



BECAUSE YOU TAKE **SAFETY** PERSONALLY

PVC CHEMICAL-RESISTANT GLOVES

Chemical Degradation & Permeation



CHEMICAL	CHEMICAL ABSTRACTS SERVICE (CAS) NUMBER	200 SERIES		600 SERIES		5K SERIES	6K SERIES
		DEGRADATION	BREAKTHROUGH TIME	DEGRADATION	BREAKTHROUGH TIME	BREAKTHROUGH TIME	BREAKTHROUGH TIME
1,2 DICHLORO ETHANE 76% + PHENOL 24%		NT	21	NT	11		
1,2 DICHLORO ETHANE	107-06-2	NR	4	P	11	11	11
1,2 DICHLOROETHAN REINCST	107-06-2	NT	12	NT	18		
1,4 DIOXANE	123-91-1		18		36	27	22
1-BUTANOL (BUTYL ALCOHOL)	71-36-3	NT	30	NT	78	>480	>480
1-PROPANOL (PROPYL ALCOHOL)	71-23-8	NT	41	NT	82		
2,6-DIMETHYL-4-HEPTANONE	108-83-8	G/E	>480	G/E	>480	>480	>480
2-NITRO PROPANE (95.5%)	79-46-9		30		29	21	26
ACETALDEHYDE	75-07-0	NR	6	P	9	24	27
ACETIC ACID (GLACIAL)	64-19-7	F	24	G	74	121	82
ACETIC ACID (25%)			65				
ACETONE	67-64-1	NR	6	NR	11	8	10
ACETONITRILE	75-05-8	NT	12	NT	18	22	24
ACRYLAMIDE (50%)	79-06-1	G/E	>480	G/E	>480	>480	>480
ACRYLIC ACID	79-10-7		38		52	58	39
AMMONIA GAS							
AMMONIUM FLORIDE (40%)	12125-01-8	G/E	>480	G/E	>480	>480	>480
AMMONIUM HYDROXIDE (<30%)	1336-21-6	G/E	>480	G/E	>480	>480	>480
AMMONIUM HYDROXIDE (35%)	1336-21-6		>480		>480	>480	>480
AMYL ACETATE	628-63-7	NT	18	NT	27		
ANILINE	62-53-3	G	65	G	83	230	173
ANIMAL FATS		G/E	>480	G/E	>480	>480	>480
BATTERY ACID	7664-93-9	G/E	>480	G/E	>480	>480	>480
BENZALDEHYDE	100-52-7	NT	18	NT	42	66	48
BENZENE	71-43-2	NR	7	NR	15	17	23
BRAKE FLUID		G/E	>480	G/E	>480	>480	>480
BUTOXY PROPANOL	5131-66-5	G/E	>480	G/E	>480	>480	>480
BUTOXY TRIGLYCOL	143-22-6	G/E	>480	G/E	>480	>480	>480
BUTYL ACETATE	123-86-4	NT	12	NT	20		
BUTYL CARBITOL SOLVENT (DIETHYLENE GLYCOL MONOBUTYL ETHER)	112-34-5	G/E	>480	G/E	>480	>480	>480
BUTYL CELLOSOLVE SOLVENT (2-BUTOXY ETHANOL)	111-76-2	G/E	>480	G/E	>480	>480	>480
BUTYL ETHYLENE (1-HEXENE)	592-41-6	G/E	>480	G/E	>480	>480	>480
BUTYRO LACTONE	96-48-0		88		88	122	88
CARBON TETRACHLORIDE	56-23-5		23		42	43	31
CARBON DISULFIDE	75-15-0		4		5	8	5
CASTOR OIL (RICINUS OIL)	8001-79-4	G/E	>480	G/E	>480	>480	>480
CHLORINE GAS							
CHLOROBENZENE	108-90-7	NT	10	NT	12	16	24
CHLOROFORM	67-66-3	NT	4	NT	8	6	4



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		DEGRADATION	BREAKTHROUGH TIME	DEGRADATION	BREAKTHROUGH TIME	BREAKTHROUGH TIME	BREAKTHROUGH TIME
		22KA58, 22KA59, 22KA60		22KA57		22KA64, 22KA65, 22KA66, 22KA67	22KA68, 22KA69
CHROMIC ACID (50%)	1333-82-0	G/E	>480	G/E	>480	>480	>480
CHROMIUM TRIOXIDE	1333-82-0	G/E	>480	G/E	>480	>480	>480
CITRIC ACID (30%)	77-92-9	G/E	>480	G/E	>480	>480	>480
COOKING OIL		G/E	>480	G/E	>480	>480	>480
CORN OIL		G/E	>480	G/E	>480	>480	>480
CRESOL	1319-77-3	G/E	>480	G/E	>480	>480	>480
CRESYLIC ACID	1319-77-3	G/E	>480	G/E	>480	>480	>480
CYCLOHEXANE	110-82-7	NT	18	NT	38	56	50
CYCLOHEXANOL	108-93-0	G/E	>480	G/E	>480	>480	>480
CYCLOHEXANONE	108-94-1	NT	63	NT	58		
DETERGENT		G/E	>480	G/E	>480	>480	>480
DIACETONE ALCOHOL	123-42-2	G/E	>480	G/E	>480	>480	>480
DIBUTYL PHTHALATE (DBP)	84-74-2	G/E	>480	G/E	>480	>480	>480
DIESEL	77650-28-3	G/E	>480	G/E	>480	>480	>480
DIETHANOLAMINE	111-42-2	G/E	>480	G/E	>480	>480	>480
DIETHYL ETHER (ETHYL ETHER)	60-29-7	NR	4	NR	6	9	7
DIETHYL PHTHALATE			>480				
DIETHYLAMINE	109-89-7	NR	6	NT	7	11	9
DIETHYLENE GLYCOL MONOHEXYL ETHER (HEXYLCARBITOL SOLVENT)	112-59-4	G/E	>480	G/E	>480	>480	>480
DIETHYLENE GLYCOL MONOMETHYL ETHER (METHYLCARBITOL SOLVENT)	111-77-3	G/E	>480	G/E	>480	>480	>480
DI-ISOBUTYL KETONE	108-83-8	G/E	>480	G/E	>480	>480	>480
DIMETHYL SULFATE	77-78-1	NT	157			100	
DIMETHYLACETAMIDE	127-19-5						
DIMETHYL SULPHOXIDE			>480				
DIMETYL FORMAMIDE (DMF)	68-12-2	NR	14	NR	21	39	34
DIOCTYL PHTHALATE [DI(2-ETHYL HEXYL)PHTHALATE] (DOP)	117-81-7	G/E	>480	G/E	>480	>480	>480
DIPROPASOL GLYCOL MONO n-BUTYL ETHER (BUTYL DIPROPASOL SOLVENT) (DIPROPYLENE GLYCOL MONO n-BUTYL ETHER)	29911-28-2	G/E	>480	G/E	>480	>480	>480
DIPROPYLENE GLYCOL MONO n-PROPYL ETHER	29911-27-1	G/E	>480	G/E	>480	>480	>480
EPICHLOROHYDRIN	106-89-8		29		19	18	18
EPOXIDISED SOY BEAN OIL	8013-07-8	G/E	>480	G/E	>480	>480	>480
ETHANOLAMINE	141-43-5	G/E	>480	G/E	>480	>480	>480
ETHOXYTRIGLYCOL (TRIETHYLENE GLYCOL MONO ETHYL ETHER)	112-50-5	G/E	>480	G/E	>480	>480	>480
ETHYL ACETATE	141-78-6	NR	13	NR	13	6	8
ETHYL ALCOHOL (ETHANOL) (90%)	64-17-5		26		53	45	40
ETHYL BUTANOL	97-95-0	G/E	>480	G/E	>480	>480	>480



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		22KA58, 22KA59, 22KA60		22KA57		22KA64, 22KA65, 22KA66, 22KA67	22KA68, 22KA69
ETHYLENE GLYCOL	107-21-1	G/E	>480	G/E	>480	>480	>480
ETHYLENE GLYCOL MONOPROPYL ETHER (PROPYL CELLOSOLVE SOLVENT)	2807-30-9	G/E	>480	G/E	>480	>480	>480
FORMALDEHYDE (37%)	50-00-0	G/E	>480	G/E	>480	>480	>480
FORMIC ACID (90%)	64-18-6	G/E	>480	G/E	>480	>480	>480
FURFURAL	98-01-1		26		40	65	50
GLYCERINE	56-81-5	G/E	>480	G/E	>480	>480	>480
GROUNDNUT OIL (PEANUT OIL)	8002-03-7	G/E	>480	G/E	>480	>480	>480
HEXYLCELLOSOLVE SOLVENT	112-25-4	G/E	>480	G/E	>480	>480	>480
HYDRAZINE HYDRATE (85%)	302-01-2	G/E	>480	G/E	>480	>480	>480
HYDROCHLORIC ACID (10%)	7647-01-0	G/E	>480	G/E	>480	>480	>480
HYDROCHLORIC ACID (30%)	7647-01-0	G/E	>480	G/E	>480	>480	>480
HYDROCHLORIC ACID (37%)	7647-01-0	NT	95	NT	164	>480	>480
HYDROFLUORIC ACID (40%)							
HYDROGEN PEROXIDE	7722-84-1	G/E	>480	G/E	>480	>480	>480
HYDROGEN PEROXIDE (30%)	7722-84-1	G/E	>480	G/E	>480	>480	>480
HYDROQUINONE	123-31-9	G/E	>480	G/E	>480	>480	>480
IODOMETHANE (METHYL IODIDE)	74-88-4	NT	5				
ISOBUTYL ALCOHOL (2-BUTANOL)	78-83-1	NT	41	NT	91		
ISOBUTYL METHYL KETONE (METHYL ISO BUTYL KETONE) (MIBK)	108-10-1	NR	11	NR	22		
ISOPROPYL ALCOHOL (2-PROPANOL)	67-63-0	G	40	G	80		
ISOAMYL ALCOHOL	123-51-3	F	45	G	122		
ISOAMYL ACETATE	628-63-7	NT	18	NT	27		
ISOPARAFFIN H	90622-57-4		227		280		
KEROSENE	8008-20-6	G/E	>480	G/E	>480	>480	>480
KEROSENE (PARAFFIN)		NT	96	NT	119		
LACTIC ACID (85%)	50-21-5	G/E	>480	G/E	>480	>480	>480
MALEIC ACID	110-16-7	G/E	>480	G/E	>480	>480	>480
METHOXYTRIGLYCOL	112-35-6	G/E	>480	G/E	>480	>480	>480
METHYL ACETATE	79-20-9	NR	4	NR	8		
METHYL ACRYLATE	96-33-3	NR	3	NT	10		
METHYL ALCOHOL (METHANOL)	67-56-1	NT	50	NT	31	36	38
METHYL AMINE (40%)	74-89-5		>480		>480	>480	>480
METHYL ETHYL KETONE (2-BUTANONE) (MEK)	78-93-3	NR	4	NR	10		
METHYL CELLOSOLVE SOLVENTS			52				
METHYL METHACRYLATE	80-62-6	NR	4	NR	8		
METHYLENE CHLORIDE (DI CHLORO METHANE)	75-09-2	NR	4	NT	8	5	3
MILK		G/E	>480	G/E	>480	>480	>480
MILK PRODUCTS (BUTTER, ETC.)		G/E	>480	G/E	>480	>480	>480



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						22KA64, 22KA65, 22KA66, 22KA67	22KA68, 22KA69
MONOETHANOLAMINE	141-43-5	G/E	>480	G/E	>480	>480	>480
MORPHOLIN	110-91-8	NT	26	NT	63		
MURIATIC ACID	7647-01-0	G/E	>480	G/E	>480	>480	>480
n,n DIMETHYL ACETAMIDE	127-19-5	NT	14	NT	30		
n-AMYL ALCOHOL	71-41-0		230		121	172	140
NAPHTHA (SHELLSOL A)	64742-95-6		19		38	45	34
n-HEPTANE	142-82-5	NT	21	NT	34	39	39
n-HEXANE	110-54-3	NR	8	NR	15	54	27
NITRIC ACID (10%)	7697-37-2	G/E	>480	G/E	>480	>480	>480
NITRIC ACID (23%)			>480				
NITRIC ACID (65%)	7697-37-2	NT	70	NT	245		
NITRO BENZENE	98-95-3	NT	34	NT	55	103	97
NITRO METHANE	75-52-5	NT	15	NT	16		
N-METHYL-2-PYRROLIDONE	872-50-4		76		86	170	86
n-OCTANOL	111-87-5	G/E	>480	G/E	>480	>480	>480
n-PENTANE	109-66-0	NT	9	NT	12		
OCTANE (PETROL OR GASOLINE)	111-65-9	NT	16	NT	27	40	27
OIL-BASED PAINTS		G/E	>480	G/E	>480	>480	>480
OLEIC ACID	112-80-1	G/E	>480	G/E	>480	>480	>480
OLIVE OIL	8001-25-0	G/E	>480	G/E	>480	>480	>480
ORTHO PHOSPHORIC ACID (85%)	7664-38-2	G/E	>480	G/E	>480	>480	>480
OXALIC ACID	144-62-7	G/E	>480	G/E	>480	>480	>480
PALMITIC ACID		G/E	>480	G/E	>480	>480	>480
PARAFFIN OIL		G/E	96	G/E	119	>480	>480
PERCHLORIC ACID (60%)	7601-90-3	G/E	>480	G/E	>480	>480	>480
PHENOL (76% IN H ₂ O)	108-95-2						
PHENOL (90%)	108-95-2		>480		>480	>480	>480
PHTALIC ACID DIBUTYL ESTER	84-74-2	G/E	>480	G/E	>480	>480	>480
POTASSIUM HYDROXIDE (CAUSTIC POTASH) (SATURATED)	1310-58-3						
POTASSIUM HYDROXIDE (CAUSTIC POTASH) 40%	1310-58-3		>480				
POTASSIUM HYDROXIDE (CAUSTIC POTASH) 45%	1310-58-3	G/E	>480	G/E	>480	>480	>480
POTASSIUM HYDROXIDE (CAUSTIC POTASH) 50%	1310-58-3		>480		>480	>480	>480
PROPETAMPHOS (SAFROTIN) (50% IN ROH)	31218-83-4	G/E	>480	G/E	>480	>480	>480
PROPOXY DIETHYLENE GLYCOL (PROPYL CARBITOL SOLVENT) (DIETHYLENE GLYCOL MONOPROPYL ETHER)	6881-94-3	G/E	>480	G/E	>480	>480	>480
PROPYL ACETATE	109-60-4		9		10	17	16
PROPYL CELLOSOLVE SOLVENT	2807-30-9	G/E	>480	G/E	>480	>480	>480
PROPYLENE GLYCOL MONOBUTYL ETHER (BUTYL PROPASOL SOLVENT)	5131-66-8	G/E	>480	G/E	>480	>480	>480
PETROLEUM ETHER			12				



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		22KA58, 22KA59, 22KA60		22KA57		22KA64, 22KA65, 22KA66, 22KA67	22KA68, 22KA69
PYRIDINE	110-86-1	NR	10	NR	11		
SODIUM HYDROXIDE (CAUSTIC SODA) (40%)	1310-73-2		>480		>480	>480	>480
SODIUM HYPOCHLORITE (6~12%) (BLEACH)	7681-52-9	G/E	>480	G/E	>480	>480	>480
STYRENE	100-42-5	NT	12	NT	22		
SULPHURIC ACID (50%)			>480				
SULPHURIC ACID (30%)	7664-93-9	G/E	>480	G/E	>480	>480	>480
SULPHURIC ACID (47%)	7664-93-9	G/E	>480	G/E	>480	>480	>480
SULPHURIC ACID (CON. 96~98%)	7664-93-9	NT	71	NT	101	160	47
TANNIC ACID (65%)	1401-55-4	G/E	>480	G/E	>480	>480	>480
TERT-BUTYL AMINE	75-64-9	NT	72	NT	164		
TETRACHLOROETHYLENE	127-18-4	P	11	P	20		
Tetrahydrofuran	109-99-9	NT	8	NT	9	16	11
Toluene	108-88-3	NR	13	NR	18	16	11
Toluene Extra Pure	108-88-3						
TRICHLOROETHANE (GENKLENE)	79-00-5	P	14	P	15		
TRICHLOROETHYLENE	79-01-6	NR	5	P	17	5	6
TRICRESYL PHOSPHATE (TCP)	1330-78-5	G/E	>480	G/E	>480	>480	>480
TRIETHANOLAMINE (TEA)	120-71-6	G/E	>480	G/E	>480	>480	>480
TURPENTINE			480	G/E			
TRIXYLENYL PHOSPHATE (TXP)		G/E	>480	G/E	>480	>480	>480
UNLEADED PETROL	111-65-9	NT	16	NT	27	40	54
XYLENE	1330-20-7	NR	20	NR	33	7	16

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: 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.

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.

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.		

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