

**NEW!!!**

# Quantumwear® C

## Quantumwear® C Higher Splash & Particle Protection Apparel

Quantumwear® C was developed to give workers a more comfortable and functional alternative while working:

- Nuclear D/D
- Abatement
- Construction
- Manufacturing
- Cleaning
- Remediation
- Demolition

Item	Size	Per Case
GX1677 Lrg	L	25
GX1677 XL	XL	25
GX1677 2XL	2X	25
GX1677 3XL	3X	25
GX1677 4XL	4X	25
GX1677 5XL	5X	25
GX1677 6XL	6X	25

Larger than ANSI Sizes for Comfort and Fit

Special Patent Pending Q-Gard Quantumwear® Flap for adjustable respiratory fit.

Fully Bound then Taped Seams—to help prevent most penetration of solids and liquids

PSA backed storm flap helps keep out most splash

Elastic Back

Higher Stitch Count for Stronger Seams

Roomier and Stronger Arm and Crotch for Comfort, Movement, and Less Tear-outs

Larger Foot Bed and Ankle for Less Tear-outs while donning and doffing

Fully taped under foot bed to help leak protection



**Q U E S T**  
Environmental & Safety Products, Inc.

G/O Corporation is a distributor for Quest Environmental. Contact G/O at 800-933-8501, [www.gocorp.com](http://www.gocorp.com), or email [sales@gocorp.com](mailto:sales@gocorp.com)

# NEW Q-Gard Quantumwear® C

## Permeation Resistance (ASTM F739-07) Test Comparisons

Chemical Challenge	CAS #	Dupont Tychem® QC	Quantumwear "C"	Dupont Tychem® QC	Quantumwear "C"
		Average Normalized Breakthrough Time (min)	Average Normalized Breakthrough Time (min)	Average Steady State Permeation (µg/cm <sup>2</sup> /min)	Average Steady State Permeation (µg/cm <sup>2</sup> /min)
Ammonia, anhydrous	7664-41-7	Immediate	Immediate	3.1	0.74
Dichloromethane	75-09-2	Immediate	Immediate	>50	0.23
Dimethylformamide	68-12-2	Immediate	ND	0.72	N/A
50% Sodium Hydroxide	1310-73-2	ND	ND	N/A	N/A
93% Sulfuric Acid	7664-93-9	ND	ND	N/A	N/A
Toluene	108-88-3	Immediate	Immediate	503	0.12
Acetone	67-64-1	Immediate	Immediate	10	0.15
Acetonitrile	75-05-8	Immediate	ND	16	N/A
Carbon Disulfide	75-15-0	Immediate	Immediate	High	0.55
Diethylamine	109-89-7	Immediate	Immediate	64	0.51
Ethyl Acetate	141-78-6	Immediate	Immediate	13	0.4
n-Hexane	110-54-3	Immediate	Immediate	High	0.37
Methanol	67-56-1	Immediate	ND	2.2	N/A
Nitrobenzene	98-95-3	Immediate	Immediate	18	0.61
Tetrachloroethylene	127-18-4	Immediate	Immediate	High	1.38
Tetrahydrofuran	109-99-9	Immediate	Immediate	183	0.44
1,3-Butadiene	106-99-0	Immediate	Immediate	12	N/A
Chlorine	7782-50-5	Immediate	Immediate	>50	0.23
Ethylene Oxide	75-21-8	Immediate	Immediate	167	N/A
Hydrogen Chloride	7647-01-0	Immediate	Immediate	9.3	0.64
Methyl Chloride	74-87-3	Immediate	Immediate	0.23	N/A

**Note:** "Immediate" means less than 10 minutes. "ND" means none detected during the 480 minute test.

"N/A" means not attained during the 480 minute test

 Indicates better performance

***"Cool, Comfortable, Safe"***



# NEW Q-Gard Quantumwear® C

## Chemical Permeation Resistance and Penetration Test Comparisons

Chemical Challenge	CAS #	Permeation Resistance ASTM F739				Chemical Penetration ASTM F903	
		Kleenguard A70	Quantumwear "C"	Kleenguard A70	Quantumwear "C"	Kleenguard A70	Quantumwear "C"
		Average Normalized Breakthrough Time (min)	Average Normalized Breakthrough Time (min)	Average Steady State Permeation ( $\mu\text{g}/\text{cm}^2/\text{min}$ )	Average Steady State Permeation ( $\mu\text{g}/\text{cm}^2/\text{min}$ )	Final Results	Final Results
Dichloromethane	75-09-2	Immediate	Immediate	85.1	0.23	Pass	Pass
Dimethylformamide	68-12-2	Immediate	ND	2.54	N/A	Pass	Pass
50% Sodium Hydroxide	1310-73-2	ND	ND	N/A	N/A	Pass	Pass
93% Sulfuric Acid	7664-93-9	ND	ND	N/A	N/A	Pass	Pass
Toluene	108-88-3	Immediate	Immediate	High	0.12	Pass	Pass
Acetone	67-64-1	Immediate	Immediate	7.9	0.15	Pass	Pass
Acetonitrile	75-05-8	Immediate	ND	8.97	N/A	Pass	Pass
Carbon Disulfide	75-15-0	Immediate	Immediate	76.3	0.55	Pass	Pass
Diethylamine	109-89-7	Immediate	Immediate	High	0.51	Pass	Fail
Ethyl Acetate	141-78-6	Immediate	Immediate	40.3	0.4	Pass	Pass
n-Hexane	110-54-3	Immediate	Immediate	High	0.37	Pass	Pass
Methanol	67-56-1	Immediate	ND	1.71	N/A	Pass	Pass
Nitric Acid	7697-37-2	193	20	1.77	316	Pass	Pass
Nitrobenzene	98-95-3	Immediate	Immediate	97.4	0.61	Pass	Pass
Tetrachloroethylene	127-18-4	Immediate	Immediate	High	1.38	Pass	Pass
Tetrahydrofuran	109-99-9	Immediate	Immediate	32.8	0.44	Pass	Pass

**Note:** "Immediate" means less than 10 minutes. "ND" means none detected during the 480 minute test.

"N/A" means not attained during the 480 minute test

Indicates better performance

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# MNA

MILLER NELSON ANALYTICAL, LLC

## PENETRATION TEST REPORT

ASTM F903

MATERIAL NAME: 82GSM CHEM FABRIC CHALLENGE CHEMICAL: HYDROFLUORIC  
FABRIC LOG OR LOT NO.: YELLOW SUIT MATERIAL ACID  
MANUFACTURER: XROW Q-GARD QUANTUMWEAR C RUN NO: PERM 92/8542

TEST RESULTS	TEST 1	TEST 2	TEST 3	AVERAGE
PASS/FAIL	PASS	PASS	PASS	PASS
THICKNESS, MILS	11.5	12.0	13.0	12.2
TEMPERATURE	27	27	27	27

TEST DATE: 3-10-14  
PRIOR CONDITIONING: NONE  
CAS NO: 7664-39-3  
CHEMICAL SOURCE: ALDRICH  
CHEMICAL STATE: LIQUID  
CHEMICAL CONTACT TYPE: CONTINUOUS  
TEST PROCEDURE: D  
CONCENTRATION: 48%  
TEST DURATION: 60 MIN

ANALYTICAL METHOD: VISUAL  
LEAK INDICATOR: FILTER PAPER  
METHOD MODIFICATION: NONE  
COMMENTS: NO CHANGE POST TESTING  
NOTE: AMBIENT PRESSURE FOR 60 MIN

CLIENT: ~~XRF~~  
TERRY OLDHAM

ANALYST Christopher Priante 3-17-14 a.c.  
CHRISTOPHER J. PRIANTE DATE

Stephen J. Priante 3-17-14  
STEPHEN J. PRIANTE DATE

This data is derived from tests performed in accordance with ASTM F903. These tests were performed under laboratory conditions and not under actual usage conditions. Miller Nelson Analytical LLC makes no warranties concerning protection by this material and assumes no liability for use of this material with the chemicals tested. The user should determine the applicability of the conditions when assessing suitability of material for actual anticipated exposure.

### PERMEATION TESTING SERVICES

TEL – 951-245-7755 FAX – 951-245-0898  
E-MAIL – [stevep@mnapermeations.com](mailto:stevep@mnapermeations.com)  
31951 Corydon Road, Suite #120, Lake Elsinore, CA 92530  
WEB SITE – <http://www.mnapermeations.com>



# MNA

MILLER NELSON ANALYTICAL, LLC

## PENETRATION TEST REPORT


ASTM F903


MATERIAL NAME: 82GSM CHEM FABRIC CHALLENGE CHEMICAL: POTASSIUM  
FABRIC LOG OR LOT NO.: YELLOW SUIT MATERIAL HYDROXIDE  
MANUFACTURER: ~~XXXX~~ Q-GARD QUANTUMWEAR C RUN NO: PERM 92/8543

TEST RESULTS	TEST 1	TEST 2	TEST 3	AVERAGE
PASS/FAIL	PASS	PASS	PASS	PASS
THICKNESS, MILS	10.5	10.5	12.0	11.0
TEMPERATURE	27	27	27	27

TEST DATE: 3-11-14 ANALYTICAL METHOD: VISUAL  
PRIOR CONDITIONING: NONE LEAK INDICATOR: FILTER PAPER  
CAS NO: 1310-58-3 METHOD MODIFICATION: NONE  
CHEMICAL SOURCE: ALDRICH COMMENTS: NO CHANGE POST TESTING  
CHEMICAL STATE: LIQUID  
CHEMICAL CONTACT TYPE: CONTINUOUS  
TEST PROCEDURE: D NOTE: AMBIENT PRESSURE FOR 60 MIN  
CONCENTRATION: 45%  
TEST DURATION: 60 MIN

CLIENT: ~~XXXX~~  
TERRY OLDHAM

ANALYST  3-17-14 a.c.  
CHRISTOPHER J. PRIANTE DATE

 3-17-14  
STEPHEN J. PRIANTE DATE

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# MNA

## MILLER NELSON ANALYTICAL, LLC

### PERMEATION TEST REPORT

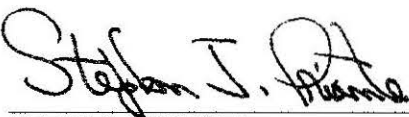
ASTM F 739-2012 (NORMALIZED)

MATERIAL NAME: 82GSM CHEM FABRIC CHALLENGE CHEMICAL: HYDROFLUORIC  
FABRIC LOG OR LOT NO.: YELLOW SUIT MATERIAL ACID  
MANUFACTURER: ~~XXX~~ Q-GARD QUANTUMWEAR C RUN NO: PERM92/8544

TEST RESULTS	TEST 1	TEST 2	TEST 3	AVERAGE
NORMALIZED (0.1 UG/SQ CM/MIN)	>480	>480	>480	>480
BREAKTHROUGH TIME, MIN				
PERMEATION RATE STEADY STATE MAXIMUM, UG/SQ CM/ MIN	ND	ND	ND	ND
THICKNESS, MILS	11.5	12.5	13.0	12.3
WEIGHT, OZ/SQ YD	2.6	2.6	2.6	2.6

TEST DATE: 3-3-14 ANALYTICAL METHOD: ELECTROCHEMICAL  
PRIOR CONDITIONING: NONE COLLECTION SYSTEM: OPEN LOOP  
CAS NO: 7664-39-3 COLLECTION MEDIUM VOLUME: NA  
CHEMICAL SOURCE: ALDRICH CHEMICAL STATE: LIQUID  
CONCENTRATION: 48.0 % CHEMICAL CONTACT TYPE: CONTINUOUS  
SAMPLING FREQUENCY: CONTINUOUS COLLECTION MEDIUM: AIR  
MINIMUM DETECTION LIMIT: 0.02 PPM POST TEST CONDITON: NO CHANGE  
MINIMUM DETECTABLE RATE: 0.0201 UG/SQ CM/MIN POST TESTING  
TEMPERATURE: 27 °C  
TEST DURATION: 8 HOURS  
METHOD MODIFICATION: NONE CLIENT: ~~XXXX~~  
SPECIMEN AREA EXPOSED: 20.3 SQ CM CONTACT: TERRY OLDHAM  
FLOW RATE 1000 ML/MIN

ANALYST  3-17-14  
CHRISTOPHER J. PRIANTE DATE

 3-17-14  
STEPHEN J. PRIANTE DATE

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MILLER NELSON ANALYTICAL, LLC

## PERMEATION TEST REPORT

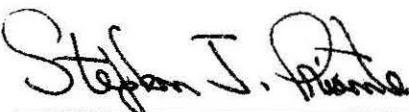
ASTM F739-12

MATERIAL NAME: 82GSM CHEM FABRIC CHALLENGE CHEMICAL: POTASSIUM  
FABRIC LOG OR LOT NO.: YELLOW SUIT MATERIAL HYDROXIDE  
MANUFACTURER: ~~RSS~~ Q-GARD QUANTUMWEAR C RUN NO: PERM92/8545

TEST RESULTS	TEST 1	TEST 2	TEST 3	AVERAGE
NORMALIZED (0.1 UG/SQ CM/MIN)	>480	>480	>480	>480
BREAKTHROUGH TIME, MIN				
PERMEATION RATE STEADY STATE MAXIMUM, UG/SQ CM/MIN	ND	ND	ND	ND
THICKNESS, MILS	11.0	13.0	14.5	12.8
WEIGHT, OZ/SQ YD	2.4	2.5	2.6	2.5

TEST DATE: 3-6-14 ANALYTICAL METHOD: CONDUCTIVITY  
PRIOR CONDITIONING: NONE COLLECTION SYSTEM: OPEN LOOP  
CAS NO: 1310-58-3 COLLECTION MEDIUM VOLUME: NA  
CHEMICAL SOURCE: ALDRICH CHEMICAL STATE: LIQUID  
CONCENTRATION: 45 % CHEMICAL CONTACT TYPE: CONTINUOUS  
SAMPLING FREQUENCY: CONTINUOUS COLLECTION MEDIUM: DISTILLED WATER  
MINIMUM DETECTION LIMIT: 0.025 PPM (UG/G) POST TEST CONDITON: NO CHANGE  
MINIMUM DETECTABLE RATE: 0.023 UG/SQ CM/MIN  
TEMPERATURE: 27 °C  
TEST DURATION: 8 HOURS  
METHOD MODIFICATION: NONE CLIENT: XSH  
SPECIMEN AREA EXPOSED: 20.3 SQ. CM CONTACT: TERRY OLDHAM  
FLOW RATE: 8 ML/MIN

ANALYST  3-17-14 q.c.  
CHRISTOPHER J. PRIANTE DATE

 3-17-14  
STEPHEN J. PRIANTE DATE

This data is derived from tests performed in accordance with ASTM F739-12. These tests were performed under laboratory conditions and not under actual usage conditions. Miller Nelson Analytical, LLC. makes no warranties concerning protection by this material and assumes no liability for use of this material with the chemicals tested. The user should determine the applicability of the conditions when assessing suitability of material for actual anticipated exposure.

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