

TECHNICAL SERVICES REPORT

Recommendation on chemical resistance

INTRODUCTION

Protective gloves **Semperguard** for single use have been tested in accordance with EN 374-3 "Determination of resistance to permeation by chemicals" by independent or accredited test institutes.

PERFORMANCE INDEX FOR EN 374-1, CLAUSE 5.2 PERMEATION:

Measured breakthrough time:	Classification:	Measured breakthrough time:	Classification:
immediate	not recommended	> 60 min	Class 3
1 – 11 min.	only splash protection change glove at contact	> 120 min	Class 4
> 10 min	Class 1	> 240 min	Class 5
> 30 min	Class 2	> 480 min	Class 6

TEST RESULTS: Breakthrough time according EN 374-3 in minutes

Chemical (synonyms)	Semperguard Exam			
	Latex	Vinyl	Nitrile	Chloroprene
Acetic acid (10%)(methylcarbon acid)	>480 min	>480 min	>480 min	>480 min**
Acetone (2- propanone, methyl ketone)	immediate	immediate**	immediate	immediate
Acetonitrile (cyanomethane, ethyl nitrile)	1 min**	< 2 min	immediate	immediate
Acrylamid (40%) (acrylic acid amide)	>240 min**	n. t.	>480 min	>240 min*
Ammoniumhydroxid (25 %)	1 min	>240 min	15 min	13 min
Benzalconiumchloride liquid (Quart)	>240 min	>240 min	n. t.	n. t.
Chlorhexidingluconat+ethanol+water	1 min **	n. t.	12 min	n. t.
Chlorhexidin firm	> 480 min	> 480 min	> 480 min	n. t.
Chloroform (trichloromethane, methyl trichloride)	immediate	n. t.	immediate	n. t.
Cyclohexanol firm (Hexalin)	>240 min	>240 min	> 480 min	n. t.
Dichlormethane (methylene chloride, Freon 30)	immediate	immediate	immediate	immediate
Diesel fuel (100%)	2 min*	3 min	80 min**	20 min*
Diethylamine (DEA)	immediate**	immediate	immediate	n. t.
Diethylether (diethyloxid, ethoxyethane, anesthetic ether)	immediate**	immediate	immediate	n. t.
Dimethylsulfoxide DMSO (deltan, demasorb)	2 min	immediate	3 min	n. t.
Ethanol (20%) (ethyl alcohol)	2 min	n. t.	20 min	n. t.
Ethanol (80 %) (ethyl alcohol)	1 min	2 min	9 min	40 min
Ethidium bromide (1%) (homidium bromide)	>480 min	>480 min	>480 min	n. t.
Ethyl acetate (Aceto acid ether)	immediate	immediate	1 min**	n. t.
Formaldehyde (37%) in 10% Methanol	2 min**	1 min	30 min	n. t.
Formaldehyde (37%)(formalin, methyl aldehyde)	60 min**	2 min	> 480 min	>480 min
Gasoline (heavy, bp 150 – 190°C – CAS 8232-32-4)	n. t.	immediate	30 min	5 min
Glutaraldehyde (5%)(1,3- diformylpropane; Glutaral)	240 min	>240 min	>480 min	>240 min*
Heptan – n	immediate**	immediate**	13 min	2 min
Hexan – n	immediate**	immediate	9 min	immediate
Hydrochloric acid (36%) (muriatic acid, chlorohydric acid)	>17 min	>30 min	100 min	250 min
Isopropyl alcohol (2- propanol, isopropanol, IPA)	<2 min	2 min	10 min	100 min*
Linseed oil	<2 min	<2 min	<2 min	n. t.
Methanol (methyl alcohol, carbinol, colonial spirit, methylol)	immediate**	n. t.	6 min	3 min
Methylmethacrylat (MMA)	n. t.	n. t.	n. t.	n. t.

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Technical Product Management

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	Exam Latex	Vinyl	Nitrile	Chloroprene
Nitric acid (10%) (azotic acid)	>480 min	>480 min	>480 min	n. t.
Nitric acid (50%) (azotic acid)	130 min	130 min	40 min	>480 min
Phenol (10%) (carbolic acid, benzenol, hydroxybenzene)	<5 min	<10 min	<10 min	8 min
Phosphoric acid (10%) (orthophosphoric acid)	n. t.	n. t.	>480 min	>480 min**
Potassium hydroxide (30%) (caustic potash, lye)	n. t.	n. t.	>480 min	n. t.
Sodium hydroxide (30%) (caustic soda, lye, white caustic)	350 min	>480 min	>480 min	>480 min
Sulfuric acid (96%) (vitriol)	13 min	7 min	15 min	>20 min
Toluene (methylbenzol, phenylmethan, toluol)	immediate	immediate	immediate	immediate**
Trichlorethane (methyltrichloromethane, chlorotene)	immediate	immediate	immediate	immediate**
Xylene (xylof, dimethylbenzene)	immediate	immediate	1 min**	immediate

n. t.: not tested

*ASTM F 739

**estimated based on similar tested glove-types

Disclaimer: Sempermed wants to state that the values for the permeation levels for all Sempermed and Industrial gloves are based on tests performed in laboratory under fixed conditions and cannot reflect all actual "in use"- circumstances. 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. If there's any doubt ask at your supplier or Semperit directly.