

UNCOVERING THE TRUTH BEHIND BIODEGRADABLE NITRILE GLOVES

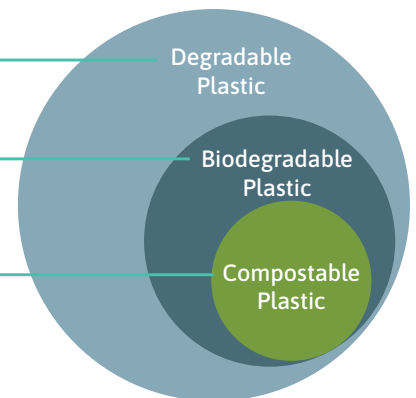
Many disposable glove manufacturers claim to sell biodegradable nitrile gloves, but those claims are often false. The first step to understanding why is to clarify the difference between degradation, biodegradation and composting.

UNDERSTANDING THE DIFFERENCE BETWEEN DEGRADATION, BIODEGRADATION AND COMPOSTING

Degradation is the breakdown of a material over time.

Biodegradation is degradation resulting in a significant change in the chemical structure of a material caused by biological activity.

Composting is biodegradation within a defined timeframe and specific disposal systems. It is measured by the metabolism of polymer carbon by microorganisms using international specification standards (ASTM D6400, ASTM D6868 and EN 13432).



Source : ©Examrace Biodegradable vs Nonbiodegradable Bags

KEY TAKEAWAY

Degradation is not the same as biodegradation. Materials that break down over time do not necessarily biodegrade. Furthermore, biodegradation is a natural process, whereas composting is a human-driven process.

THE FACTS ABOUT NITRILE GLOVE BIODEGRADABILITY CLAIMS

Nitrile is a fossil-based polymer and is therefore not biodegradable.

Many manufacturers claim that additives to their gloves cause accelerated biodegradation - but there is no scientific evidence to support that an additive can change the molecular structure of nitrile. In reality, accelerated degradation occurs, which can result in the creation of microplastics that are harmful to humans and the environment. **Nitrile degrades, it does NOT biodegrade.**

While the sources and data used to support nitrile disposable glove biodegradability claims may look legitimate, they are often misleading.



There is no internationally recognized certification for biodegradable gloves. ASTM D5511 and D5526 are test method standards only. No glove can be certified to these standards or "pass" these tests.



According to ASTM, manufacturers must have real-time test data to substantiate their claims, without the use of extrapolation. This is because products may not biodegrade at the same rate over time. In fact, some may not continue to biodegrade at all**



Most products only biodegrade in certain conditions. That's why many regulators require marketers to qualify advertising claims by specifying the rate and extent of biodegradation as well as the end-of life procedure (disposal requirements) which must be followed to achieve biodegradation***



Laws in many countries state that gloves that are contaminated with chemicals, bodily fluids, or that can be considered biohazardous should not be sent to active, anaerobic landfills and should not be considered biodegradable****

Footnotes:

* <https://renewable-carbon.eu/news/biodegradable-or-not-biodegradable-that-is-the-question/>

** <https://www.astm.org/d5511-18.html> & <https://www.astm.org/d5526-18.html>

*** U.S. Federal Trade Commission - https://www.ftc.gov/system/files/ftc_gov/pdf/GreenGuides-FRN-11-5-22.pdf & Competition Bureau Canada - https://ised-isde.canada.ca/site/competition-bureau-canada/en/how-we-foster-competition/education-and-outreach/publications/environmental-claims-guide-industry-and-advertisers#s10_3

**** EPA and Hazardous Waste Europe. - <https://www.epa.gov/regulatory-information-topic/regulatory-and-guidance-information-topic-waste> & <http://www.hazardouswasteurope.eu/activities-process/>

DISPOSABLE NITRILE GLOVES AND THE ENVIRONMENT

Ansell is in the progress of conducting Life Cycle Assessments (LCAs) to evaluate the environmental impact of our products. **LCAs of disposable nitrile gloves reveal that most of their carbon footprint comes from manufacturing, NOT the waste generated after use.**

DISPOSABLE NITRILE GLOVES' SOURCES OF CARBON EMISSIONS*

Assumptions:

■ **Raw Material**

(Includes production of all chemicals consumed throughout the manufacturing process and the effluent treatment plant (ETP), packaging materials as well as the impact associated with all upstream transportation of raw materials to the factory)

25%

■ **Distribution / Transportation**

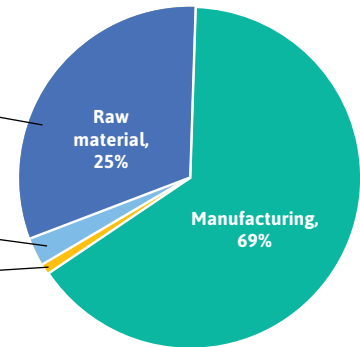
(Includes the transportation from the factory to Ansell's warehouse)

4%

■ **Disposal / End-of-life**

(Includes impact from disposal in landfills**)






2%



* Based on an Ansell commissioned 2022 LCA of a leading Ansell manufactured nitrile disposable glove.
 ** In an incineration scenario, the end-of-life value would be higher yet still remain lower than the manufacturing value.

WHAT IS ANSELL'S APPROACH?

Ansell is investing to reduce the environmental impact of our disposable glove manufacturing operations in several ways.

Biomass	Solar Panels	Reverse Osmosis	Zero Waste to Landfill	Packaging
				
We generate thermal energy with renewable biomass using wood chips instead of fossil fuels to create heat.	Electricity is generated by advanced solar photovoltaic installations, reducing costs and GHG emissions.	Wastewater is fed into a new Reverse Osmosis (RO) plant to remove contaminants so we can re-use water and reduce water withdrawals.	Our best-selling disposable gloves are manufactured in a Zero Waste to Landfill facility certified by Intertek, a world leading multinational testing & certification company.	Our packaging is recyclable and made in part with recycled paperboard.

In addition, Ansell R&D teams are actively developing products made in whole or in part with materials that are less harmful to the environment. We recently launched a new compostable glove in Europe, MICROFLEX® 31-103, made with polylactic acid (PLA). We are also exploring how to reduce dependency on fossil-based polymers and our waste to landfill output by incorporating more bio-based materials in our glove formulations.



MICROFLEX® 31-103

Ansell's first compostable gloves, made with a renewable bio-based polymer.

- Product and packaging achieve 90%+ biodegradation within 180 days in industrial composting facilities
- Certified as compostable by TÜV Austria and packaging meets EN 14342 standard for compostable plastics
- Offer hand protection with a lower environmental impact compared to gloves made with other synthetic polymers

PRODUCT AND PACKAGING
90%
 BIODEGRADATION WITHIN 180 DAYS

MADE WITH
GREEN ELECTRICITY
 AT ANSELL'S PORTUGAL FACILITY

Thinking of people and planet first

Ansell Protects™

To learn more about our sustainable journey, visit ansell.com/sustainability

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