

Nitrile Glove Chemical-Compatibility Reference

In general, nitrile rubber provides **short-term splash protection*** against the following chemicals.

Nitrile has good general resistance to:

- Oils
- Fuels
- Some organic solvents
- Weak acids
- Weak caustics

**Breakthrough will not occur in under 15 mins for a 5-mil or greater thickness glove.*

Nitrile: Short-term splash protection

Organics

Cyclohexane
Glutaraldehyde
Heptane
Mineral spirits
Pentane
Propylene glycol
Naphtha
Octane
Octanol
Hexane
Heptane

Aqueous/Inorganic

37% Formaldehyde
10% Hydrochloric acid
37% Hydrochloric acid
30% Hydrogen peroxide
10% Nitric acid
50% Potassium hydroxide
85% Phosphoric acid
50% Sodium hydroxide
10 - 13% Bleach
47% Sulfuric acid
Ethidium bromide
Mercury (metallic)

If gloves come in contact with the chemical below, they must be changed **immediately*** to avoid exposure.

Nitrile has poor resistance to:

- Alcohols
- Ketones
- Halogenated hydrocarbons
- Aromatic hydrocarbons
- Esters
- Ethers
- Amines
- Concentrated acids

**Breakthrough may occur in under one minute for a 5-mil or lesser thickness glove.*

Nitrile: Poor protection (<1 minute) Organics

Acetone	Ethanol
1,4-Dioxane	Ethyl acetate
Acetonitrile	Methanol
Acrylonitrile	n-Butanol
Benzene	Nitrobenzene
Carbon disulfide	o-Xylene
Chloroform	Phenol
Dichloromethane	Pyridine
Diethyl ether	Tetrahydrofuran
Dimethylformamide (DMF)	Toluene

The chemicals listed in **red** are able to penetrate the skin, contributing to systemic toxic effects of exposure to the chemical (ACGIH, Skin notation)

Disposable nitrile gloves do not provide protection against these highly corrosive chemicals.

These are just a few examples. This is not a complete list.

Poor resistance (<1-minute breakthrough)
+ Skin corrosion hazard and/or high toxicity

Concentrated acetic acid	88% Formic acid
30% Ammonium hydroxide	70% Nitric acid
95% Sulfuric acid	*Hydrofluoric acid (HF)

**See the [FACT SHEET: Hydrofluoric Acid](#) in the Chemical Hygiene Plan for glove recommendations for HF.*

This poster is adapted from Penn's CHP [Fact Sheet: Disposable Nitrile Gloves in Chemical Lab](#)
Scan the QR code to see the full Fact Sheet.

