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DIFFERENCE BETWEEN DISPOSABLE NITRILE, LATEX AND VINYL GLOVES

The most popular materials used nowadays to manufacture disposable gloves are nitrile, latex and vinyl. What are the differences between nitrile, latex and vinyl gloves and for which applications and industries each of these types of gloves is recommended for:

LATEX since it is a natural material obtained from the milky sap of the plant *Hevea brasiliensis* from the rubberwood family which, after being processed, is used as a production substance in various industries. Latex is still the most popular substance for the production of disposable gloves, however, it causes allergic reactions in a certain number of people, which caused the development of the so-called latex-free alternatives in the form of nitrile and vinyl gloves.

In the medical field, latex is still the first choice when it comes to disposable gloves due to its following features: :

- high level of protection
- finger flexibility and exceptional dexterity
- high tactile sensitivity ("second skin" feeling) and comfort

Apart from the medical field, latex is recommended for all industries where there is not too much contact with heavy oils and grease (beauty salons, maintenance and cleaning activities)

Being a natural material, latex is also biodegradable, which provides an additional advantage over artificial materials.

NITRILE (acrylonitrile butadiene rubber - **NBR**) is a synthetic rubber produced from organic chemicals.

In the late 1990s, it was developed as an alternative to latex, i.e. natural rubber, which, until then, had been indispensable in many industries.

Nitrile or nitrile rubber is characterized by the following features:

- superior strength and resistance to chemicals compared to natural latex
- exceptional resistance to heavy grease and oils
- high stability at extreme temperatures from -40 °C to +108 °C
- hypoallergenic properties – latex-free
- high durability

Nitrile is used as a production substance in all industries – automotive, aerospace, footwear manufacturing, personal protective equipment and glove manufacturing industries.

Apart from the aforementioned features, disposable nitrile gloves have shown to be highly resistant to microorganisms and provide an excellent alternative to natural latex. The only disadvantage of nitrile gloves is reduced flexibility and comfort compared to natural latex.

Application: nitrile is applicable in all sectors and industries, especially in the food, automotive, chemical and petroleum industries, but also increasingly in the medical and pharmaceutical sectors and the household. The global popularity of nitrile gloves has increased in recent years, and they are definitely taking the lead in the share of total consumption of disposable gloves in the world.

VINYL is a synthetic material and one of the types of PVC, more specifically, an oil-based film. The primary advantage of vinyl disposable gloves is cheaper raw materials compared to nitrile and latex, and despite being less durable than latex and nitrile gloves and offering limited protection from chemical or biomedical exposure, they are widely used precisely because of their affordability.

Vinyl gloves adhere less to the hand, are less elastic and provide less tactile sensitivity than latex or nitrile gloves, but are recommended for people who are prone to allergies because they are comfortable for the skin, provide a sense of comfort and are a good option for many working positions.

Their application is recommended in the food industry for cases of contact with low-fat food, in the household, the veterinary field, service industries such as hair salons, the processing industry and other sectors with a lower-risk environment.