Kimberly-Clark PROFESSIONAL*

KIMBERLY-CLARK* Nitrile Glove Chemical Resistance Guide

The Science of Protection.

Use the color code rating system below with the chart at right to determine the chemical compatibility for incidental exposure.

GREEN

The results for this specific chemical suggest that the glove would provide an adequate barrier for use in most applications.

A glove/chemical combination receives a GREEN rating if:
- The permeation breakthrough time is excellent or good and the chemical has high volatility.
  OR
- The permeation breakthrough time is excellent and the chemical has low volatility.

YELLOW

The results require additional consideration to determine suitability for use.

A glove/chemical combination receives a YELLOW rating if:
- Any glove/chemical combination does not meet either set of conditions required for a GREEN or RED rating.

RED

Not recommended for use.

A glove/chemical combination receives a RED rating if:
- The permeation breakthrough time is poor and the chemical has low volatility.
  OR
- The permeation breakthrough time is not recommended and the chemical has either high or low volatility.

Incidental Exposure Only

KIMBERLY-CLARK* Nitrile gloves are thin gauge disposable gloves designed to provide barrier protection and tactile sensitivity to the wearer. Our thin mil gloves are not designed for applications involving prolonged, direct exposure to chemicals. Our intent in providing this chemical compatibility information is to provide a guideline for use of our thin mil gloves in applications where incidental splash exposure to various chemicals may occur. Gloves should be removed and replaced immediately if incidental splash exposure occurs.

How to Use this Guide

Two categories of data are used to determine a color code for each chemical:

1. Permeation Breakthrough Time
2. Chemical Boiling Point

Criteria for Chemical Resistance Rating

Permeation Breakthrough Time (PB)

Rating	Minutes
Excellent (E)	60-480
Good (G)	10-59
Poor (P)	1-9
Not Recommended (NR)	< 1

Boiling Point

Volatility	Temp.
High Volatility	<24° C
Low Volatility	>24° C

Precaution: This data was generated from the KIMBERLY-CLARK* STERLING* Nitrile Exam Gloves. This data does not represent gloves thinner than the STERLING* Nitrile glove, such as the KLEENGUARD* G10 Arctic Blue Nitrile Gloves.

Chemical Name	Permeation Time (minutes) *ASTM F739-99A*	Permeation Rate (pg/cm²/min) *ASTM F739-99A*	Concentration	Color Code Rating
Acetaldehyde	<1	353	99.5%	
Acetic Acid	5	482	99.7%	
Acetone	1	466	99.5%	
Acetonitrile	1	329	99%	
Acrylic Acid	1	57.8	99%	
Ammonium Hydroxide	7	395	30%	
Amyl Acetate	4	261	99%	
Analine	7	74.7	99.5%	
Benzaldehyde	78	0.57	99.5%	
Benzene	<1	627	99.8%	
Benzyl Alcohol	5	86.8	99%	
n-Butanol	10	5.99	99.8%	
Butyl Acetate	3	233	99%	
Carbon Disulfide	2	3.81	99%	
Carbon Tetrachloride	5	48.9	99.5%	
Chloroform	1	958	99%	
Citric Acid	>480	Not Detected	50%	
Cyclohexane	>480	Not Detected	99.7%	
Cyclohexanol	112	1.18	99%	
Cyclohexanone	1	787	99.8%	
d-Limonene	107	0.157	97%	
n-Dibutyl Phthalate	>480	Not Detected	99%	
1,2-Dichlorobenzene	<1	1179	99%	
Dichloromethane	1	2006	99.9%	
Diesel Fuel, mixture	160	0.63	Mixture	
Diethyl Ether	1	595	99.9%	
Diethylamine	<1	587	99.5%	
Di-isobutyl Ketone	10	1141	80%	
Dimethyl Sulfoxide	8	501	99.90%	
Dibutyl Phthalate	>480	Not Detected	99%	
1,4-Dioxane	<1	707	99.4%	
Ethanol	7	296	99.5+%	
Ethanolamine	>480	Not Detected	99%	
Ethidium Bromide	90	0.68		
Ethylene Glycol	>480	Not Detected	99.8%	
Formaldehyde	110	0.172	37%	
Formic Acid	6	0.554	88%	
2-Furaldehyde	<1	385	99%	
Glutaraldehyde	>480	Not Detected	50%	
n-Hexane	16	55.3	99+%	
Hydrazine	31	40.2	98%	
Hydrochloric Acid	16	29.2	37%	
Hydrochloric Acid	>480	Not Detected	10%	
Isopropyl Alcohol (IPA)	29	38.6	99.50%	
Jet Fuel (Kerosene)	82	0.259	Mixture	
Lactic Acid	>480	Not Detected	85%	
Methanol	<1	257	99.8%	
1-Methoxy 2-Propanol	>480	Not Detected	99.5%	
1-Methyl 2-Pyrrolidinone	3	398	99%	
Methyl Methacrylate	<1	803	99%	
Mineral Spirits	105	1.6	mixture	
Morpholine	1	349	99%	
Naphtha	122	0.139	99%	
Nitric Acid	1	197	70%	
Nitromethane	<1	490	99%	
Nitropropane	<1	715	98%	
Octane	>480	Not Detected	99%	
Octanol	235	0.85	99+%	
Oleic Acid	>480	Not Detected	99%	
Pentane	208	0.118	99%	
Phenol	6	120	99%	
Phosphoric Acid	>480	Not Detected	85%	
Potassium Hydroxide	>480	Not Detected	50%	
Propyl Acetate	<1	819	99.5%	
Propylene Glycol	>480	Not Detected	99%	
Pyridine	<1	635	99%	
Sodium Hydroxide	>480	Not Detected	50%	
Sodium Hypochlorite (Bleach)	>480	Not Detected	10-13%	
Stoddard Solvent	207	0.78	mixture	
Styrene	<1	836	99%	
Sulfuric Acid	>480	Not Detected	47.0%	
Sulfuric Acid	1	197	95-98%	
Tetrachloroethylene	3	11	99.9%	
Trichloroethylene	<1	1054	99%	
Triethanolamine	>480	Not Detected	98%	
Turpentine	115	0.361	Mixture	
o-Xylene	1	852	98%	

Reduce Today Respect Tomorrow*

Save Space. Reduce Waste.
STERLING* Nitrile gloves help reduce environmental impact by delivering more gloves per case than traditional gloves. Learn more about the potential "green" benefits of using STERLING* Nitrile gloves at www.kimtech.com/reducetoday

For additional information on choosing the right chemical glove for your application, please visit our Chemical Resistance Database at:
http://www.kcprofessional.com/us/mkt/ChemicalSelectorGuide/

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