

## Permeation Resistance Testing of Rubber & Plastics

It is now common practice to have rubber and plastic materials, gloves, chemical protective clothing (CPC) and medical devices analyzed for permeability against numerous laboratory reagents, general chemicals, hazardous chemicals and hospital substances. ARDL understands the importance of, and can offer, expert advice regarding the selection and testing of the most appropriate materials for a particular application along with the corresponding shelf and service lives of such materials.

## Membrane Permeability Testing of Protective Clothing & Coated Fabrics

Evaluation is also often required or recommended on most gloves and other articles of CPC as well as on some medical devices. ARDL helps both CPC/device manufacturers and CPC/device users evaluate and minimize product contamination to provide unsurpassed personal protection. Testing can be conducted per testing can be conducted per ASTM F739-12, EN16523-1, ISO 6529, F1670, ASTM F1383-12 and EN 374-3.



## Testing of Gloves with Chemotherapy Drugs & Industrial Chemicals

The US FDA requires permeation resistance testing of any gloves that may come in contact with chemotherapy drugs. In order to comply with the ASTM D6978-05 standard, any new sample intended for chemotherapy drugs usage must be tested versus a battery of nine antineoplastic agents. ARDL is the only laboratory that can assess your products against chemotherapy drugs and help you obtain FDA approval. Seven of them are specified, the remaining two are your (or your customer's) choice, from a list containing several drugs. The contact time is 4 hours at body temperature. Beside the requested 9 chemotherapy drugs, customers are welcome to test as many as needed.

### Required Chemotherapy Drugs As Specified in ASTM D6978-05

Carmustine (BiCNU)	Etoposide	Pacilitaxel
Cyclophosphamide (Cytoxan)	5 - Fluorouracil (5-Flu)	Thiotepa
Doxorubicin Hydrochloride (Adriamycin)		

### Optional Chemotherapy Drugs (Choose Two)

Bendamustine	Dacarbazine	Mechlorethamine	Rituximab
Bleomycin Sulfate	Daunorubicin HCl	Melphalan	Topotecan
BusulfanCarboplatin	Decitabine	Methotrexate	Triclosan
Carfilzomib	Docetaxel	Mitomycin	Trisonex
Cetuximab	Epirubicin	Mitoxantrone	Velcade
Cisplatin	Fludarabine	Oxaliplatin	Vidaza
Cladribine	Fulvestrant	Paraplatin	Vinblastine
Chloroquine	Gemcitabine	Pemetrexed	Vincristine Sulfate
Cyclosporin	Idarubicin	Propofol	Vinorelbine
Cytarabine	Ifosfamide	Ralitrexed	
Cytovene	Irinotecan	Retrovir	

### Anti-Viral Drugs Commonly Used for AIDS Treatment

Cytovene	Retrovir®
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Akron Rubber Development Laboratory, Inc.

## Chemical/Analytical Services: Toxic Chemical Resistance

### Chemical Resistance Testing of Rubber & Plastics

Your rubber and plastic materials, gloves, chemical protective clothing (CPC) and medical devices may need to be tested for safety in chemical rich environments. ARDL can perform in-depth analysis against a wide variety of chemical reagents used in hospital settings, military and aerospace applications and household chemicals.

### Recommended Liquid Test Chemicals for Permeation Evaluation

Acetone	Methanol
Acetonitrile	Nitrobenzene
Carbon Disulfide	Sodium Hydroxide
Dichlorormethane	Sulfuric Acid
Diethylamine	Tetrachloroethylene
Dimethylformamide	Tetrahydrofuran
Ethyl Acetate	Toluene
n-Hexane	

### Most Commonly Encountered Chemical Challenges

Alcohols	Phenolics
Accelerated Hydrogen Peroxide®	Quaternary Amines
Chlorhexidine Digluconate	Sodium Hydroxide
Formaldehyde	Sulfuric Acid
Glutaraldehyde (Cidex)	Surfactants
Hospital Disinfectants and Wipes	Tetrachloroethylene
Iodine	Tetrahydrofuran
Nitrobenzene	Toluene
Oxidizing Agents	

Contact our Chemical/Analytical Services Department today to discuss how ARDL can assist you with your pharmaceutical, microbiological or chemical testing needs.

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