

PAMA Swab Supply Chain For COVID Testing

PAMA MANUFACTURING

PAMA is a Quebec-based manufacturing company, founded in 2012, that specializes in the sterilization and manufacturing of disposable, sterile and non-sterile single-use medical equipment, intended for the healthcare system.

PAMA's sterilization system reduces sterilization time and immediate release of products, compared to an 8-day method for usual procedures. It is the only Canadian company that can manufacture and sterilize 3D Printed PPE under one roof. In addition, this procedure reduces the exposure time of Ethylene Oxide (ETO) and reduces the amount used by 50%, for a more environmentally friendly process.

An environmentally conscious company, PAMA develops and applies solutions each year to favorably reduce its ecological footprint, including the implementation of a building with energy recovery and constructed with sustainable materials, a 99.95% efficient ethylene oxide absorption system, rather than a catalytic burner that uses hydrocarbon combustion and 100% recyclable medical trays.

PAMA is part of the non-profit Ethylene Oxide Sterilization Association (EOSA), whose members share a common interest in promoting the use of ethylene oxide. PAMA is also a member of the Association of Suppliers of the Quebec Health Industry (AFISQ), whose members work with the Quebec healthcare network and can manufacture or distribute products and services such as medical equipment, health care products, medical informatics, household cleaning products and office equipment.

DOMESTIC 3DP SUPPLY CHAIN

PAMA Manufacturing (PAMA) has partnered with HP Canada and its consortium of 11 small businesses across Canada who specialize in 3D printing and digital manufacturing to support

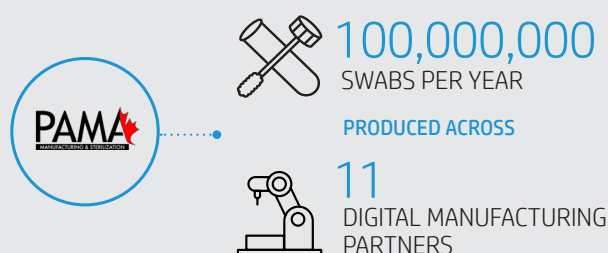
Canada's personal protective equipment (PPE) and national COVID-19 testing requirements.

PAMA aims to support our nation's COVID-19 testing requirements by producing up to 100 million nasopharyngeal swabs per year utilizing HP's 3D Printing (3DP) technology.

The 3DP swabs are currently undergoing clinical studies at Hôpital Sacré-Coeur with Laboratoire de Santé Publique du Québec and with Health Canada's sanctioned clinical trials. In the meantime, HP and its partners, including PAMA, have been working with other countries outside of Canada, such as US, Belgium, France, Norway and Spain and well known organizations such as the US Army, to deliver millions of the 3DP nasopharyngeal swabs. These swabs have gone through required regulatory approvals and have received European Union (EU) approval through the CE mark certification.

Today, the PAMA supply chain is ready to go once Canada's clinical studies are successfully completed and will be able to produce up to 100 million swabs per year across the full network of digital manufacturing partners, enabling fulfillment of demand domestically and for export internationally. Swabs can come individually packaged or as part of a kit with transport media (PBS or VTM). PAMA will lead its own distinct swab supply chain and be responsible for final mile efforts: sterilization, packing, quality control and delivery.

PAMA and its partners, based on HP 3D printing technology, enable Made-in-Canada solutions that increase speed to market, advance Canadian work in new growth sectors, allow for leaner supply chains, and reduce the carbon footprint required to deliver PPE and protect Canadians. The digital manufacturing consortium of 11 small businesses, who are advancing innovation and investing in highly skilled labour, are also experiencing growth during a time of financial hardship for many. In times like these, seeing Canadian small businesses grow and scale is something to celebrate.



SWAB SUPPLY CHAIN PROCESS

