



Glove Protection and Selection Guide

INTRODUCTION

Hand protection is very important when working with hazardous chemicals, radioactive materials, and bloodborne pathogens or other potentially infectious materials. Gloves provide a chemical resistant barrier between the worker's hands and the reagent, but some chemicals can breach the barrier provided by the glove material. Any protective glove should be selected according to the chemical being handled and the nature of the lab operations.

Gloves are disposed of when overtly contaminated or when the integrity of the glove is compromised, and removed when work is completed. Disposable gloves should never be washed, reused, or used for touching "clean" surfaces (keyboards, telephones, etc.), and they should not be worn outside the lab. Alternatives to powdered latex gloves should be available. Hands should always be washed following removal of gloves.

Proper disposal of gloves is important. Gloves must be segregated and disposed of based on the chemical or material being handled. For questions, please consult with your Environmental Health and Safety department.

HOW TO SELECT THE BEST GLOVE:

1. Evaluate the physical conditions you will subject the glove to and determine which types of resistance are more important: abrasion, cut, puncture, temperature, etc. Physical conditions can influence chemical resistance.
2. Consider features you need for your application: grip, length, dexterity, comfort, insulation, type of cuff, extent of coating. Glove manufacturers offer a variety of styles to best suit your application. There are also several different cuff designs to suit your application requirements. There are knit wrist cuffs, designed to keep the glove firmly in place. This prevents debris from entering the glove and enhances warmth.
3. Select the glove that offers you the optimum combination of features, benefits and resistance to both physical and chemical hazards.
4. For chemical-resistance needs, refer to the *Glove Chemical Resistant Guide* listed below and the additional references.
5. Select a thinner-gauge unsupported glove when you require extra dexterity and tactile sensitivity. Choose a heavier-gauge unsupported glove for greater protection and wear. Consider a flock lined, unsupported glove for extra comfort, insulation and wear. Choose a supported or cut-and sewn glove for added cut, snag, and puncture or abrasion resistance.



-
6. Choose the finish you need for the grip necessary for your application: rough, smooth, wrinkle, embossed bisque, etc. *Note:* Some gloves have no special grip finish, yet still provide good gripping power due to intrinsic properties of the particular glove polymer.
 7. Select glove length by determining the depth to which your hand and arm will be immersed in a solution and the extent to which you need splash protection.
 8. Select the size that gives you the right fit, dexterity and comfort. To determine your size, measure the circumference around the palm area. This is your glove size. For example, 7" is equal to a size 7 glove. (XS = 6-7, S = 7-8, M = 8-9, L = 9-10, XL = 10-11).
 9. For product protection, consider the toughness, fit, thickness and degree of disposability required. Select the style that provides the most important of these features and benefits.
 10. Always inspect your gloves before using them. Of principal concern are cuts, tears and punctures. Discoloration or stiffness may indicate non-uniformities in the rubber or plastic or chemical attack resulting from previous use.
 11. Glove colors can often be used to help identify contamination or to designate critical work areas. Select the style most suited to your needs.

BLOODBORNE PATHOGENS AND OTHER POTENTIALLY INFECTIOUS AGENTS

1. Gloves are worn when hands may contact bloodborne pathogens, other potentially infectious materials, contaminated surfaces or equipment.
2. Wearing two pairs of gloves may be appropriate.
3. Gloves are disposed of when overtly contaminated or when the integrity of the glove is compromised, and removed when work with infectious materials is completed.
4. Disposable gloves should never be washed, reused, or used for touching "clean" surfaces (keyboards, telephones, etc.), and they should not be worn outside the lab.
5. Alternatives to powdered latex gloves should be available.
6. Hands should always be washed following removal of gloves.



CHEMOTHERAPEUTIC AGENTS

One of the most frequently used treatments for cancer is chemotherapy. Unfortunately it is well known that chemotherapeutic (cytostatic) agents are potentially hazardous for the manipulator.

Chemotherapeutics are known to be:

- Carcinogenic
- Mutagenic
- Teratogenic

It is important to wear the appropriate personal protective equipment when working with chemotherapeutic agents and this includes selecting a disposable glove that will protect against the adverse affects of these chemicals.

Medical gloves with a chemotherapy claim should meet an appropriate FDA-recognized consensus standard for medical gloves or an equivalent test method. Physical features such as increased thickness and length make these gloves more suitable for the safe handling of chemotherapy agents (usually minimal thickness of 0.10 mm, minimal length of 270 mm). Gloves for use with chemotherapy agents should also undergo the standard biocompatibility testing for medical gloves.

Ansell Cytostatic Permeation Program

http://150.101.90.21/mam_asset/Cytostatics%20brochure%20EN.pdf?id=01ffa7c0646b3fb200001041cc543c9&col=/client_db/ANSL&ext=jpg&type=pdf

NIOSH - Preventing Occupational Exposure to Antineoplastic and Other Hazardous Drugs in Health Care Settings, September 2004

<http://www.cdc.gov/niosh/docs/2004-165/pdfs/2004-165.pdf>

DEFINITIONS

Breakthrough Time - The time which elapses between initial contact of a chemical with the outside surface of a protective material and when the chemical can be detected at the surface of the material.

Degradation - A reduction in one of physical properties of a glove or protective clothing.

Permeation - Process by which a chemical can pass a protective film without going through pores, or other visible openings (e.g., what happens to air in an inflated balloon after several hours -- same principle).



GLOVE CHEMICAL RESISTANCE GUIDE ⁽¹⁾

| | Silver Shield (2) (4 Mil) | | | Viton (2) (9 Mil) | | | Butyl (2) (17 Mil) | | | Nitrile (2) (11 Mil) | | | Neoprene (2) (22 Mil) | | | PVC (2) (20 MIL) | | |
|---------------------|------------------------------|----------------------|-------------------------|----------------------|------|-------|-----------------------|------|-------|-------------------------|------|------|--------------------------|-----|-----|---------------------|-----|-----|
| CHEMICAL | Degradation (D) | Breakthrough (BT) | Permeation Rate (PR) | D | BT | PR | D | BT | PR | D | BT | PR | D | BT | PR | D | BT | PR |
| Acetaldehyde | E | >6h | ND | P | 0m | 281.9 | E | 9.6 | 0.07 | F | 4m | 161 | E | 21m | 18 | ID | ID | |
| Acetone | E | >6h | ND | P | ID | ID | E | >17h | ND | P | ID | ID | E | 12m | 35 | P | >1m | >> |
| Acetonitrile | E | >8h | ND | ID | ID | ID | E | >8h | ND | ID | ID | ID | E | 40m | 7 | ID | ID | |
| Acrylic Acid | ID | ID | ID | G | 5.9h | 0.23 | E | >8h | ND | F | ID | ID | ID | ID | ID | ID | ID | |
| Acrylonitrile | E | ID | ID | F | 1m | 176 | G | 3.1h | <0.01 | P | 3m | 176 | ID | ID | ID | ID | ID | |
| Aldehyde | E | >6h | ND | P | 0m | 281.9 | E | 9.5h | 0.07 | P | 4 | 161 | ID | ID | ID | ID | ID | |
| Aniline | E | >8h | ID | G | 10m | 18.7 | F | >8h | ND | P | 1.1h | 45 | E | >8h | ND | G | >8h | ND |
| Benzaldehyde | ID | ID | ID | F | 9.9h | 4 | E | 9h | ND | P | ID | ID | ID | ID | ID | ID | ID | |
| Benzene | E | >8h | ND | G | 6h | 0.012 | P | 31m | 32.3 | P | ID | ID | ID | 16m | 133 | ID | 2m | 250 |
| Benzoyl Chloride | ID | ID | ID | E | >8h | ND | F | 6.2h | 16.6 | P | ID | ID | ID | ID | ID | ID | ID | |
| Bromobenzene | E | ID | ID | E | 8h | ND | P | 32m | 39.8 | P | 13m | 9.1 | ID | ID | ID | ID | ID | |
| Butyl Acetate | E | >6h | ND | P | ID | ID | G | 1.9h | 7.61 | P | 29m | 54.4 | ID | 52m | 53 | ID | ID | |
| p-t Butyltoluene | E | >8h | ND | E | >8h | ND | G | 1.7h | 8 | P | ID | ID | ID | ID | ID | ID | ID | |
| Butyraldehyde | E | ID | ID | P | 54m | 9 | E | >15h | ND | P | ID | ID | ID | ID | ID | ID | ID | |
| Carbon Disulfide | G | >8h | ND | E | >8h | ND | P | 7m | 98 | P | 1m | 51 | ID | ID | ID | ID | ID | |



| | Silver Shield (2) (4 Mil) | | | Viton (2) (9 Mil) | | | Butyl (2) (17 Mil) | | | Nitrile (2) (11 Mil) | | | Neoprene (2) (22 Mil) | | | PVC (2) (20 MIL) | | |
|------------------------|------------------------------|----------------------|-------------------------|----------------------|------|------|-----------------------|------|------|-------------------------|------|------|-----------------------------|------|-----|---------------------|-----|-----|
| CHEMICAL | Degradation (D) | Breakthrough (BT) | Permeation Rate (PR) | D | BT | PR | D | BT | PR | D | BT | PR | D | BT | PR | D | BT | PR |
| Carbon Tetrachloride | E | >6h | ND | E | >13h | ND | P | ID | ID | G | 3.4h | 5 | F | 31m | 252 | ID | ID | |
| Cellosolve | G | >6h | ND | F | ID | ID | G | ID | ID | P | ID | ID | E | 5.9h | 3 | ID | ID | |
| Chlorobenzene | E | ID | ID | E | >8h | ND | P | 35m | 308 | P | ID | ID | ID | ID | ID | ID | ID | |
| Chloroform | P | 10m | O.OO9 | E | 9.5h | 0.46 | P | ID | ID | P | 4m | 352 | P | 12m | 220 | ID | ID | |
| Chloronaphthalene | E | >8h | ND | E | >16h | ND | P | ID | ID | P | 2.9h | >1.3 | ID | ID | ID | ID | ID | |
| Chloroprene | ID | ID | ID | ID | >8h | ND | P | 28m | 18 | ID | ID | ID | ID | ID | ID | ID | ID | |
| Cyclohexane | E | >6h | ND | E | >7h | ND | P | 1.1h | 20.3 | P | ID | ID | E | 2.7h | 7 | ID | 16m | 17 |
| Cyclohexanol | E | >6h | ND | E | >8h | ND | E | >11h | ND | E | >16h | ND | ID | ID | ID | ID | ID | |
| Cyclohexanone | E | >6h | ND | P | 29m | 86.3 | E | >16h | ND | P | ID | ID | ID | ID | ID | ID | ID | |
| Dibutylphthalate | E | >6h | ND | E | >8h | ND | E | >16h | ND | E | >16h | ND | ID | ID | ID | ID | ID | |
| 1,1,Dichloroethane | ID | 2.4h | 6 | G | 1.5h | 31 | ID | ID | ID | P | ID | ID | ID | ID | ID | ID | ID | |
| 1,2,Dichloroethane | E | >6h | ND | E | 6.9 | 0.81 | P | 2h | 53 | P | 8m | 311 | P | 33m | 247 | ID | ID | |
| Diethylamine | E | >8h | ND | P | 35m | 852 | P | 47m | 46 | F | ID | ID | ID | ID | ID | ID | ID | |
| Diethylaminoethanol | E | ID | ID | E | >8h | ND | E | >8h | ND | E | >8h | ND | ID | ID | ID | ID | ID | |
| 1,4-Diethylene Dioxide | ID | >8h | ND | P | 23m | 26.8 | E | >20h | ND | P | 28m | 77.1 | ID | 28m | 62 | ID | 8m | 250 |
| Diethylenetriamine | ID | ID | ID | E | >8h | ND | E | >8h | ND | P | ID | ID | ID | ID | ID | ID | ID | |
| Diisobutyl Ketone 80% | E | >6h | ND | F | 1.2h | 90.6 | G | 3.3h | 41.2 | F | 3h | 48.9 | ID | ID | ID | ID | ID | |
| Dimethyl Acetamide | ID | 1.5h | 0.728 | P | 25m | 3 | ID | >8h | ND | ID | ID | ID | ID | ID | ID | ID | ID | |
| Dimethyl Formamide | E | >8h | ND | P | 8m | 6.5 | E | >8h | ND | F | 1m | >15 | ID | ID | ID | ID | ID | |
| Dimethylsulfoxide | G | ID | ID | F | 1.5h | 5 | E | >8h | ND | F | ID | ID | ID | ID | ID | ID | ID | |



| | Silver Shield (2) (4 Mil) | | | Viton (2) (9 Mil) | | | Butyl (2) (17 Mil) | | | Nitrile (2) (11 Mil) | | | Neoprene (2) (22 Mil) | | | PVC (2) (20 MIL) | | |
|-----------------------|------------------------------|----------------------|-------------------------|----------------------|------|------|-----------------------|------|------|-------------------------|------|------|--------------------------|-----|-----|---------------------|------|-----|
| CHEMICAL | Degradation (D) | Breakthrough (BT) | Permeation Rate (PR) | D | BT | PR | D | BT | PR | D | BT | PR | D | BT | PR | D | BT | PR |
| Dioxane | E | >8h | ND | F | 23m | 26.8 | E | >20h | ND | P | 28m | 77.1 | ID | 28m | 62 | ID | 8m | 250 |
| Divinyl Benzene | E | >8h | ND | E | >17h | ND | F | 2.2h | 238 | P | ID | ID | ID | ID | ID | ID | ID | |
| Divinyl Benzene | E | >8h | ND | E | >17h | ND | F | 2.2h | 238 | P | ID | ID | ID | ID | ID | ID | ID | |
| Epichlorohydrin | ID | ID | ID | P | 2h | 4 | G | >8h | ND | P | ID | ID | ID | ID | ID | ID | ID | |
| Ether | ID | >6h | ND | P | 12m | 21.5 | P | 8m | 92.2 | P | 14m | 21.8 | ID | ID | ID | ID | ID | |
| Ethyl Acetate | E | >6h | ND | P | ID | ID | G | 7.6h | 3.4 | P | 8m | 145 | G | 34m | 178 | ID | ID | |
| Ethyl Ether | ID | >6h | ND | P | 12m | 21.5 | P | 8m | 92.2 | P | 14m | 21.8 | E | 18m | 51 | ID | ID | |
| Ethylamine 70% | E | 47m | 7.64 | P | ID | ID | E | >12h | ND | F | 1.1h | 30.1 | ID | ID | ID | ID | ID | |
| Ethylene dibromide | E | ID | ID | E | >8h | ND | F | 3.3h | 6 | P | ID | ID | ID | ID | ID | ID | ID | |
| Formaldehyde 37% | E | >6h | ND | E | >16h | ND | E | 16h | ND | E | >21h | ND | E | >8h | ND | G | 8h | ND |
| Furan | ID | ID | ID | P | 20m | 23 | P | 1.3h | 10 | P | ID | ID | ID | ID | ID | ID | ID | |
| Furfural | E | >8h | ND | F | 3.6h | 14.8 | E | >16h | ND | P | 28m | 265 | ID | ID | ID | ID | ID | |
| Glutaraldehyde | E | ID | ID | E | >8h | ND | E | >8h | ND | P | ID | ID | ID | ID | ID | ID | ID | |
| n-Hexane | E | >6h | ND | ID | >11h | ND | P | ID | ID | E | ID | ID | E | 39m | 5 | ID | ID | |
| Hydrazine 70% | G | >6h | ND | P | ID | ID | E | >8h | ND | G | >8h | ND | E | >8h | ND | E | 8h | ND |
| Hydrochloric Acid 37% | E | >6h | ND | E | ID | ID | E | ID | ID | P | ID | ID | E | >8h | ND | E | >8h | ND |
| Hydrofluoric Acid 50% | G | >6h | ND | G | ID | ID | F | ID | ID | P | ID | ID | E | >8h | ND | E | 1.8h | 0 |
| Isobutyl Alcohol | E | ID | ID | E | >8h | ND | E | >8h | ND | G | >8h | ND | ID | ID | ID | ID | ID | |
| Isobutyraldehyde | E | ID | ID | P | 4m | 11.5 | E | >8h | ND | P | ID | ID | ID | ID | ID | ID | ID | |
| Methacrylic Acid | ID | ID | ID | F | >8h | ND | G | >8h | ND | P | 1.7h | 23 | ID | ID | ID | ID | ID | |



| | Silver Shield (2) (4 Mil) | | | Viton (2) (9 Mil) | | | Butyl (2) (17 Mil) | | | Nitrile (2) (11 Mil) | | | Neoprene (2) (22 Mil) | | | PVC (2) (20 MIL) | | |
|-----------------------------|------------------------------|----------------------|-------------------------|----------------------|------|------|-----------------------|------|-------|-------------------------|-------|-------|--------------------------|-----|------|---------------------|------|----|
| CHEMICAL | Degradation (D) | Breakthrough (BT) | Permeation Rate (PR) | D | BT | PR | D | BT | PR | D | BT | PR | D | BT | PR | D | BT | PR |
| Methacrylonitrile | E | ID | ID | F | 4m | 462 | G | 6.8h | 0.001 | P | 7m | 560 | ID | ID | ID | ID | ID | |
| Methyl Chloroform | ID | >6h | ND | E | >15h | ND | P | ID | ID | P | 41m | 76.4 | P | 27m | 197 | ID | ID | |
| Methyl Cyanide | ID | >8h | ND | ID | ID | ID | E | >8h | ND | ID | ID | ID | E | 40m | 7 | ID | ID | |
| Methyl Ethyl Ketone | E | >24h | ND | P | ID | ID | E | >8h | ND | P | ID | ID | G | 22m | 155 | ID | 1m | >> |
| Methyl Isocyanate | ID | ID | ID | P | 4m | 121 | P | 1.1h | 9 | P | ID | ID | ID | ID | ID | ID | ID | |
| Methylamine 40% | F | 1.9h | 2 | E | >16h | ND | E | >15h | ND | G | >8h | ND | ID | ID | ID | ID | ID | |
| Methylene Chloride | G | >8h | ND | F | 1h | 7.32 | P | 24m | 133 | P | 4m | 766 | F | 6m | 239 | ID | ID | |
| Methylene Dianiline | E | >24h | ND | E | >8h | ND | E | >24h | ND | F | ID | ID | ID | ID | ID | ID | ID | |
| Methylene Dichloride | ID | 1.9h | 0.002 | G | 1.9h | 7.32 | P | ID | ID | P | 4m | 766 | ID | ID | ID | ID | ID | |
| Morpholine | E | >8h | ND | G | ID | 97 | E | >16h | ND | P | 48m | 206 | ID | ID | ID | ID | ID | |
| Nitric Acid, 3 Molar | E | >6h | ND | G | >8h | ID | F | ID | ID | P | ID | ID | E | >8h | ND | E | 1.9h | 0 |
| Nitrobenzene | E | >8h | ND | E | 21m | ND | E | >23 | ND | F | 33m | 1.7 | G | 1h | 20 | ID | ID | |
| Nitropropane | E | >8h | ND | P | >8h | 26.1 | E | >8h | ND | P | 16m | 29.5 | ID | ID | ID | ID | ID | |
| Oxalic Acid | E | >8h | ND | E | >8h | ND | E | >8h | ND | G | ID | ID | ID | ID | ID | ID | ID | |
| PCB, Aroclor 1254 50% | E | >8h | ND | E | >13h | ND | P | ID | ID | F | ID | ID | ID | ID | ID | ID | ID | |
| Pentachlorophenol 1% (3) | E | >8h | ND | ID | >8h | ND | P | ID | ID | E | >13h | ND | ID | 8h | ND | ID | ID | |
| n-Pentane | E | >6h | ND | E | >17h | ND | P | ID | ID | E | ID | ID | ID | 38m | 3 | ID | 9m | 17 |
| Perchlorethylene | E | >6h | ND | E | >15h | ND | P | ID | ID | F | >1.3h | 5.5 | ID | 28m | 75.5 | ID | ID | |
| Phenol 85%, water sat | G | >6h | ND | E | ID | ND | E | >20h | ND | P | 39m | >1500 | E | >8h | ND | ID | 32m | 13 |
| Propyl Acetate | E | >6h | ND | P | ID | ID | G | 2.7h | 2.86 | P | 17m | 72.5 | ID | ID | ID | ID | ID | |



| | Silver Shield (2) (4 Mil) | | | Viton (2) (9 Mil) | | | Butyl (2) (17 Mil) | | | Nitrile (2) (11 Mil) | | | Neoprene (2) (22 Mil) | | | PVC (2) (20 MIL) | | |
|------------------------|------------------------------|----------------------|-------------------------|----------------------|------|-------|-----------------------|------|------|-------------------------|------|------|--------------------------|-------|------|---------------------|------|-----|
| CHEMICAL | Degradation (D) | Breakthrough (BT) | Permeation Rate (PR) | D | BT | PR | D | BT | PR | D | BT | PR | D | BT | PR | D | BT | PR |
| Propylenediamine | ID | ID | ID | E | 38m | ND | E | >8h | ND | F | ID | ID | ID | ID | ID | ID | ID | |
| Pyridine | ID | ID | ID | P | ID | 74 | G | >8h | ND | P | ID | ID | ID | 28m | 117 | ID | 1m | >> |
| Red Fuming Nitric Acid | P | 35m | ID | P | ID | ID | P | ID | ID | P | ID | ID | ID | ID | ID | ID | ID | |
| Sodium Hydroxide 50% | E | >6h | ND | G | ID | ID | E | ID | ID | G | ID | ID | E | >6.7h | ND | E | 8h | ND |
| Styrene | G | >4h | ND | G | ID | ID | P | ID | ID | P | ID | ID | ID | ID | 40 | ID | 27m | 40 |
| Sulfuric Acid, 3 Molar | E | >6h | ND | E | ID | ID | G | ID | ID | P | ID | ID | E | >6.7h | ND | E | >8h | ND |
| Tetrachloroethylene | E | >6h | ND | E | >17h | ND | P | ID | ID | F | 1.3h | 5.5 | ID | 28m | 75.5 | ID | ID | |
| Tetraethylenepentamine | ID | ID | ND | E | >8h | ND | E | >8h | ND | F | ID | ID | ID | ID | ID | ID | ID | ID |
| Tetrafluoroethylene | E | ID | ID | E | >8h | ND | E | >8h | ND | ID | ID | ID | ID | ID | ID | ID | ID | ID |
| Tetrahydrofuran | E | >8h | ND | P | 4m | 327 | F | 31m | 112 | P | 4m | 167 | P | 11m | 671 | ID | 1m | >> |
| Thiophene | ID | >6h | ND | E | >8h | ND | P | 1.8h | 17 | P | ID | ID | ID | ID | ID | ID | ID | ID |
| Toluene | E | >6h | ND | E | >16h | ND | F | 21m | 22.1 | P | 11m | 68.1 | ID | 14m | 576 | ID | 3m | 350 |
| Toluene Diisocyanate | E | >8h | ND | E | >16h | ND | E | >8h | ND | G | 3.7h | 1.8 | ID | ID | ID | G | >6.7 | ND |
| Trichloroethane | E | >6h | ND | G | 7.4h | 0.24 | P | 18m | 550 | P | 8m | 283 | ID | 11m | 881 | ID | ID | ID |
| 1,1,1 Trichloroethane | E | >6h | ND | E | >15h | ND | P | ID | ID | F | 41m | 76.4 | P | 27m | 197 | ID | ID | ID |
| 1,1,2 Trichloroethane | ID | ID | ID | E | >8h | ND | P | 5.7h | 7 | P | ID | ID | ID | ID | ID | ID | ID | ID |
| Triethylamine | ID | ID | ID | E | >8h | ND | P | ID | ID | E | >8h | ND | ID | ID | ID | ID | ID | ID |
| Vinyl Chloride | E | >8h | ND | G | 4.4h | 0.098 | P | ID | ID | G | 5.7h | 0.14 | ID | ID | ID | ID | ID | ID |
| Xylene | E | >24h | ND | E | >8h | ND | P | ID | ID | P | ID | ID | ID | 23m | 135 | ID | 4m | 383 |



(1) Van Nostrand Reinhold publishing.

(2) The data for Silver ShieldTM, VitonTM, Butyl and Nitrile gloves were provided by Siebe North Inc, Charleston, SC; information on Neoprene and Polyvinyl Chloride (PVC) gloves were supplied by Pioneer Industrial Products, Williard, OH.

(3) In Kerosene

E = Excellent; **G** = Good; **F** = Fair; **P** = Poor; **ND** = None detected; **ID** = Insufficient Data; **D** = Degradation; **BT** = Breakthrough, amount of elapsed time after initial exposure before the chemical can be analytically detected on the inside surface of the glove; **PR** = Permeation Rate is expressed in mg/m²/sec. PR can be used for estimating glove thickness required; for a given material, thicker is more resistant.

Note: Silver Shield gloves may be worn as liners under other glove types to enhance protection.

Additional Glove Chemical Resistance Guides:

Ansell Healthcare – Chemical Resistance Guide, 8th edition

http://www.ansellpro.com/download/Ansell_8thEditionChemicalResistanceGuide.pdf

BEST Glove Manufacturing <http://www.bestglove.com/site/chemrest/>

NIOSH: *Recommendations for Chemical Protective Clothing - A Companion to the NIOSH Pocket Guide to Chemical Hazards*

<http://www.cdc.gov/niosh/ncpc/ncpc2.html>