



BECAUSE YOU TAKE **SAFETY** PERSONALLY

# PVC CHEMICAL-RESISTANT GLOVES

## Chemical Degradation & Permeation



CHEMICAL	CHEMICAL ABSTRACTS SERVICE (CAS) NUMBER	22KA70, 22KA71, 22KA72, 22KA73 SHIELD PLUS SERIES		22KA61, 22KA62, 22KA63 C. SHIELD PLUS SERIES	
		DEGRADATION	BREAKTHROUGH TIME	DEGRADATION	BREAKTHROUGH TIME
1,2 DICHLOROETHANE	107-06-2	P	11	NR	8
1,2 DICHLOROETHANE 76% + PHENOL 24%		NT	11	NT	14
1,2 DICHLOROETHAN REINCST		NT	18	NT	8
1-BUTANOL	71-36-3	NT	78	NT	80
2,6-DIMETHYL-4-HEPTANONE	108-83-8	G/E	>480	G/E	>480
ACETALDEHYDE	75-07-0	P	9	P	13
ACETIC ACID (GLACIAL)	64-19-7	G	74	G	44
ACETONE	67-64-1	NR	11	NR	6
ACETONITRILE	75-05-8	NT	18	NT	13
ACRYLAMIDE (50%)	79-06-1	G/E	>480	G/E	>480
ACRYLIC ACID			52		69
AMMONIUM FLORIDE (40%)		G/E	>480	G/E	>480
AMMONIUM HYDROXIDE (<30%)	1336-21-6	G/E	>480	G/E	>480
AMMONIUM HYDROXIDE (35%)			>480		>480
AMYL ACETATE	628-63-7	NT	27	NT	25
ANILINE	62-53-3	G	83	G	90
BATTERY ACID	7664-93-9	G/E	>480	G/E	>480
BENZALDEHYDE	100-52-7	NT	42	NT	40
BENZENE	71-43-2	NR	15	NR	9
BUTOXY PROPANOL	5131-66-5	G/E	>480	G/E	>480
BUTOXY TRIGLYCOL	143-22-6	G/E	>480	G/E	>480
BUTYL ACETATE	123-86-4	NT	20	NT	12
BUTYL CARBITOL SOLVENT	112-34-5	G/E	>480	G/E	>480
BUTYL CELLOSOLVE SOLVENT	111-76-2	G/E	>480	G/E	>480
BUTYL DIPROPASOL SOLVENT	29911-28-2	G/E	>480	G/E	>480
BUTYL ETHYLENE	592-41-6	G/E	>480	G/E	>480
BUTYL PROPASOL SOLVENT	5131-66-8	G/E	>480	G/E	>480
CARBON DISULFIDE	75-15-0		5		7
CARBON TETRACHLORIDE	56-23-5		42		40
CASTOR OIL		G/E	>480	G/E	>480
CAUSTIC POTASH (45%)	1310-58-3	G/E	>480	G/E	>480
CAUSTIC SODA (50%)	1310-73-2	G/E	>480	G/E	>480
CHLOROBENZENE	108-90-7	NT	12	NT	14
CHLOROFORM	67-66-3	NT	8		



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		DEGRADATION	BREAKTHROUGH TIME	DEGRADATION	BREAKTHROUGH TIME
CHROMIC ACID (50%)	1333-82-0	G/E	>480	G/E	>480
CHROMIUM TRIOXIDE	1333-82-0	G/E	>480	G/E	>480
CITRIC ACID (30%)	77-92-9	G/E	>480	G/E	>480
COOKING OIL		G/E	>480	G/E	>480
CORN OIL		G/E	>480	G/E	>480
CRESOL	1319-77-3	G/E	>480	G/E	>480
CRESYLIC ACID	1319-77-3	G/E	>480	G/E	>480
CYCLOHEXANE	110-82-7	NT	38	NT	34
CYCLOHEXANONE	108-94-1	NT	58	NT	49
CYCLOHEXANOL	108-93-0	G/E	>480	G/E	>480
DETERGENT		G/E	>480	G/E	>480
DI-ISOBUTYL KETONE	108-83-8	G/E	>480	G/E	>480
DI-ISOOCTYL PHTHALATE (DIOP)		G/E	>480	G/E	>480
DIACETONE ALCOHOL		G/E	>480	G/E	>480
DIBUTYL PHTHALATE (DBP)	84-74-2	G/E	>480	G/E	>480
DIESEL	77650-28-3	G/E	>480	G/E	>480
DIETHANOLAMINE	111-42-2	G/E	>480	G/E	>480
DIETHYLAMINE	109-89-7	NT	7	NT	8
DIETHYL ETHER		NR	6	NR	6
DIETHYLENE GLYCOL MONOBUTYL ETHER	112-34-5	G/E	>480	G/E	>480
DIETHYLENE GLYCOL MONOHEXYL ETHER	112-59-4	G/E	>480	G/E	>480
DIETHYLENE GLYCOL MONOMETHYL ETHER	111-77-3	G/E	>480	G/E	>480
DIETHYLENE GLYCOL MONOPROPYL ETHER	6881-94-3	G/E	>480	G/E	>480
DIMETHYLACETAMIDE					
DIMETHYL FORMAMIDE (DMF)	68-12-2	NR	21	NR	22
DIPROPASOL GLYCOL MONOBUTYL ETHER	29911-28-2	G/E	>480	G/E	>480
DIPROPYLENE GLYCOL MONOBUTYL ETHER	29911-28-2	G/E	>480	G/E	>480
DIPROPYLENE GLYCOL MONOPROPYL ETHER	29911-27-1	G/E	>480	G/E	>480
1,4 DIOXANE			36		34
EPICHLOROHYDRIN			19		27
EPOXIDISED SOY BEAN OIL		G/E	>480	G/E	>480
ETHANOLAMINE	141-43-5	G/E	>480	G/E	>480
ETHOXYTRIGLYCOL	112-50-5	G/E	>480	G/E	>480
ETHYL ACETATE	141-78-6	NR	13	NR	7
ETHYL BUTANOL		G/E	>480	G/E	>480
ETHYLENE GLYCOL	107-21-1	G/E	>480	G/E	>480
ETHYLENE GLYCOL MONOPROPYL ETHER	2807-30-9	G/E	>480	G/E	>480
ETHYL ALCOHOL (90%)	64-17-5		53		47
FORMALDEHYDE (37%)	50-00-0	G/E	>480	G/E	>480
FORMIC ACID (90%)	64-18-6	G/E	>480	G/E	>480



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		DEGRADATION	BREAKTHROUGH TIME	DEGRADATION	BREAKTHROUGH TIME
FURFURAL			40		59
GENKLENE		NT	8	NR	6
GLYCERINE		G/E	>480	G/E	>480
GROUNDNUT OIL		G/E	>480	G/E	>480
HEXYLCARBITOL SOLVENT	112-59-4	G/E	>480	G/E	>480
HEXYLCELLOSOLVE SOLVENT	112-25-4	G/E	>480	G/E	>480
HYDRAZINE HYDRATE (85%)	302-01-2	G/E	>480	G/E	>480
HYDROCHLORIC ACID (10%)	7647-01-0	G/E	>480	G/E	>480
HYDROCHLORIC ACID (30%)	7647-01-0	G/E	>480	G/E	>480
HYDROCHLORIC ACID (37%)	7647-01-0	NT		NT	210
HYDROGEN PEROXIDE	7722-84-1	G/E	>480	G/E	>480
HYDROGEN PEROXIDE (30%)	7722-84-1	G/E	>480	G/E	>480
HYDROQUINONE		G/E	>480	G/E	>480
IODOMETHANE	74-88-4				
ISOAMYL ALCOHOL	123-51-3	G	122	G	112
ISOBUTYL ALCOHOL		NT	91	NT	69
ISOBUTYL METHYL KETONE		NR	22	NR	19
ISOPROPYL ALCOHOL		G	80	G	75
KEROSENE	8008-20-6	G/E	>480	G/E	>480
KEROSENE (PARAFFIN)		NT	119	NT	178
LACTIC ACID (85%)		G/E	>480	G/E	>480
MALEIC ACID		G/E	>480	G/E	>480
METHOXYTRIGLYCOL	112-35-6	G/E	>480	G/E	>480
METHANOL	67-56-1	NT	31	NT	29
METHYL ACETATE	79-20-9	NR	8	NR	9
METHYL ACRYLATE		NT	10	NT	11
METHYL ALCOHOL		NT	20	NT	18
METHYL AMINE (40%)			>480		>480
METHYL ETHYL KETONE	78-93-3	NR	10	NR	6
METHYL METHACRYLATE	80-62-6	NR	8	NR	9
METHYL CARBITOL SOLVENT	111-77-3	G/E	>480	G/E	>480
METHYLENE CHLORIDE	74-87-3	NT	8	NR	6
MILK		G/E	>480	G/E	>480
MILK PRODUCTS (BUTTER, ETC.)		G/E	>480	G/E	>480
MONOETHANOLAMINE		G/E	>480	G/E	>480
MORPHOLIN	110-91-8	NT	63	NT	56
MURIATIC ACID	7647-01-0	G/E	>480	G/E	>480
N,N DIMETHYL ACETAMIDE	127-19-5	NT	30	NT	29
n-HEPTANE		NT	52	NT	40
n-HEXANE		NR	15	P	20
n-OCTANOL	111-87-5	G/E	>480	G/E	>480
NITRIC ACID (10%)		G/E	>480	G/E	>480
NITRIC ACID (65%)		NT	245	NT	75
NITROBENZENE	98-95-3	NT	55	NT	43
NITROMETHANE	75-52-5	NT	16	NT	17



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NITROPROPANE (95.5%)			29		35
N-METHYL-2-PYRROLIDONE			90		133
OCTANE (PETROL OR GASOLINE)		NT	27	NT	36
OIL-BASED PAINTS		G/E	>480	G/E	>480
OLEIC ACID	112-80-1	G/E	>480	G/E	>480
OLIVE OIL	8001-25-0	G/E	>480	G/E	>480
ORTHO PHOSPHORIC ACID (85%)		G/E	>480	G/E	>480
OXALIC ACID		G/E	>480	G/E	>480
PARAFFIN (52% CHLORINATION)		G/E	>480	G/E	>480
PENTANE	109-66-0	NT	12	NT	19
PETROL		NT	28	NT	24
PERCHLORIC ACID (60%)		G/E	>480	G/E	>480
PHENOL (76% IN H <sub>2</sub> O)	108-95-2			NT	171
PHENOL (90%)	108-95-2		>480		>480
PHTHALIC ACID DIBUTYL ESTER	84-74-2	G/E	>480	G/E	>480
POTASSIUM HYDROXIDE (40%)	1310-58-3				
POTASSIUM HYDROXIDE (50%)	1310-58-3		>480		>480
POTASSIUM HYDROXIDE (SATURATED)					
PROPANOL		NT	82	NT	74
PROPYLAMPHOS (50% IN ROH)	31218-83-4	G/E	>480	G/E	>480
PROPOXY DIETHYLENE GLYCOL	6881-94-3	G/E	>480	G/E	>480
PROPYL ACETATE			10		20
PROPYL CARBITOL SOLVENT	6881-94-3	G/E	>480	G/E	>480
PROPYL CELLOSOLVE SOLVENT	2807-30-9	G/E	>480	G/E	>480
PROPYLENE GLYCOL MONOBUTYL ETHER	5131-66-8	G/E	>480	G/E	>480
PYRIDINE	7291-22-7	NR	11	P	15
SAFROTIN (50% IN ROH)	31218-83-4	G/E	>480	G/E	>480
SODIUM HYDROXIDE (50%)	1310-73-2		>480		>480
SODIUM HYPOCHLORITE (6%)	7681-52-9	G/E	>480	G/E	>480
STYRENE	100-42-5	NT	22	NT	21
SULPHURIC ACID (47%)	7664-93-9	G/E	>480	G/E	>480
SULPHURIC ACID (CON.)	7664-93-9	NT	104	NT	119
SULPHURIC ACID (30%)	7664-93-9	G/E	>480	G/E	>480
TANNIC ACID (65%)		G/E	>480	G/E	>480
TERT-BUTYL AMINE		NT	164	NT	145
TETRACHLOROETHYLENE	127-18-4	P	20	P	21
Tetrahydrofuran	109-99-9	NT	9	NR	4
TOLUENE	108-88-3	NR	18	NR	11
TOLUENE EXTRA PURE					
TRICHLOROETHANE		P	15	P	17
TRICHLOROETHYLENE	79-01-6	P	17	P	12
TRICRESYL PHOSPHATE (TCP)	1330-78-5	G/E	>480	G/E	>480
TRIETHANOLAMINE (TEA)	120-71-6	G/E	>480	G/E	>480
TRIXYLYL PHOSPHATE (T.X.P.)		G/E	>480	G/E	>480
XYLENE	1330-20-7	NR	33	NR	29



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**DEGRADATION:** A change in one or more of the physical properties of a glove due to contact with a chemical.

**BREAKTHROUGH TIME:** The elapsed time between initial contact of the chemical on the glove surface and the analytical detection on the inside of the glove.

### CAS NUMBER

The Chemical Abstracts Service identification numbers provide unique identifiers for easy cross-reference to Material Safety Data Sheets (MSDS). Some chemicals are known by several widely used names. Some well-known synonyms appear in this guide and have the same CAS Number.

DEGRADATION			
	WEIGHT CHANGE	PUNCTURE RESISTANCE	CONDITION AFTER DRYING
E (EXCELLENT)	0-10%	> 3.4 lbf	SOFT
G (GOOD)	11-20%	2.2-3.4 lbf	SOFT
F (FAIR)	21-30%	1.1-2.2 lbf	SLIGHTLY HARD
P (POOR)	OVER 30%	< 1.1 lbf	HARD
NR (NOT RECOMMENDED)	–	–	BREAK
NT (NOT TESTED)	–	–	–
G/E	A degradation test for this chemical was not run. However, since its breakthrough time is greater than 480 minutes, the degradation rating is expected to be GOOD to EXCELLENT.		

The results herein are obtained under controlled laboratory conditions and are for guidance only. It is the intention to assist the user to make the correct choice of personal protective equipment. Actual conditions of end use are not simulated and it is the responsibility of the user to determine the risk and make the appropriate choice for protection against such risk. The manufacturer, the distributor and the sales agents accept no responsibility for a user's selection against particular risk. The manufacturer, the distributor and the sales agents do not imply any guarantee or responsibility from information provided that a particular product will suit specific end use.