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File Help	
Import Data View Graph Modify Settings Save Print	
Import Data       Yiew Graph       Modify Settings       Save       Print         Choice of Variable <ul> <li>* All active fields are required data fields unless noted as optional</li> <li>Manually Select Data Columns</li> <li>Choose System Type</li> <li>Open Loop System (OL)</li> <li>Analyzer Response Format</li> <li>© Constant Flow Rate of Fresh Collection Medium (F in ASTM F 739):</li> <li>Option 2: Use Concentration (in</li> <li>Option 3: Use Other Analyzer</li> <li>Output Reading</li> </ul> <ul> <li>Analyzer Output:</li> <li>Column</li> <li>Time:</li> <li>Column</li> <li>Flow Rate (optional)</li> <li>Column</li> <li>Valume Removed (Vs.in ASTM F 739):</li> </ul>	
OK     Clear     Cancel       Time Format     Sample Volume IS replaced, enter Volume Replaced (Vs in ASTM F 739)       Time in Minutes     Ninimum detectable mass permeated:       YYYY/MM/DD HH:MM:SS     Minimum detectable mass permeated:       MM/DD/YYYY HH:MM:SS ##     Cancel	\$



Permeation Calculator		
Import Data View Graph Modify Sett	tings Save Print	-
Data Input         * All active fields are required data fields         Swatch Exposure Size (for A in ASTM F 739)         Diameter       1.00         Diameter       1.00         Area:       5.07         Specimen Weight       1.00         1.00       © grams	Cumulative Permeation vs Time Cumulative Permeation (µg/cm²)	
Cumulative Permeation for: 60 min Cumulative Permeation Mass target: 150 µg/cm^2 Enter times Ti-1: 0.00 and Ti: 120.83 (in Minutes) for Average Permeation Rate	0 Time (Minutes) View Data Graph	
Back	Cancel	~



## Additional Data Input

* All fields are optional data fields (values entered here wi	ill not affect the results)
Report Title: Neoprene Against Acetone	Project Number: PR-1234
Date: 3/10/2008 MM/DD/YYYY	Operator: Jane Doe
Material Type (Manufacture/Product); Neoprene Average Material Thickness (mm): 0.685	Experiment Setting Instrument Type (e.g., MIRAN IR, GC, etc.):
Chemical Information:	Instrument Settings: Wavelength 8.5 µm Pathlength 20.25 meters
C Gas	Collection Medium: (e.g., N2, He, or air)
CAS #: 67-64-1 Manufacturer: FisherChemicals	Instrument ID Number: CDC 1236
Lot/Batch #: 034404 Expiration Date: May 30, 2010	Pump ID Number: Wr-156p
	Data Sampling Inteval (second): 3
Comments: This is to compare decontamination methods.	Nominal Test Temperature: 23.5 ° ⊂
	Temperature Range: 22.1 to 23.2 ° ⊂
Back Ca	ancel Finish

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	Import Data View Graph Modify Settings Save Print	
	Report Title: Neoprene Against Acetone	
	Project Number: PR-1234	
	Experiment type: Closed Loop, Discrete Sampling, Volume Replaced.	
	Results based on NIOSH's Permeation Calculator Version 2.4.1	
	Breakthrough Time Standardized Breakthrough Time (permeation rate at 0.10 μg/(cm²*min)): 21.1 min Breakthrough Detection Time (BDT): 34.0 min Normalized Breakthrough Time (permeation mass at 2.5 μg/cm²): 40.5 min Minimum Breakthrough Detection Time (permeation rate at 0.01 μg/(cm²*min)): 18.5 min	
	Steady-State Permeation Rate (SSPR) SSPR: 2.92 μg/(cm²*min) Correlation Factor (R²) in the steady-state region from 93.0 to 108 min: 0.998340	
	Cumulative Permeation Elapsed Time for Cumulative Permeation Mass of 150 μg/cm²: 97.9 minutes Cumulative Permeation for 60 minutes: 40.2 μg/cm² Average Permeation Rate from 0.00 to 120.00 min: 1.75 μg/(cm²*min)	
	Operator: Jane Doe Date: 3/10/2008 -Data Filename- Filename: Data File 18.xls	
	Experiment Information	
	Test Duration: 2.00 hours	

Import Data Modify Setting Wew Results (aph)       Neoprene Against Acetone         Swe       PR-1234         Swe       PR-1234         Exit       Closed Loop, Discrete Sampling, Volume Replaced.        Results based on NIOSH's Permeation Calculator Version 2.4.1         Breakthrough Time Standardized Breakthrough Time (permeation rate at 0.10 µg/(cm <sup>2+</sup> min)): 21.1 min Breakthrough Detection Time (BDT): 34.0 min Normalized Breakthrough Detection Time (BDT): 34.0 min Normalized Breakthrough Detection Time (permeation rate at 0.01 µg/(cm <sup>2+</sup> min)): 18.5 min         Steady-State Permeation Rate (SSPR) SSPR: 2.92 µg/(cm <sup>2+</sup> min) Correlation Factor (R <sup>2</sup> ) in the steady-state region from 93.0 to 108 min: 0.998340         Cumulative Permeation Elapsed Time for Cumulative Permeation Mass of 150 µg/cm <sup>2</sup> . 97.9 minutes Cumulative Permeation Rate from 0.00 to 120.00 min: 1.75 µg/(cm <sup>3+</sup> min)         Operator: Jane Doe Date: 310/2008 -Data Filename- Filename: Data File 18.xls        Experiment Information Test Duration: 2.00 hours	File Help				
Modry Setting*         New Reads Graph         Seve         Print         Ext         Closed Loop, Discrete Sampling, Volume Replaced.        Results based on NIOSH's Permeation Calculator Version 2.4.1         Breakthrough Time         Standardized Breakthrough Time (permeation rate at 0.10 µg/(cm²*min)): 21.1 min         Breakthrough Detection Time (BDT): 34.0 min         Normalized Breakthrough Time (permeation rate at 0.10 µg/(cm²*min)): 18.5 min         Steady-State Permeation Rate (SSPR)         SSPR: 2.92 µg/(cm²min)         Correlation Facter (R*) in the steady-state region from 93.0 to 108 min: 0.998340         Cumulative Permeation rate from 0.00 to 120.00 min: 1.75 µg/(cm²*min)         Operator: Jane Doe         Data: 3/10/2008         -Data Filename-         Filename: Data File 18.xis        Experiment Information         Test Duration: 2.00 hours	Import Data	View Graph Modify Settings Save Print			
Save min       PR-1234         Exit       Closed Loop, Discrete Sampling, Volume Replaced.        Results based on NIOSH's Permeation Calculator Version 2.4.1         Breakthrough Time         Standardized Breakthrough Time (permeation rate at 0.10 µg/(cm*min)): 21.1 min         Breakthrough Detection Time (portmeation rate at 0.10 µg/(cm*min)): 11.1 min         Breakthrough Detection Time (permeation rate at 0.01 µg/(cm*min)): 18.5 min         Normalized Breakthrough Time (permeation rate at 0.01 µg/(cm*min)): 18.5 min         Steady-State Permeation Rate (SSPR)         SSPR: 2.92 µg/(cm*min)         Correlation Factor (R*) in the steady-state region from 93.0 to 108 min: 0.998340         Cumulative Permeation rate from 0.00 to 120.00 min: 1.75 µg/(cm*min)         Operator: Jane Doe         Data: Filename-         Filename-         Eilename-         Filename-         Filen	Nodiry Setting	Neoprene Against Acetone	^		
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	Report Title: Neoprene Against Acetone	^
	Project Number: PR-1234	
	Experiment type: Closed Loop, Discrete Sampling, Volume Replaced.	
	Results based on NIOSH's Permeation Calculator Version 2.4.1	
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	Operator: Jane Doe Date: 3/10/2008 -Data Filename- Filename: Data File 18.xls	
	Experiment Information	
	Test Duration: 2.00 hours	~

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Import Data View Graph Modify Settings Save Print	
Report Title: Neoprene Against Acetone	^
Choice of Variable	
* All active fields are required data fields unless noted as optional Manually Select Data Columns Analyzer Response Format © Option 1: Use Concentration (in µg/L) © Option 2: Use Concentration (in ppm) © Option 3: Use Other Analyzer Output Reading Option 3: Use Other Analyzer Output Reading © Variable Flow Rate of Fresh Collection Medium (F.in ASTM F.739): C Constant Flow Rate of Medium (Vt in ASTM F.739): Solution Use Other Analyzer © Variable Flow Rate. Minimum detectable permeation rate: Solution Use Other Collection Medium (Vt in ASTM F.739): Sole Loop System (CL) Total Volume of the Collection Medium (Vt in ASTM F.739): Sole Discrete Sampling © Discrete Sampling © Sample Volume NOT replaced, enter Volume Removed (Vs in ASTM F.739)	
Time Format	
Operator: Jane Doe Date: 3/10/2008 -Data Filename- Filename: Data File 18.xls	
Experiment Information Test Duration: 2.00 hours	

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Operator: Jane Doe       Print range         Date: 3/10/2008       Image         -Data Filename-       Image         Filename: Data File 18.xls       Image         Image       Image         Ima				
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Test Duration: 2.00 hours				

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Corre	elation Factor (R²) in the steady-state region from 93.0 to 108 min: 0.998340	
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Operator: Jane	Doe	
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Report Title: Neoprene Against Acetone	^
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Operator: Jane Doe	
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File Help		
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Exit	Closed Loop, Discrete Sampling, Volume Replaced.	
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Cumulative Perm Elapse Cumul Average	neation ed Time for Cumulative Permeation Mass of 150 μg/cm²: 97.9 minutes lative Permeation for 60 minutes: 40.2 μg/cm² ge Permeation Rate from 0.00 to 120.00 min: 1.75 μg/(cm²*min)	
Operator: Jane I Date: 3/10/2008 -Data Filename- Filena	Doe me: Data File 18.xls	
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	Import Data View Graph Modify Settings Save Print
	Report Title: Neoprene Against Acetone
	Project Number: PR-1234
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	Breakthrough Time Standardized Breakthrough Time (permeation rate at 0.10 µg/(cm²*min)): 21.1 min Breakthrough Detection Time (BDT): 34.0 min Normalized Breakthrough Time (permeation mass at 2.5 µg/cm²): 40.5 min Minimum Breakthrough Detection Time (permeation rate at 0.01 µg/(cm²*min)): 18.5 min
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	Operator: Jane Doe Date: 3/10/2008 -Data Filename- Filename: Data File 18.xls
	Experiment Information
	Test Duration: 2.00 hours

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Operator: Jane I Date: 3/10/2008 -Data Filename- Filena	Doe 	
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1	🞽 🖌 👌 🗇 🕯	🚨 - 🔊 - Σ -	🗵 🛄 80% 🔹 🕡 🍟 MS Sans Serif 🔹 10 🔹 🖪 .	ℤ型 ≣≣≣≣ \$%,	譯 🗉 • 🧆 • 🛕 • 📲
	F21 🗸	f <sub>x</sub>			
	A	В	С	D	E F 💳
1	Report Title:	Neoprene Against Acetone	Results based on NIDSH Permeation Calculator		Version 2-4-1
2					
3	Operator:	Jane Doe			
4	Date:	3/10/2008			
5	Data Filename:	Data File 18.xls			
6	Project Number:	PR-1234			
7			Standardized Breakthrough Time (permeation rate at 0.10 µg/(cm²*min)):	21.1	min
8	Distor	×	Breakthrough Detection Time (BDT):	34	min
9	Cumulative Permeation (µg/on*)		Normalized Breakthrough Time (permeation mass at 2.5 µg/cm²):	40.5	min
10	240		Minimum Breakthrough Detection Time (permeation rate at 0.01 µg/(cm <sup>2</sup> *min)):	18.5	min
11	150		Steady-State Permeation Rate (SSPR):	2.92	μg/(cm²*min)
12	150		Correlation Factor (R <sup>2</sup> ) in the Steady-State Region:	0.99834	
13	100		Start Time in the Steady-State Region:	93	min
14			End Time in the Steady-State Region:	108	min
15	56	/	Elapsed Lime for Cumulative Permeation Mass of 150 µg/cm <sup>2</sup> :	97.5	minutes
16	0		Lumulative Permeation for 60 minutes:	40.2	μg/cm <sup>2</sup>
17	12 24 36 48 Test ()	60 72 84 36 108 120	Average Permeation Rate from 0.00 to 120.00 minutes:	1.75	µg/(cm²min)
18	Shew Graph Close W	ndaw hint Graph			
20	Experiment Information				
21			Test Duration:	2	hours
22		Material	Manufacturer & Product:	Neoprene	
23			Average Thickness:	0.685	mm
24			Exposure Area:	5.07	cm <sup>2</sup>
25			Weight Per Unit Area of Specimen:	1970	g/m²
26		Test Chemical	Physical State:	Liquid	
27			Test Chemical:	Acetone, 99.5% min	
28			CAS #:	67-64-1	
29			Manufacturer:	FisherChemicals	
30			Lot/Batch #:	034404	
31			Expiration Date:	May 30, 2010	
32		Temperature	Nominal Test:	23.5 degrees Celsius	
33			Range:	22.1 to 23.2 degrees Celsius	
34		Analytical Technique	Instrument Type:	Miran IR	
35			Instrument ID Number:	CDC 1236	
36			Instrument Settings:	Wavelength 8.5 µm, Pathlength 20.25	
37			Sampling Pump ID:	Wr-156p	
38		Collection System	Medium:	Air	·
39			I otal Volume of the Collection Medium (Vt):	5.64	
40		System Type:	Llosed Loop, Discrete Sampling, Volume Replaced.		
41			Volume of Discrete Sample (Vs) Removed from Collection Medium:	0.05	
42			Data Sampling Interval (seconds):	3	
4   4	► M \ Results /				
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The permeation curve can be copied into the Excel file formatted report by selecting "View Graph" and pressing "Ctrl/Print Scrn", then pasting the image into the report.

For open loop testing under a constant flow rate, there is an option to enter a value for the "Analytical Method Detection Limit" to calculate the "Minimum Detectable Permeation Rate" (see the report on the next slide).

File Help	
Import Data View Graph Modify Settings Save Print	
Report Title: Neoprene Against Acetone	~
Project Number: PR-1234	
Experiment type: Open Loop, Constant Flow Rate.	
Recults Choice of Variable	
* All active fields are required data fields unless noted as optional Breakthro Manually Select Data Columns Choose System (OL)	
Analyzer Response Format <ul> <li>Option 1: Use Concentration (in µg/L)</li> <li>Option 2: Use Concentration (in ppm)</li> <li>Option 3: Use Other Analyzer</li> <li>Output Reading</li> </ul> <ul> <li>Steady-St</li> <li>Constant Flow Rate of Fresh Collection Medium (F in ASTM F 739):</li> <li>J.94</li> <li>L / min</li> <li>Analytical Method Detection Limit: 1000</li> <li>µg/mL (optional)</li> <li>C Variable Flow Rate.</li> <li>Minimum detectable permeation rate: 0.1</li> <li>µg/(cm<sup>2+</sup>min)</li> <li>C Constant F 739):</li> <li>C Constant Graphic Permeation Medium (Vt in ASTM F 739):</li> <li>C Continuous Sampling</li> <li>Discrete Sampling</li> <li>C Sample Values Molt replaced other Malume Demound (Wt in ASTM F 739):</li> <li>C Sample Values Molt replaced other Malume Demound (Wt in ASTM F 739):</li> </ul>	
Cumulativ  Cumulativ  Time Format  Time Format  Time in Minutes  Minimum detectable mass permeated:  MM/DD/YYYY HH:MM:SS ##  Cancel Next  Next Next	
Operator: Jane Doe Date: 3/10/2008 -Data Filename- Filename: Data File 10.xls	

File	Help	
	Import Data View Graph Modify Settings Save Print	
- 1	Report Title: Neoprene Against Acetone	^
1	Project Number: PR-1234	
	Experiment type: Open Loop, Constant Flow Rate.	
-	-Results based on NIOSH's Permeation Calculator Version 2.4.1	
	Breakthrough Time Standardized Breakthrough Time (permeation rate at 0.10 μg/(cm²*min)): 4.57 min Breakthrough Detection Time (BDT): 5.65 min Normalized Breakthrough Time (permeation rate at 1.0 μg/(cm²*min)): 5.04 min Minimum Breakthrough Detection Time (permeation rate at 0.01 μg/(cm²*min)): 18.5 min	
	Steady-State Permeation Rate (SSPR) SSPR: 2640 μg/(cm²*min) Determined around 20.4 (average of: 20.5; 20.4; 20.2) min Maximum Permeation Rate: 2650 μg/(cm²*min) Determined at 20.5 min	
(	Cumulative Permeation Elapsed Time for Cumulative Permeation Mass of 150 μg/cm²: 6.96 minutes Cumulative Permeation for 20 minutes: 29500 μg/cm² Average Permeation Rate from 0.00 to 21.09 min: 1540 μg/(cm²*min)	
	Minimum detectable permeation rate based on analytical method detection limit: 0.78 µg/(cm²*min)	
(	Dperator: Jane Doe Date: 3/10/2008 Data Filename- Filename: Data File 10.xls	>