

Alto 405

Chemical Product	CAS #	Breakthrough time (minutes)	Permeation level	Standard	Degradation level	Rating
Acetic acid 50%	64-19-7	480	6	ASTM F739	NT	---
Acetic acid 99%	64-19-7	48	2	EN 16523-1:2015	NT	---
Acetone 99%	67-64-1	14	1	ASTM F739	4	+
Acetonitrile 99%	75-05-8	15	1	ASTM F739	4	+
Ammonium hydroxide solution 25%	1336-21-6	23	1	EN 16523-1:2015	NT	---
Ammonium hydroxide solution 29%	1336-21-6	62	3	ASTM F739	NT	---
Bromine 100%	7726-95-6	6	0	EN 374-3:2003	NT	---
Carbon disulfide 99%	75-15-0	2	0	ASTM F739	1	-
Citric Acid 10%	77-92-9	480	6	ASTM F739	NT	---
Cyclohexanone 99%	108-94-1	11	1	EN 374-3:2003	3	=
Dibutyl Phthalate 99%	84-74-2	480	6	ASTM F739	NT	---
Dichloromethane (Methylene Chloride) 99%	75-09-2	4	0	ASTM F739	1	-
Diethylamine 98%	109-89-7	5	0	ASTM F739	1	-
Dimethylformamide 99%	68-12-2	85	3	ASTM F739	4	++
Dimethylsulfoxide 99%	67-68-5	368	5	ASTM F739	NT	---
Diocetyl Phthalate 99%	117-81-7	480	6	ASTM F739	NT	---
Ethanol 95%	64-17-5	22	1	EN 374-3:2003	3	=
Ethyl acetate 99%	141-78-6	8	0	ASTM F739	3	=
Formaldehyde 37%	50-00-0	NT	NT		4	---
Gun Flush ES mixture	NA	67	3	ASTM F739	NT	---
Hydrochloric acid 10%	7647-01-0	480	6	EN 374-3:2003	NT	---
Hydrochloric acid 35%	7647-01-0	480	6	EN 374-3:2003	NT	---
Methanol 85%	67-56-1	NT	NT		4	---
Methanol 99%	67-56-1	23	1	ASTM F739	4	+
Methyl Ethyl Ketone (2-Butanone) 99%	78-93-3	12	1	ASTM F739	3	=
n-hexane 95%	110-54-3	6	0	ASTM F739	1	-
N-methyl-2-Pyrrolidone 99%	872-50-4	39	2	EN 374-3:2003	4	+
N-N dimethyl acetamide 30%	127-19-5	NT	NT		4	---
N-N dimethyl acetamide 99%	127-19-5	22	1	EN 374-3:2003	4	+
Nitric acid 65%	7697-37-2	480	6	EN 16523-1:2015	4	++

*not normalized result

Overall Chemical Protection Rating

Protection rating is determined by taking into account the effects of both permeation and degradation in an attempt to provide users with an overall protection guideline when using our glove products against specific chemicals.

- Used for **high chemical exposure** or chemical immersion, limited to breakthrough time based on a working day.
- Used for **repeated chemical contact**, limited to total chemical exposure i.e. : accumulative breakthrough time based on a working day.
- **Splash protection only**, on chemical exposure the gloves should be discarded and new gloves worn as soon as possible.
- **Not recommended**, these gloves are deemed unsuitable for work with this chemical.

NT : Not tested

NA : Not applicable because not fully tested (only degradation OR permeation results)

The chemical test data and overall chemical protection rating should not be used as the absolute basis for glove selection. Actual in-use conditions may vary glove performance from the controlled conditions of laboratory tests. Factors other than chemical contact time

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Nitrobenzene 99%	98-95-3	33	2	ASTM F739	NT	---
Sodium hydroxide 20%	1310-73-2	480	6	ASTM F739	4	++
Sodium hydroxide 40%	1310-73-2	480	6	ASTM F739	3	++
Sodium hydroxide 50%	1310-73-2	480	6	ASTM F739	4	++
Styrene 99%	100-42-5	6	0	ASTM F739	1	-
Sulfuric acid 10%	7664-93-9	NT	NT		4	---
Sulfuric acid 40%	7664-93-9	NT	NT		4	---
Sulfuric acid 50%	7664-93-9	NT	NT		4	---
Sulfuric acid 96%	7664-93-9	12	1	ASTM F739	NT	---
Tetrachloroethylene (Perchloroethylene) 99%	127-18-4	8	0	ASTM F739	1	-
Tetrahydrofurane 99%	109-99-9	5	0	ASTM F739	1	-
Toluene 99%	108-88-3	7	0	ASTM F739	1	-
Unisolve EX mixture	NA	73	3	ASTM F739	NT	---

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