

OUR NEXT 400-YEAR PROBLEM

Nowadays, due to the Covid19 pandemic, masks have become one more element of our life. We don't see the moment when they disappear from our outfits but will we get rid of them when the virus will be controlled? The answer to this question is NO because we are not really aware of all the effects and consequences they can cause in Nature in the distant future.

The pandemic has generated the presence of a large amount of masks incorrectly disposed of in Nature, causing a great problem of pollution. This problem is a global level one since the pandemic has affected the entire population of the planet.

This problem is generated by the need of changing the masks every 4/6 hours and some people's antisocial behavior.

Let's take our high school to show the possible situation we can face:



There are 600 students and teachers living in it. As we need to wear at least two masks a day, we would generate an impact of 1200 masks a day. This high number implies a higher percentage of them in unsuitable places, being dangerous due to their plastic components such as polypropylene, polyethylene, polyethylene terephthalate, all of them characterised by their high resistance to chemical solvents, which slows down their disintegration, taking between 300-400 years to fulfill it.

This issue negatively affects the environmental sphere due to the fact that 145,000 tonnes of discarded masks are produced daily in the planet, which end up in landfills provoking water pollution from leachate and the emission of both toxic and greenhouse gases, affecting the atmosphere and people's health, if they are incinerated.

Cristina Crespo, doctor and researcher in the Materials and Components team at the Aragon Institute of Technology ([ITAINNOVA - Instituto Tecnológico de Aragón](#)), is working on the Wasamask Project, which aims to use the recycling of masks to obtain their components and reuse them to produce a mixture capable of reducing the levels of contamination they cause.



This eco-friendly solution requires a process which should begin with the collection of the masks, but a safety protocol hasn't been established yet for this to be carried out at the population level. Health institutions recommend depositing the masks in a container after placing them in a plastic bag in order to avoid contamination. What should this new container look like? Where should they be located? Logically, this container would be placed and designed with safety measures to avoid contagion when depositing the masks.

Once collected, what is the process for reusing the components? The method they are using involves removing the rubber bands and the metal part of the nose, which facilitates recycling, with subsequent separation of the layers into materials.



Recycling has only one problem due to the possible presence of a viral load in the masks, which handling and management is prior to recycling. Even if disinfection must be carried out after collecting the masks, this process does not cause any loss of material properties.

As the sustainable development states, we must respect the ability of natural systems to provide the resources and ecosystem services on which our economy and society depend.

That is why it is compulsory for human beings to try to solve the problems our actions provoke in Nature and the reason to enact the Sustainable Development Goals of the 2030 Agenda. Some of the goals relating to the recycling of masks are those related to economic growth and business competitiveness, which means progress with new jobs and improved living standards since these days, the economic and financial disruptions resulting from the pandemic are jeopardising the slight economic growth and many other factors; social inclusion, as economic inequalities have been revealed and the crisis has been triggered by fragile social safety nets; and the protection of the environment, with the need to eradicate threats to species and their ecosystems.

In short, the great environmental impact caused by the high level of waste generated by masks during this critical period of COVID-19 could be solved by carrying out the research advised by the Wasamask project, on which Dr. Cristina Crespo is working. This problem is global and affects everyone in the world, so we must commit ourselves and be able to face it with responsibility. In addition, the crisis we are facing gives us the opportunity to shift towards a sustainable economy, which means benefits for both people and the planet.

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