



Main process for the production of medical face masks



1

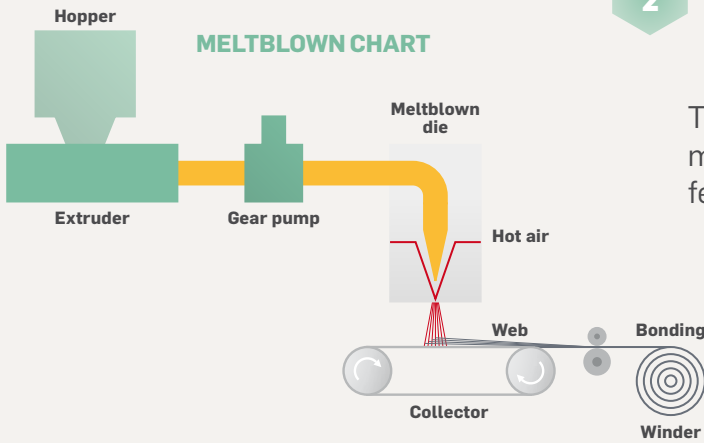
Raw materials used are polypropylene polymers

Those polymers require a

- Special grade
- High Melt Flow Index (MFI)

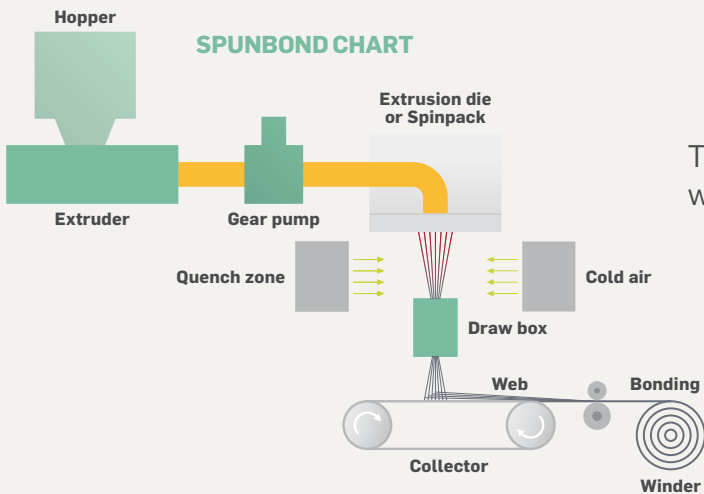
2

MELTBLOWN CHART



The middle layer in a medical mask is made with a **nonwoven meltblown process** featuring electrostatic charging.

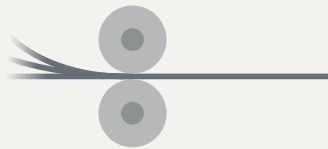
SPUNBOND CHART



The two outer layers are made with the **nonwoven spunbond process**.

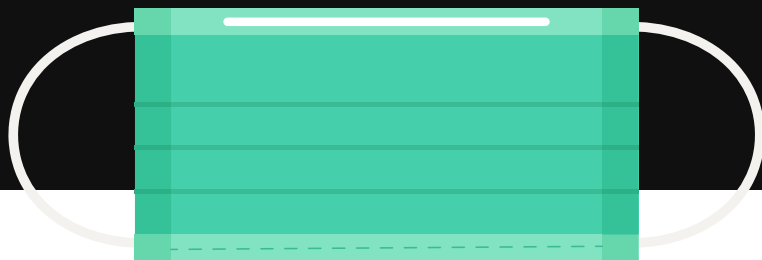
Important to know:
These media are **subject to the requirement of EN 14683 and EN149 standards**.

3



The **3 nonwovens layers** are then **calendered** and together form the filter media.

4



The filter media is pleated and seamed in a converting line that delivers **the medical face mask**.



Protective masks such as FFP2 or FFP3 are made in a similar way, but composed of 3 to 5 layers of nonwovens (made through a range of processes). Production include thermo forming as the final products are 3 dimensional for optimal fit. Find more information [here](#).



Current situation in the production of medical face masks



BOTTLENECKS

Meltblown capacity

Certification & long lead time

Converting capacity



POSSIBLE SOLUTIONS

Fast **increase of nonwoven meltblown production** capacity is needed



In parallel, the industry is looking into **alternative materials and manufacturing processes** for producing masks

Certification labs are working around the clock to face the overload of demands regarding EN 14683 and EN 149 standard certifications

There is limited capacity in Europe while capacity in other regions is much larger but may in cases of pandemics become captive.

Solution, promoted by the European Commission, is to install new capacity in EU. This is being monitored by EDANA, ESF and EURATEX.



A short-term alternative to the shortage of medical masks is to allow the (validated) **reprocessing and re-use** (of single-use devices) and/or **the use of reusable products**, for which some authorities have provided guidelines/derogations, to overcome non compliance with EN standards