

SONOVIA – Update Report

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Stock Exchange
TASESymbol
SONOSector
TECHNOLOGYSub-sector
ELECTRONICS & OPTICSStock price target
NIS 30.7Closing price
NIS 11.9Market cap
NIS 177.5 MnNo. of shares
15.0 MnAverage Daily
Trading Volume
120 stocksStock Performance
(Since Jan. 2021)
-35%

First operation in leading manufacturing company; outstanding lab results from trial with leading American textile manufacturer; successful SARS-Cov-2 trial in Italy; exploring governmental regulation compliancy investigation in the US; price target remains unchanged.

Sonovia develops ultrasonic technology that performs value-added treatments for textiles, endowing them with unique properties such as anti-pathogenicity and water repellency.

Q3 2021 highlights:

- Bruckner's industrial R&D line ran the first operation of the industrial machine 2.0.
- Sonovia reported outstanding lab results indicating the preservation of antibacterial activity.
- Sonovia completed a successful trial neutralizing the SARS-Cov-2 Delta variant in a lab in Italy, eliminating 99.95% of the virus after 120 minutes.
- The US Environmental Protection Agency is conducting an investigation of the company's activity in the United States.

The company's technology is expected to integrate easily with existing production lines and has the potential to disrupt the textile application treatment industry - one of the highest polluting industries in the world. **We estimate that the market for functional textile finishing agents and textile dyeing is estimated at a combined value of approx. USD 15.8 billion.**

The company is nearing a critical stage of starting industrial pilots, the final stage before customer sales. **In our opinion, the company has real and significant potential to disrupt the textile wet-finishing industry through its technological platform. Sonovia's main challenge, as with other technology companies, will be the stage of increasing sales volumes.**

On the next page, we further elaborate on the main events in 2021.

Year	Revenues (000 USD)	EBITDA (000 USD)
2021E	12,000	365
2022E	16,607	665
2023E	28,641	5,083



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Key events in the passing months and Q3 2021:

- On November 16, the company reported that it completed the assembly of its industrial machine 2.0 during the second half of 2021 and ran a successful operation on November 15 in Bruckner's Industrial R&D line in Germany.
 - The operation occurred over several days, during which an ultrasonic curing of approx. 10,000 meters of fabrics at industrial rates was performed and various parameters were measured and validated that indicate the commercialization capability of the technology developed by the company.
 - The machine is the first industrial ultrasonic textile curing machine of its kind in the world, designed in a way that allows biocidal properties to be imparted to fabrics without the need for contaminating chemicals.
 - This successful initial operation of the machine is a significant milestone on the way to the commercialization of the technology developed by Sonovia. The machine installed in Bruckner is a completely industrial curing machine with a configuration similar to what will be sold to the customer. There was significant technological progress throughout this operation.
 - Sonovia expects to install a second machine at Delta's Innovation Center in Israel.
- On November 16, the company reported that it had received test results from an outside lab indicating high antibacterial activity after 50 industrial washes and 50 home washes of four different types of fabrics treated by the company for a leading American textile manufacturer in the medical market. Prior to this, the technology to provide resistance to industrial washes did not exist in the world, making this a significant breakthrough.
 - The results of the microbiological lab indicate a neutralization of over 99.9% of the tested bacteria, the highest possible result according to the AATCC100 standard in this lab and a neutralization of over 99.999% of the bacteria (Log-7.5) according to ISO20743, a result that is at the upper limit of this standard.
- On September 10, Sonovia announced the results of a lab test performed by the company at Vismaderi Labs in Italy, which tested the effective neutralization of the Delta variant of SARS-Cov-2. After 30 minutes, 97.37% of the virus was neutralized, 99.31% after 60 minutes, and 99.95% after 120 minutes.
 - Sonovia's product is resistant to every variant of SARS-Cov-2, and will most likely be resistant to the Omicron variant.
- On November 14, the company announced that the US Environmental Protection Agency (EPA) is conducting an investigation of its activity in the country.
 - Sonovia has been working with the US Food and Drug Association (FDA) for several months to regulate its masks under the classification of a "medical product."

To read more about the company and the market in which it operates, see our [initiation report](#).

Investment Thesis

Sonovia is an Israeli high-tech company that focuses on the research and development of sound-based technology for performing value-added textile treatments in an environmentally friendly manner, which gives fabrics unique properties. Sonovia's anti-pathogenic application, which provides over 99% active protection against viruses (including covid-19), bacteria, and fungi, is already generating revenues (over \$9.5 million in 2020) and is tested by leading brands and manufacturers. The applicative water-repellent treatment developed by the company (for which the company filed a provisional patent application) was rated by an independent international laboratory, a rating of 100 under the international standard (AATCC-22), the highest rating under that standard. Additional applications - flame retardancy, dyeing, "DryFit", and more – are either in R&D, or in the company's R&D pipeline.

Sonovia operates within the textile industry, which is constantly growing yet is currently at a tipping point: Increased consumer awareness of and preference for textiles produced with a low ecological footprint, coupled with increasingly stringent regulation and enforcement of chemical use, are expected to drive a significant industrial change as manufacturers are already forced to seek innovative, 'green' solutions.

On November 15, 2021, the company ran its successful initial operation of its industrial machine 2.0 in Bruckner's industrial R&D line in Germany. This successful initial operation of the machine is evidence of the company's future operations and is a significant milestone on the way to the commercialization of their technology.

Sonovia's technology and its advantages over conventional methods and its ongoing activity with leading brands and OEMs across several key markets have the potential to disrupt the textile finishing and dyeing industries significantly and increase demand for new functional products. Realization of that potential depends greatly on successful entry into various verticals, achieving a global installation base, and creating brand awareness.

Sonovia's technology utilizes ultrasonic energy to physically infuse textiles with the required functional compounds, based on the required application, via a sustainable process. The Sono-finishing process eliminates the need for polymeric chemical binders and other harmful chemicals and dramatically reduces

water and chemistry consumption in the process.¹ As an example of the effectiveness of the technology, here are the results of the company's anti-pathogenic application:

- High performance: Sonovia's anti-pathogenic application displays 99.9% elimination of viruses (including SARS-COV-2) and bacteria.
- High durability: Fabrics treated with Sonovia's technology exhibit high durability to laundry as well as to high temperatures;²
- Versatility: Sonovia's technology applies to all types of textiles;
- Cost-effectiveness and sustainability: Sonovia's technology may reduce up to 95% of the water consumption compared with conventional textile wet-finishing and eliminate chemical binders' need.

The Sono-finishing process vis-à-vis traditional methods – a comparative overview

	Padding	Extrusion	Sono-finishing
Applicability to all textile compositions	Requires different formulas and chemical binders	Only synthetic	Yes
Durability to industrial laundry	Moderate to poor	Very high	Very high ³
Durability to home laundry	Moderate	High	Moderate (expected to improve with R&D) ⁴
Durability to high-heat	Low	High	High
Cost-effectiveness	High	Low	High
Sustainability	Moderate to poor	Poor	High
Scalability	High	Low	High

Source: Sonovia and F&S analysis

Sonovia operates two distinct departments:

- (1) The personal safety department, which currently operates a B2C model: Direct sales of branded personal protective products – such as the SonoMask – to end-clients in the private sector;

In 2020, SonoMask sales exceeded \$9.5 million. In H1/2021, revenues amounted to \$5.7 million.

- (2) The Sono-applications department, which is due to operate under a B2B model:

¹ Chemical and water consumption varies per application.

² Additional durability assessments to different washing protocols need to be executed.

³ Pending additional assessments

⁴ Pending additional assessments

- Capital sales of machines; with Brückner Trockentechnik GmbH & Co. as the machinery partner, global market penetration is expected to be rapid and aggressive.
- Repeating sales of required chemical formulations are expected to become the company's core revenue stream (the current install base of the Brückner alone is over 5,000 machines).
- Potential revenues from “Sonovia-inside” trademark tags

The company's vision is to develop the world's most green and advanced technology for applicative textile treatments.

Sonovia operates within the functional textile finishing agents market was valued at \$5.2 billion in 2020 and is projected to exceed \$6.9 billion by 2027, at a CAGR of 3.9%. Sonovia estimates the TAM for its anti-pathogenic application for its four verticals – medical textiles, hospitality textiles, sportswear, and automotive upholstery – at an aggregated value of \$1.56 billion.

Sonovia also aims to enter the textile dyeing market, which was valued at \$9.4 billion in 2018 and is projected to reach \$15.5 billion by 2026, growing at a CAGR of 6.3% from 2019 to 2026. While Sonovia’s entry into the textiles dyeing market is pending upon successful development and proof-of-concept, which are expected in the near future, its potential to disrupt the textile dyes market is equal – if not greater – than its potential to disrupt the textile finishing market.

In addition, the company operates under a European grant designed to support the fight against Hospital Acquired Infections (HAIs). Hospital Acquired Infections (HAIs) represent a persistent challenge in the healthcare sector, exacerbated by covid-19. HAIs affect hundreds of millions of patients worldwide each year, leading to significant morbidity and mortality as well as financial losses for health systems:

- 136,000 annual deaths in the US and Europe are attributed to HAIs.
- The direct financial burden of HAIs is estimated to account for €7 billion in Europe and \$6.5 billion in the US. Yet, research suggests that the total (direct + indirect) economic burden is significantly higher – up to \$45 billion per annum.

Textiles with anti-pathogenic properties show great promise in reducing the prevalence of HAIs and their associated economic burden. Evidence indicates that textiles treated with anti-pathogenic reduce HAIs rate

dramatically and could result in cost reduction of up to €8,038 million. The severe impact of covid-19 on hospitals has elevated awareness of the speed and breadth with which HAIs spread in healthcare institutions and is expected to act as a catalyst on institutional demand for anti-pathogenic textiles, especially as novel solutions are proven effective in eliminating SARS-CoV-2 and other pathogens.

Covid-19 is also a catalyst for the rapidly growing interest in textiles with anti-pathogenic properties by additional verticals, such as the hospitality market, the sportswear market, and the automotive upholstery market. Sonovia holds a competitive advantage in the latter: Fabrics treated by Sonovia's durable anti-pathogenic application show elite anti-microbial and anti-viral performance while eliminating the use of hazardous chemicals.

We believe Sonovia is on a path for growth and success on a global scale:

- Sonovia develops a novel technological platform, envisioned to become the future incumbent technology for performing textile wet-finishing applications, in a versatile, cost-competitive and sustainable process.
- Sonovia's technology has been endorsed by the "*Fashion for Good*" accelerator and by the European Commission's SME program for its potential in fighting Hospital-acquired infections and dramatically reducing the ecological footprint of the fashion industry.
- Sonovia partnered with a globally-renowned designer and producer of finishing systems for textiles with a presence in 90 countries and an installed base of over 5,000 machines, and is already conducting pilot tests with leading brands in the fashion, sportswear, and automotive verticals, and has a clear strategy and R&D pipeline for the next 24 months.
 - On November 15, 2021, Sonovia successfully ran an initial operation in Bruckner's Industrial R&D line in Germany.

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