comes in several shapes, such as flakes, sticks, or flattened balls.

What does reloading mean?

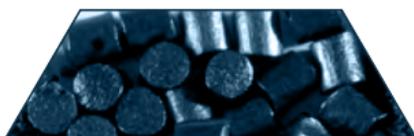
Reloading, i.e., creating your own cartridge from components, is a hobby related to shooting and hunting. Reloaders handload their ammunition to create the best fit for their own firearm and shooting discipline.

What is reloading data?

Reloading requires great care and meticulousness and internalizing the safety issues of related materials is a key part of reloading. The reloading data available on Vihtavuori's website and in the Vihtavuori Reload app provides reloaders the safe quantities and types of gunpowder for different bullets and calibers.

Test shooting

Vihtavuori reloading data is produced at the factory. There are several stages in the process, one of which is test shooting the loads. Unlike many competitors, Vihtavuori does not base its data merely on calculation formulas. At Vihtavuori, every single published reloading data line is always based on test shooting at the factory, to guarantee the safety and functionality of the load. Of course, test shooting is also a part of product quality assurance. Every year, hundreds of different reloading recipes are tested at Vihtavuori.



NAVY gun propellant
approx. 6 x 6 mm



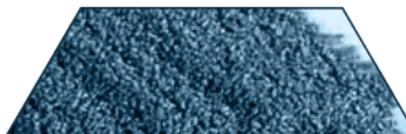
RELOADERS RELY ON VIHTAVUORI'S CONSISTENCY

"For me, the main advantage of Vihtavuori powder is its consistency and precision. As a shooter, I compete in freezing conditions as well as summer heat, and I need to know that the ammo is going to perform at the same speed and precision, every shot. Achieving those temperature ranges and still maintaining the same velocity is worth its weight in gold. That's why I shoot Vihtavuori."

Francis Colon

PRS professional shooter

For cartridge reloaders, the Vihtavuori quality is reflected in the uniformity of the gunpowder. The powder behaves in the same way from one batch to another, so there is no need to adjust the powder charge. Consistency is maintained with strict quality control in the manufacturing process. The top quality is based on decades of cooperation with the Finnish State and Defense Forces, which has enabled the development of products that exceed the industry standards.



Handgun powder
approx. 0.6 x 0.6 mm



Anti tank gun propellant
approx. 8 x 20 mm

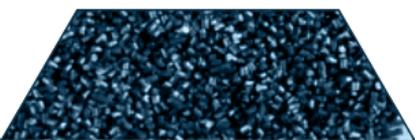
A WORKPLACE FOR DIFFERENT GENERATIONS

"I had a summer job at the Vihtavuori gunpowder factory for the first time in 1989, and I have been working full time at the factory since 1998. I started in production, and now I've been a foreman for 10 years. Since the 1970s, I don't think there has been a day without one of my relatives working here. My father had a long career here, and my mother worked at the factory when I was a child. My uncle and other relatives have also worked at Vihtavuori.

What Vihtavuori is like as an employer can be seen, for example, in the length of my career. We still have people who worked at the factory when I started as a summer worker at the end of the 1980s. We are a close community where everyone knows each other and their background; this makes the atmosphere here pleasant."

Jarkko Valkonen
foreman

Personnel: 120
16 second generation employees
5 third generation employees
The longest career 42 years

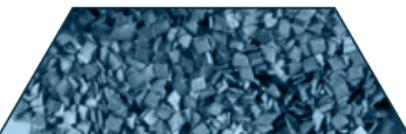


Rifle powder
approx. 1.0 x 1.0 mm



RESPONSIBLE INVESTMENTS IN THE ENVIRONMENT

Several environmental investments have been made in Vihtavuori over the years, such as improving waste heat recovery and energy efficiency and reducing water use. Two of the factory's cooling water circuits were turned into closed circuits in 2016–2019. Waste heat is recovered from these cooling circuits with heat pumps, and this energy covers 20–30% of the energy needs of the entire factory. Thanks to the change, the plant now uses 50% less water than before.



Shot shell powder
approx. 1.5 x 1.5 mm



Modular charge propellant
approx. 4 x 20 mm

VIHTAVUORI 100_v



NAMMO VIHTAVUORI OY

Ruutitehtaantie 80
FI-41330 Vihtavuori
Finland

Tel. +358 10 5233 140

vihtavuori.com
nammo.com