

# INFORMS

May 2016

## Recommendation on Chemical Resistance - Cytotoxics

**Sempermed** gloves for single use have been tested in accordance with ASTM F 739 "Standard Test Method for Resistance of Protective Clothing Materials to Permeation by Liquids or Gases under Conditions of Continuous Contact", EN 374-3 „Protective gloves against chemicals and micro-organisms – Determination of resistance to permeation by chemicals" or ASTM D 6978 "Assessment of Resistance of Medical Gloves to Permeation by Chemotherapy Drugs "by independent accredited test institutes.

Classification:
Not suitable
Suitable if changed before permeation breakthrough
Suitable for longer operations*

Permeation Rate:	
>1 µg/cm <sup>2</sup> /min	Minimal Detection Rate according to EN 374-3 <sup>1)</sup>
< 0,1 µg/cm <sup>2</sup> /min	Minimal Detection Rate according to ASTM F 739 <sup>2)</sup>
< 0,01 µg/cm <sup>2</sup> /min	Minimal Detection Rate according to ASTM D 6978 <sup>3)</sup>

Caution: Damaged or swelling gloves shall be changed immediately!

\*For reason of precaution it is recommended to change gloves after 2 hours!

### TEST RESULTS by:

- ARDL Akron Rubber Development Laboratory, Ohio, USA
- ProQares, Rijswijk, NETHERLANDS

Breakthrough Detection Time (BDT) = Minutes (min)\*

Chemotherapy Drug	mg/ml	Surgical gloves											
		Sempermed® Supreme		Sempermed® Supreme plus		Sempermed® Syntegra IR		Sempermed® Syntegra Green		Sempermed® Supreme Green		Sempermed® Syntegra UV	
		Latex - NR		Latex-NR		Polyisopren		Polyisopren		Latex - NR		Polyisopren	
		BDT		BDT		BDT		BDT		BDT		BDT	
5-Fluorouracil	50.0	35 <sup>2)</sup>		35 <sup>2)</sup>		n.t.	n.t.	n.t.	n.t.	> 240 <sup>3)</sup>		n.t.	n.t.
5-Fluorouracil	10.0	n.t.	n.t.	n.t.	n.t.	> 480 <sup>1)</sup>		> 480 <sup>1)</sup>		n.t.	n.t.	> 240 <sup>3)</sup>	
Bleomycin sulphate	15	>240		>240		>240		n.t.		>240			n.t.
Carboplatin	10	>240		>240		>240		n.t.		>240			n.t.
Carmustine (BiCNU)	3.3	15 <sup>2)</sup>		15 <sup>2)</sup>		> 240 <sup>1)</sup>		> 240 <sup>1)</sup>		9 <sup>3)</sup>		16 <sup>3)</sup>	
Cisplatin	1.0	> 240 <sup>2)</sup>		> 240 <sup>2)</sup>		> 240 <sup>1)</sup>		> 240 <sup>1)</sup>		> 240 <sup>3)</sup>		> 240 <sup>3)</sup>	
Cyclophosphamide (Cytosan)	20.0	> 240 <sup>2)</sup>		> 240 <sup>2)</sup>		> 480 <sup>1)</sup>		> 480 <sup>1)</sup>		110 <sup>3)</sup>		> 240 <sup>3)</sup>	
Cytarabine HCL	100	>240		>240		>240		n.t.		>240			n.t.
Dacarbazine (DTIC)	10.0	> 240 <sup>2)</sup>		> 240 <sup>2)</sup>		> 480 <sup>1)</sup>		> 480 <sup>1)</sup>		> 240 <sup>3)</sup>		> 240 <sup>3)</sup>	
Daunorubicin HCL	5	>240		>240		>240		n.t.		>240			n.t.
Doxorubicin Hydrochloride	2.0	> 240 <sup>2)</sup>		> 240 <sup>2)</sup>		> 480 <sup>1)</sup>		> 480 <sup>1)</sup>		> 240 <sup>3)</sup>		> 240 <sup>3)</sup>	
Docetaxel	10	>240		>240		> 240		n.t.		>240			n.t.
Epirubicin	2.0	> 240 <sup>3)</sup>		> 240 <sup>3)</sup>		> 240 <sup>1)</sup>		> 240 <sup>1)</sup>		> 240 <sup>3)</sup>		> 240 <sup>3)</sup>	
Etoposide	20.0	15 <sup>2)</sup>		15 <sup>2)</sup>		> 240 <sup>1)</sup>		> 240 <sup>1)</sup>		> 240 <sup>3)</sup>		> 240 <sup>3)</sup>	
Gemcitabine	38	>240		>240		>240		n.t.		>240			n.t.
Idarubicin	1	>240		>240		>240		n.t.		>240			n.t.
Irinotecan	20	>240		>240		> 240		n.t.		>240			n.t.
Ifosfamide	50	/		/		< 230		n.t.		>240			n.t.
Melphalan (Alkeran)	5.0	> 480 <sup>1)</sup>		> 480 <sup>1)</sup>		> 480 <sup>1)</sup>		> 480 <sup>1)</sup>		> 240 <sup>3)</sup>		> 240 <sup>3)</sup>	
Methotrexate (Amethopterin Hydrate)	25.0	> 240 <sup>2)</sup>		> 240 <sup>2)</sup>		> 480 <sup>1)</sup>		> 480 <sup>1)</sup>		> 240 <sup>3)</sup>		> 240 <sup>3)</sup>	
Mitomycin C	0.5	> 480 <sup>1)</sup>		> 480 <sup>1)</sup>		> 480 <sup>1)</sup>		> 480 <sup>1)</sup>		> 240 <sup>3)</sup>		> 240 <sup>3)</sup>	
Mitoxantrone	2.0	> 240 <sup>2)</sup>		> 240 <sup>2)</sup>		> 240 <sup>1)</sup>		> 240 <sup>1)</sup>		> 240 <sup>3)</sup>		> 240 <sup>3)</sup>	
Oxaliplatin	5	>240		>240		>240		n.t.		>240			n.t.
Paclitaxel (Taxol)	6.0	> 240 <sup>2)</sup>		> 240 <sup>2)</sup>		> 240 <sup>1)</sup>		> 240 <sup>1)</sup>		> 240 <sup>3)</sup>		> 240 <sup>3)</sup>	
Thio-Tepa	10.0	40 <sup>2)</sup>		40 <sup>2)</sup>		> 480 <sup>1)</sup>		> 480 <sup>1)</sup>		3 <sup>3)</sup>		27 <sup>3)</sup>	
Topotecan	1	>240		>240		>240		n.t.		>240			n.t.

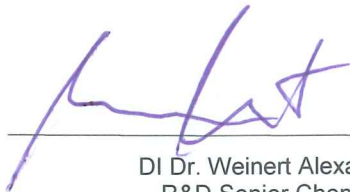
Vinblastin	1	>240	>240	>240	>240	n.t	>240	n.t
Vinorelbine	0,1	>240	>240	>240	>240	n.t	>240	n.t
Vincristine	1.0	> 240 <sup>3)</sup>	> 240 <sup>3)</sup>	> 240 <sup>3)</sup>	> 240 <sup>3)</sup>	> 240 <sup>3)</sup>	> 240 <sup>3)</sup>	> 240 <sup>3)</sup>

\* Concentration: according instruction leaflet  
**New chemicals measured according to ASTM 6978**

n.t. .... not tested

**Disclaimer:** Sempermed wants to state that the values for the permeation levels are based on tests in laboratory under fixed conditions and cannot reflect all actual conditions. As a rule, tests and certificates can only be regarded as general information and will not discharge the user from his duty to make sure before the use that the glove will correspond to his actual protection needs.

When working with materials harmful to the skin before starting to work please always check the glove for any defects.




---

DI Dr. Weinert Alexander  
R&D Senior Chemist




---

Eva Zajackowska  
Technical Product Engineer