



# New Pig

Your partner for a clean  
and safe workplace.

**1-800-HOT-HOGS®** (468-4647)

---

## **Chemical Compatibility Guide for: Best® N-Dex® Free Gloves**

### **NOTICE:**

The guide on the following page(s) was provided by the supplier. New Pig Corporation assumes no responsibility, obligation, or liability in conjunction with the use or misuse of the information.

**For additional assistance, please contact New Pig Technical Services at  
1-800-HOT-HOGS® (468-4647).**

---

### **100% Money-Back Guarantee**

If you're not happy with a product, for any reason, we'll refund every penny of your purchase price. That means we'll refund all sales taxes, shipping costs, and any other incidentals - without tacking on a restocking fee or any other surprise charges. You get ALL your money back. Period.

One Pork Avenue, Tipton, PA 16684-0304 • 1-800-HOT HOGS® (468-4647) • Fax: 1-800-621-PIGS (7447)  
Email: [hothogs@newpig.com](mailto:hothogs@newpig.com) • Web: [newpig.com](http://newpig.com)

© New Pig Corporation. All rights reserved.



# N-DEX Free

Chemical resistance testing has shown no statistically significant difference in the protection properties between N-DEX Free gloves and the Original N-DEX 7005 glove. The majority of this data was generated from testing of N-DEX 7005, but applies to Best N-DEX® Free, as well. For heavy chemical exposure, we do not suggest disposable gloves, but rather chemical resistant gloves from our comprehensive chemical resistant glove product line.

Chemical Tested	N-Dex Free 7705PF Gloves							
	Total Immersion Degradation (min)				ASTM F 739 Total Immersion Permeation Breakthrough			
	Rating				MDL	BDT	RATE	EN 374
	5	30	60	240	PPM	Min.	ug/cm2/min	Rating
1 . Acetaldehyde	NR	NR	NR	NR	0.02	NR	NR	0
2 . Acetic Acid 84%	E	P	P	NR	6.00	NR	NR	0
3 . Acetone	NR	NR	NR	NR	0.02	NR	NR	0
4 . Acetonitrile	P	P	P	P	0.02	4	153	0
5 . Acrylonitrile	NR	NR	NR	NR	0.02	NR	NR	0
6 . Ammonium Hydroxide 29%	E	E	E	E	0.08	ND	ND	6
7 . Amyl Acetate	NR	NR	NR	NR	0.02	NR	NR	0
8 . Amyl Alcohol	E	G	G	G	0.02	24	37	1
9 . Benzaldehyde	NR	NR	NR	NR	0.02	NR	NR	0
10 . Benzene	NR	NR	NR	NR	0.02	NR	NR	0
11 . Bromoacetophenone,2 (10% in Acetone)	NT	NT	NT	NT	0.02	2	183	0
12 . Butanol	E	E	G	G	0.02	13	36	1
13 . Butyl Acetate	NR	NR	NR	NR	0.02	NR	NR	0
14 . P-Tert-Butyl Toluene	NT	NT	NT	NT	0.02	11	100	1
15 . Carbon Tetrachloride	F	NR	NR	NR	0.02	NR	NR	0
16 . Cellosolve Acetate	P	NR	NR	NR	0.02	NR	NR	0
17 . Chlorobenzene	NR	NR	NR	NR	0.02	NR	NR	0
18 . Chloroform	NR	NR	NR	NR	0.02	NR	NR	0
19 . Citric Acid	E	E	E	E	---	ND	ND	6
20 . Cresols	P	NR	NR	NR	0.02	NR	NR	0
21 . Cyclohexane	E	E	E	E	0.02	10	98	1
22 . Cyclohexanol	E	E	E	G	0.02	80	20	3
23 . Cyclohexanone	NR	NR	NR	NR	0.02	NR	NR	0
24 . n-Dibutyl Phthalate	G	F	P	NR	0.02	NR	NR	0
25 . o-Dichlorobenzene	NR	NR	NR	NR	0.02	NR	NR	0
26 . 1,2-Dichloroethane	NR	NR	NR	NR	0.02	NR	NR	0
27 . Diesel Fuel	E	E	G	G	0.02	ND	ND	6
28 . Diethanolamine	E	E	E	E	0.02	ND	ND	6
29 . Diethylamine	P	P	P	NR	0.02	NR	NR	0
30 . Di-Isobutyl Ketone	E	E	E	E	0.02	NT	NT	NA
31 . N,N-Dimethylacetamide	NR	NR	NR	NR	0.02	NR	NR	0
32 . Dimethylformamide	NR	NR	NR	NR	0.02	NR	NR	0
33 . Dimethylsulfoxide	E	G	F	P	0.01	23	84	1
34 . 1,4-Dioxane	NR	NR	NR	NR	0.02	NR	NR	0
35 . Ethanol	E	E	E	G	0.02	7	12	0
36 . Ethyl Acetate	NR	NR	NR	NR	0.02	NR	NR	0
37 . Ethyl Benzene	NR	NR	NR	NR	0.02	NR	NR	0
38 . Ethyl Ether	G	G	G	G	0.02	2	495	0
39 . Ethylene Glycol	E	E	E	E	0.02	ND	ND	6
40 . Formaldehyde	E	E	E	E	8.00	ND	ND	6

Chemical Tested	N-Dex Free 7705PF Gloves							
	Total Immersion Degradation (min)				ASTM F 739 Total Immersion Permeation Breakthrough			
	Rating				MDL PPM	BDT Min.	RATE ug/cm2/min	EN 374 Rating
	5	30	60	240				
41 . Formic Acid	G	NR	NR	NR	0.04	NR	NR	0
42 . Furfural	P	NR	NR	NR	0.02	NR	NR	0
43 . Gasoline	E	G	P	NR	0.02	NR	NR	0
44 . Glutaraldehyde 50%	E	G	G	G	0.02	ND	ND	6
45 . Glyphosate"RoundUp"	E	G	G	G	0.02	ND	ND	6
46 . Heptane	E	E	E	E	0.02	NR	NR	0
47 . Hexane	E	E	E	E	0.02	11	8	1
48 . Hydraulic Fluid	E	E	E	E	N.A.	NT	NT	NA
49 . Hydrochloric Acid 37%	E	E	E	E	0.70	ND	ND	6
50 . Iso Octane	E	E	E	G	0.02	120	1.5	4
51 . Isobutanol	E	F	P	P	0.02	NR	NR	0
52 . Kerosene	E	E	E	E	0.02	NT	NT	NA
53 . Lactic Acid 85%	E	E	E	E	0.04	ND	ND	6
54 . Methanol	E	G	G	F	0.02	NR	NR	0
55 . Methyl Ethyl Ketone	NR	NR	NR	NR	0.02	NR	NR	0
56 . Methyl Isobutyl Ketone	NR	NR	NR	NR	0.02	NR	NR	0
57 . Methyl Methacrylate	NR	NR	NR	NR	0.02	NR	NR	0
58 . Methylamine 40%	E	E	E	G	0.02	NT	NT	NA
59 . Methylene Chloride	NR	NR	NR	NR	0.02	NR	NR	0
60 . N-Methylpyrrolidone	NR	NR	NR	NR	0.02	NR	NR	0
61 . Methyl-Tert Butyl Ether	G	P	P	P	0.02	NR	NR	0
62 . Mineral Spirits	E	E	G	F	0.02	NT	NT	NA
63 . Monoethanolamine	E	E	E	E	0.04	ND	ND	6
64 . Morpholine	NR	NR	NR	NR	0.02	NR	NR	0
65 . Nitric Acid 70%	G	P	NR	NR	4.00	NR	NR	0
66 . Nitrobenzene	NR	NR	NR	NR	0.02	NR	NR	0
67 . Nitromethane	F	P	P	P	0.02	NR	NR	0
68 . Nitropropane	NR	NR	NR	NR	0.02	NR	NR	0
69 . n-Octanol	E	E	E	G	0.02	ND	ND	6
70 . Oleic Acid 98%	E	E	E	G	---	ND	ND	6
71 . Pentane	E	E	E	E	0.02	4	88	0
72 . Perchloroethylene	F	NR	NR	NR	0.02	6	353	0
73 . Petroleum Ether	E	E	E	E	0.02	6	17	0
74 . o-Phosphoric Acid 85%	E	E	E	E	0.004	ND	ND	6
75 . Potassium Hydroxide 45%	E	E	E	E	0.40	ND	ND	6
76 . 2-Propanol	E	E	E	E	0.02	15	29	1
77 . n-Propanol	G	F	P	P	0.02	7	42	0
78 . Propylene Oxide	NR	NR	NR	NR	0.02	NR	NR	0
78 . Rotella Multigrade 15W40 Motor Oil	E	E	E	E	0.02	ND	ND	6
79 . Shell Diala Oil AX Base Oil	E	E	E	E	0.02	ND	ND	6
80 . Shell HVI 100 Neutral MQ Base Oil	E	E	E	E	0.02	ND	ND	6
81 . Shell Turbo T 68 Hydraulic Oil	E	E	E	E	0.02	ND	ND	6
82 . Shellwax 100	E	E	E	E	0.02	ND	ND	6
83 . Sodium Hydroxide 50%	E	E	E	E	0.02	ND	ND	6
84 . Stoddard Solvent	E	E	E	E	0.02	126	.3	4
85 . Sulfuric Acid 97%	G	P	NR	NR	0.05	NR	NR	0
86 . Tannic Acid	E	E	E	E	---	ND	ND	6
87 . Tetrahydrofuran	NR	NR	NR	NR	0.02	NR	NR	0
88 . Toluene	NR	NR	NR	NR	0.02	NR	NR	0

Chemical Tested	N-Dex Free 7705PF Gloves							
	Total Immersion Degradation (min)				ASTM F 739 Total Immersion Permeation Breakthrough			
	Rating				MDL PPM	BDT Min.	RATE ug/cm <sup>2</sup> /min	EN 374 Rating
	5	30	60	240				
89 . 1,2,4-Trichlorobenzene	NR	NR	NR	NR	0.02	NR	NR	0
90 . 1,1,1-Trichloroethane	NR	NR	NR	NR	0.02	NR	NR	0
91 . Trichloroethylene	NR	NR	NR	NR	0.02	NR	NR	0
92 . Tricresyl Phosphate	E	E	G	P	0.02	ND	ND	6
93 . Triethanolamine	E	E	E	E	0.02	ND	ND	6
94 . Turpentine	E	E	E	G	0.02	ND	ND	6
95 . Xylene	NR	NR	NR	NR	0.02	NR	NR	0

### Degradation, Permeation Testing and CPC Rating of Best Gloves

#### Degradation

Degradation is a physical change in a glove after chemical exposure. Typical effects may be swelling, wrinkling, deterioration or delamination. There are no accepted standards for measuring degradation. Best degradation testing is based on a protocol considered by the ASTM F-23 Protective Clothing Committee. One side of the glove material is exposed to the test chemical for four hours. The percent weight change was measured gravimetrically at four time intervals: 5,30, 60, and 240 minutes.

The ratings were assigned as follows:

E = Excellent for a 0 - 10% weight change.

G = Good for an 11 - 20% weight change.

F = Fair for a 21 - 30% weight change.

P = Poor for a 31 - 50% weight change.

NR = Not Recommended for more than 50% weight change.

N-DEX Degradation and Permeation Guide (Page # 5)

#### Permeation

Permeation: ASTM F 739-91 test method for permeation of chemicals through chemical protective clothing under conditions of total immersion was followed. The units for reporting test results specified by ASTM F 739 include:

1. Minimum Detection Limit (MDL in ppm): the smallest amount of chemical that is detectable using the analytical system that is being employed to measure the permeation of the chemical being tested.
2. Breakthrough Detection Time (BDT): is the time in minutes after initial exposure of the glove to the test chemical to the time when the chemical is first detected on the inside of the glove.
3. Permeation Rate: is the steady state rate of a chemical in micrograms / minute permeating an area (cm<sup>2</sup>) of glove material.

The units of ug/cm<sup>2</sup>/min are clearly specified by ASTM F 739 for reporting permeation rates at steady state.

4. Code used for reporting data: The code used for these test results is as follows:

ND = No detectable breakthrough of chemical after eight hours of total immersion.

NR = Not Recommended because of severe degradation.

NA = Not applicable.

NT = Not Tested.

Blank spaces occur where test data is not yet completed.

EN 374 Rating were devised by the European Normalization Committee and are ratings based on the breakthrough time in minutes where:

Breakthrough Time in Minutes	Rating
Less than 10 minutes	0
10 -30 minutes	1
30-60 minutes	2
60-120 minutes	3
120-240 minutes	4
Greater than 240 minutes	5
Greater than 480 minutes	6

## EN 374 RATINGS

Rating	Description
0	10 minutes breakthrough time; Dangerous selection.
1	> 10 minutes breakthrough time; Very poor; Splashes only; Change quickly.
2	> 30 minutes breakthrough time; Poor choice; Change quickly when exposed.
3	> 60 minutes breakthrough time; Sometimes satisfactory; Change soon after exposure.
4	> 120 minutes breakthrough time; Good selection; Change after two hours.
5	> 240 minutes breakthrough time; Next best selection; Change after four hours.
6	> 480 minutes breakthrough time; Safest best selection with high rating attainable.

## Cut Resistance Ratings

Rating	Description
0	< 200 grams of weight needed to cut through material with 25 mm of blade travel
1	> 200 grams of weight needed to cut through material with 25 mm of blade travel
2	> 500 grams of weight needed to cut through material with 25 mm of blade travel
3	> 1000 grams of weight needed to cut through material with 25 mm of blade travel
4	> 1500 grams of weight needed to cut through material with 25 mm of blade travel
5	> 3000 grams of weight needed to cut through material with 25 mm of blade travel

Degradation is the physical change in a glove after chemical exposure. Typical effects may be swelling, wrinkling, deterioration, or delamination. There are no accepted standards for measuring degradation. Best degradation testing is based on a protocol considered by the ASTM F23 Protective Clothing Committee. One side of the glove material is exposed to the test chemical for four hours. The percent weight change is measured at four time intervals: 5, 30, 60 and 240 minutes. The gravimetric ratings are ranked as shown below.

Key	Rating	Weight Change
E	Excellent	0-10%
G	Good	11-20%
F	Fair	21-30%
P	Poor	31-50%
NR	Not Recommended	Above 50%

Where degradation rating is poor (P) or not recommended (NR) after 60 minutes, the material is not tested for permeation resistance. Permeation results are listed as not recommended (NR) because of severe degradation. WARNING: Weight change is only our measure of degradation and does not account for certain physical changes such as hardening of PVC.