



# 8000 Series Respirator

## INSTRUCTION MANUAL



### IMPORTANT NOTICE TO USERS

You are responsible to understand and follow all warnings, restrictions and other information contained in this instruction manual, before you enter a contaminated work area. Failure to do so may result in sickness or death.

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### APPLICATIONS

#### USE AGAINST

1. Contaminants specified on NIOSH approval label on bag or cartridges or filters.
2. Contaminants with good warning properties, i.e. smell, taste or irritation.

#### DO NOT USE AGAINST

1. Concentrations of contaminants which are unknown, or are immediately dangerous to life or health.
2. Concentrations of contaminants which exceed the maximum use concentration or 10 times the OSHA Permissible Exposure Limit, whichever is lower.
3. Gases or vapors with poor warning properties or those which generate high heats of reaction, or paint sprays containing isocyanates, or sandblasting.
4. Oil-based mists with N filters.

#### WARNING TO USER

1. Follow all instructions and warnings on the use of these respirators and wear during all times of exposure. Failure to do so will reduce respirator effectiveness, wearer protection, and may result in sickness or death.
2. For proper use, ask your supervisor or call 800/421-0668.
3. The user must first be trained by the employer in proper respirator use, in accordance with applicable safety and health standards, for the contaminant and exposure level in the assigned work area.
4. The vapors, gases, dusts, mists, fumes, and other contaminants which can be dangerous to your health include those which you cannot see, taste, or smell.
5. Check with your supervisor for the appropriate cartridges and/or filters for the contaminants in your work area.

## RESTRICTIONS

1. This respirator does not supply oxygen and must not be used in atmospheres containing less than 19.5% oxygen.
2. Do not remain in contaminated area if any physical distress occurs, for example breathing difficulty, dizziness or nausea.
3. Leave contaminated area and replace respirator and/or cartridge or filter if it is damaged, distorted, a proper fit cannot be obtained, you taste, smell or become irritated by contaminants, or breathing becomes difficult.
4. Do not alter, modify, or abuse this respirator.
5. Store respirator in sealed bag in a clean, dry, non-contaminated area.
6. Dispose of facepiece, and/or cartridges and disks/filters according to your employer's policy and local regulations.
7. Filters are required for particulates.
8. **Where oil mists are present**, either alone or in combination with solid particulates, do not use the R or P filters for longer than one eight-hour work shift. Dispose no later than eight hours after first use. Do not exceed 10X PEL or a total of 200 mg loading per respirator, whichever is lower. It is the user's responsibility to know the PEL and concentration of the contaminant, the maximum work rate of the employee, and any other work site-specific information to calculate the loading of the filter. Where oil mists are present do not use N filters.
9. Dispose of all cartridges, N, R, P filters no later than thirty days after a) first use, and/or b) removing from sealed bag.
10. Use cartridges, filters, and facepieces before the "use by" expiration date printed on box or bag.

## TECHNICAL SERVICE LINE

Moldex maintains a toll-free Technical Service Line to answer questions about the use of Moldex respirators, contaminants and regulations. If you have any questions call **800/421-0668 ext. 512/550** or **e-mail at: tech@moldex.com. FAX 310/837-9563.**

## SELECTION GUIDE

Use this Selection Guide to help you select the correct respirator and/or cartridges and/or filters for the contaminant in your work area. Check with your supervisor to determine if you have the correct protection. Refer to the NIOSH label for approval limitations. Call **800/421-0668** for copy or you may access via website at **www.moldex.com**.

8000 RESPIRATOR ASSEMBLY WITH CARTRIDGES			
Hazard <sup>①</sup>	Model#	Size	Approval
Organic Vapor	8101	S	TC-23C-1223
	8102	M	
	8103	L	
Paint Spray/Pesticide- <b>waterbased, non oil only</b> <small>(includes 8910N95 filters, 8020 retainers, 8100 cartridges)</small>	8111N	S	TC-84A-1337
	8112N	M	
	8113N	L	
Multi Gas/Vapor <sup>②</sup> Smart <sup>®</sup> Cartridge	8601	S	TC-23C-1809
	8602	M	
	8603	L	

<sup>①</sup> Refer to NIOSH label for approval limitations.

<sup>②</sup> OSHA regulations require gas-proof goggles, when used against Formaldehyde.

FACEPIECE ONLY		
Description	Model#	Size
Facepiece Assembly including head strap harness and exhalation valve	8001	S
	8002	M
	8003	L

RETAINERS/HOLDERS/ADAPTERS	
Description	Model #
Retainer	8020
Disk/Filter Holder <sup>②</sup>	8900
Piggyback Adapter	8920

REPLACEMENT CARTRIDGES		
Hazard <sup>①</sup>	Model #	Approval
Organic Vapor	8100	TC-23C-1223
Acid Gases	8200	TC-23C-1224
Organic Vapors/ Acid Gases	8300	TC-23C-1225
Ammonia/ Methylamine	8400	TC-23C-1369
Formaldehyde <sup>③</sup>	8500	TC-23C-1409
Multi Gas/Vapor <sup>④</sup> Smart <sup>®</sup> Cartridge	8600	TC-23C-1809
P100 Particulates	8990	TC-84A-1443

<sup>①</sup> Refer to NIOSH label for approval limitations.

<sup>②</sup> Can be used with 8940, 8910, 8970, and 8755.

<sup>③</sup> OSHA regulations require gas-proof goggles, when used against Formaldehyde.

<sup>④</sup> Can be used with all gas/vapor cartridges.

<sup>⑤</sup> Nuisance OV (less than OSHA PEL).

<b>RESPIRATOR ASSEMBLY WITH P100 PARTICULATE DISKS</b>			
<b>Hazard</b>	<b>Model#</b>	<b>Size</b>	<b>Approval</b>
P100	8941	S	TC-84A-0117
	8942	M	
	8943	L	

<b>RESPIRATOR ASSEMBLY WITH N95+ NUISANCE OV</b>			
<b>Hazard</b>	<b>Model#</b>	<b>Size</b>	<b>Approval</b>
N95 Particulates Plus Nuisance OV <sup>®</sup>	8757	M	TC-84A-3901

<b>8900 DISK/FILTER SERIES</b>		
<b>Description</b> <sup>Ⓢ</sup>	<b>Model #</b>	<b>Approval</b>
N95 Particulates	8910 <sup>Ⓢ</sup>	TC-84A-1343
N95 Particulates Plus Nuisance OV <sup>®</sup>	8755	TC-84A-3901
P100 Particulates	8940 <sup>Ⓢ</sup>	TC-84A-0117
R95 Particulates	8970 <sup>Ⓢ</sup>	TC-84A-4248

<b>8000 SERIES REPLACEMENT PARTS</b>		
<b>Description</b>	<b>Model#</b>	<b>Packaging</b>
Head Strap Assembly	0082	4/Bag 5 Bags/Case
Exhale Valve Assembly including holder and diaphragm	0083	6/Bag 5 Bags/Case

See Separate (Matrix) Label for 42 CFR 84 NIOSH Approvals

## PRE-INSPECTION

Inspect your respirator before and after wearing. Do not wear, and return to your supervisor if:

1. Headstraps are torn, cut, or have lost elasticity.
2. Buckles or head cradle are missing, damaged or broken.
3. Facepiece is cracked, torn, distorted, dirty, or has holes.
4. Inhalation/Exhalation valves are missing, torn, damaged, or not properly seated.
5. Cartridges are at the end of their service life, cracked, damaged, or not properly seated.

## FITTING

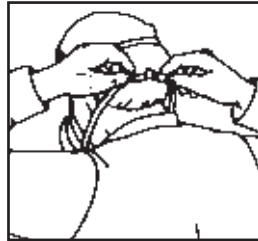
### FITTING INSTRUCTIONS

1. Users must follow instructions each time respirator is worn.
2. OSHA regulation 1910.134 (f) requires that the user be fit tested.
3. Do not wear with any facial hair, such as beards, which may prevent a proper fit.
4. If you cannot obtain a proper fit, do not enter the contaminated area and see your supervisor.



Place respirator under the chin and pull the cradle to the top of the head so it rests on the crown.

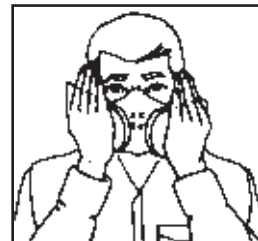
Attach the bottom straps behind the neck.



Adjust top and bottom of strap to obtain a secure and comfortable fit. Tighten by pulling on ends, or loosen by pushing out on buckle tab.



Seal check your respirator each time you enter a contaminated area.



## USER SEAL CHECK



Read instructions on respirator bag.

### **Positive Pressure Seal Check:**

Cover the exhalation valve vents, and exhale gently to create a slight positive pressure. If air leakage is detected, re-adjust the position of the facepiece, and the tension of both headstraps, and repeat the seal check until leakage is eliminated.



### **Negative Pressure Seal Check:**

Cover both cartridges, and gently inhale and hold your breath. The facepiece should slightly collapse. If air leakage is detected, re-adjust the position of the facepiece, and tension of both headstraps, and repeat the seal check until leakage is eliminated.

**WARNING:** If you cannot obtain a proper fit, do not enter the contaminated area and see your supervisor.

## FIT TESTS

A qualitative or quantitative fit test must be performed before a respirator is assigned. Refer to current OSHA and/or NIOSH regulations, current ANSI Standards, and all other applicable regulations for complete details.

Qualitative fit testing can be performed using Bitrex® with appropriate cartridges or filters. Quantitative fit testing can be performed with cartridges fitted with probes. Call Moldex at **800/421-0668** for details or access our website at **www.moldex.com**.

## CARTRIDGES

### **CHEMICAL CARTRIDGE SERVICE LIFE**

Leave contaminated area, and replace cartridges, if you smell, taste, or feel any irritation, in your nose or throat. Consult your supervisor. Replace according to your change-out schedule per OSHA 1910.134, or no more than eight hours after first use, or sooner if breakthrough occurs.

### **CARTRIDGE REPLACEMENT**

First inspect the facepiece to cartridge sealing surface to make sure it's clean and undamaged. Only use cartridges from sealed bags. To attach cartridge to facepiece, press firmly into opening until both surfaces are tightly sealed together at all points. Check to see that it is seated properly, both on the inside and outside and flush against the facepiece. Check the inhalation diaphragms for dirt or damage and see that they are seated properly. To remove cartridge, pull and lever out of the facepiece.



## CHANGEOUT SCHEDULES

OSHA 1910.134(d) requires that the employer implement a change schedule for cartridges based on objective information or data that will ensure cartridges are changed before the end of their service life (see OSHA1910.134 for complete text). A cartridge's useful service life is how long it provides adequate protection from harmful chemicals in the air. The service life of a cartridge depends on many factors, including environmental conditions, breathing rate, cartridge filtering capacity and the amount of contaminants in the air.

If you know what the chemical is and how much of it you are exposed to, then you are ready to estimate how long your respirator cartridges will work and apply the safety factor.

You must use some type of objective data to develop a changeout schedule. Options for determining a cartridge's service life include:

1. Conducting experimental tests.
2. Using a mathematical model like the "Advisor Genius" or "Breakthrough Software."
3. Using the manufacturer's recommendation. (Refer to the Estimated Cartridge Breakthrough Time in the Moldex Chemical Selection Guide. This data is only provided as a guide.)

For more detailed information on these methods, refer to OSHA's website at:

[www.osha.gov/SLTC/etools/respiratory/advisor\\_genius\\_wood/advisor\\_genius.html](http://www.osha.gov/SLTC/etools/respiratory/advisor_genius_wood/advisor_genius.html)

[www.osha.gov/SLTC/etools/respiratory/advisor\\_genius\\_wood/breakthrough.html](http://www.osha.gov/SLTC/etools/respiratory/advisor_genius_wood/breakthrough.html)

Moldex has developed laboratory data for some of the chemicals where we recommend the use of our 8000 Series Respirator. You may use this information as a guide to develop these schedules. Read the warnings and suggestions on the next page before using this data to develop your changeout schedule.

Remember this data is only valid for the Moldex 8100 and 8600 cartridges. Use the correct chart for the respective cartridge. Use any data provided with caution as each workplace has its own unique variables.

Be sure to read all footnotes provided at the end of each chart.

## CARTRIDGE BREAKTHROUGH TIMES

### READ THIS WARNING

The following pages contain laboratory generated breakthrough times for some of the chemicals that Moldex suggests its 8100 and 8600 cartridges to be used against. These breakthrough times were developed by Miller-Nelson Research under specific laboratory conditions. Tests were run at 72 degrees F (22 degrees C), 50% relative humidity, and 25 liters per minute for a pair of cartridges. Miller-Nelson Research used a challenge concentration of 1000 ppm for certain representative chemical families and was then able to calculate estimated breakthrough times at other concentrations for various chemicals. These are laboratory generated breakthrough times and should only be used as a tool in developing your own changeout schedules. No claims can be made as to their relationship to actual use conditions. There are other factors that must be considered in developing changeout schedules specific to your workplace. These factors include but are not limited to actual employee work rate, ambient temperature, ambient relative humidity, whether or not the challenge

chemicals have good warning properties, whether other contaminants are also present, use patterns, and maintenance.

Use this data only as a tool to develop your own changeout schedules. It is the employer's responsibility to ensure that the appropriate type of respiratory protection is chosen for use against a particular contaminant, and that respirators are used in accordance with a comprehensive respiratory protection program in compliance with 29 CFR 1910.134 or any other regulation with which you may be required to comply.

Finally, OSHA has on its website other means of calculating breakthrough times for various chemicals. You may also wish to consider use of this website in developing your changeout schedules. Be advised that actual service life can vary considerably from those calculated using these models. These models only provide rough estimates. Some of the data you will need specific to the Moldex cartridges in order to use the models on the OSHA website are:

- 8100 has an average of 36.7 grams Organic Vapor Carbon, its height is 2.13 cm, inside diameter is 7.85 cm.
- 8600 has an adsorbing equivalent of 28 grams Organic Vapor Carbon as calculated by Miller-Nelson Research, its height is 2.34 cm, inside diameter is 7.85 cm.

These weights were estimated by Miller-Nelson using methods based on his tests. It is suggested that you use default values provided by OSHA for the other cartridge specific parameters. Lastly, in order for the OSHA models to be used you may have to provide other pertinent data on the challenge agent which may be found on the MSDS or from the chemical manufacturer. These models can be found at [www.osha.gov/SLTC/etools/respiratory/advisor\\_genius\\_woods/advisor\\_genius.html](http://www.osha.gov/SLTC/etools/respiratory/advisor_genius_woods/advisor_genius.html). They are called "Advisor Genius" and "Breakthrough Applications." As with the following table,

your use of these models are only as a tool in the development of your own changeout schedule which must consider all of the factors set forth in the preceding paragraphs.

Moldex suggests that you use both this table, the OSHA models, or other means provided by OSHA. Moldex always recommends that you utilize the most conservative (shortest) breakthrough times. Moldex recommends that you use any of the methods only for the contaminants contained in this guide.

If you have any questions please feel free to call Moldex Technical Services at 800-421-0668 x700.

### **8000 CARTRIDGE CHANGE SCHEDULE WORKSHEET**

Duties / Job Classification: \_\_\_\_\_

Location: \_\_\_\_\_

#### **CHEMICAL INFORMATION (FROM MSDS OR MANUFACTURER)**

Chemical: \_\_\_\_\_

Exposure Limit: \_\_\_\_\_

Maximum Concentration: \_\_\_\_\_

Boiling Point: \_\_\_\_\_

Molecular Weight: \_\_\_\_\_

Liquid Density: \_\_\_\_\_

Vapor Pressure: \_\_\_\_\_

Molecular Polarization: \_\_\_\_\_

Refractive Index: \_\_\_\_\_

### **WORKSITE CONDITIONS**

Maximum Expected Temperature (°C): \_\_\_\_\_

Maximum Expected Relative Humidity (%): \_\_\_\_\_

Work Rate: \_\_\_\_\_

Number of Shifts/Week: \_\_\_\_\_

Hours Cartridge Used/Shift: \_\_\_\_\_

### **8000 CARTRIDGE DATA**

# of Cartridges: \_\_\_\_\_ 2 \_\_\_\_\_

8100 Absorbing Equivalent (grams): \_\_\_\_\_ 36.7 \_\_\_\_\_

8100 Cartridge Bed Height (cm): \_\_\_\_\_ 2.13 \_\_\_\_\_

8600 Absorbing Equivalent (grams): \_\_\_\_\_ 28.0 \_\_\_\_\_

8600 Cartridge Bed Height (cm): \_\_\_\_\_ 2.34 \_\_\_\_\_

8100 & 8600 Bed Diameter (cm): \_\_\_\_\_ 7.85 \_\_\_\_\_

Service Life Estimate: \_\_\_\_\_

Basis Used: \_\_\_\_\_

Cartridge Change Schedule Every \_\_\_\_\_ Hours \_\_\_\_\_

After Each Shift: \_\_\_\_\_

Other: \_\_\_\_\_

This form may be used to assist you in developing a changeout schedule when using 8100 or 8600 cartridges for protection against organic vapors. Be advised, this is simply a tool to help you collect some of the pertinent data in developing a changeout schedule. It is your responsibility to ensure the accuracy of the schedules that you develop for each operation and work site.

## ESTIMATED CARTRIDGE BREAKTHROUGH TIME FOR THE MOLDEX® 8600 ORGANIC VAPOR CARTRIDGE

MEDIUM WORK RATE, 22°C AND LESS THAN 65% RH

Chemical	CAS No.	ESTIMATED CARTRIDGE SERVICE LIFE* IN HOURS AT				
		10	50	100	500	1000
		ppm	ppm	ppm	ppm	ppm
Acetone	67-64-1	26	8.7	5.5	1.9	1.2
Acrylonitrile	107-13-1	34	11	7.2	2.5	1.5
Benzene	71-43-2	53	18	11	3.8	2.4
Butylamine	109-73-9	76	26	16	5.5	3.5
Chlorobenzene	108-90-7	77	26	17	5.6	3.5
Cumene	98-82-8	59	20	13	4.3	2.7
Cyclohexanone	108-94-1	87	30	19	6.3	4.0
Cyclohexene	110-83-8	59	20	13	4.3	2.7
Dimethylamine	124-40-3	12	4.0	2.5	0.9	0.5
2-Ethoxyethanol	110-80-5	56	19	12	4.1	2.5
2-Ethoxyethylacetate	111-15-9	58	20	12	4.2	2.6
Ethyl Benzene	100-41-4	61	21	13	4.4	2.8
Heptane	142-82-5	54	18	12	3.9	2.5
2-Heptanone	110-43-0	70	24	15	5.1	3.2
3-Heptanone	106-35-4	63	21	13	4.6	2.9
2-Methoxyethanol	109-86-4	84	29	18	6.1	3.8
2-Methoxyethylacetate	110-49-6	67	23	14	4.9	3.1
Methyl Acetate	79-20-9	24	8.1	5.1	1.7	1.1
Methylamine	74-89-5	8.3	2.8	1.8	0.6	0.4
Nonane	111-84-2	52	18	11	3.8	2.4
Toluene	108-88-3	68	23	15	4.9	3.1
m-Xylene	108-38-3	72	24	15	5.2	3.3

\*When used in pairs.

Bold print numbers represent experimental 1% breakthrough data point obtained in the 1970's adjusted for a medium work rate and the increased carbon volume and capacity of current cartridge technology. This data is applicable for ambient conditions at 22°C, relative humidities from 0 to 65% and a medium work rate (25 LPM). The other breakthrough times were calculated from Equation 2 taken from Nelson, G.O. and A.N. Correia, "Respirator Cartridge Efficiency Studies: VIII Summary and Conclusions" Am. Ind. Hyg. Assoc. J. 37: 514 (1976). These tests and calculations assume no safety factor.

For temperatures at 32°C, multiply breakthrough times by 0.8.  
For temperatures at 12°C, multiply breakthrough times by 1.2.

For relative humidities between 65 and 80%, multiply breakthrough times by 0.9. For relative humidities between 80 and 95%, multiply breakthrough times by 0.8.

For heavy work rates (35 LPM), multiply breakthrough times by 0.7. For light work rates (15 LPM), multiply breakthrough times by 1.7.

These tests were performed under laboratory conditions and not under actual use conditions. Miller-Nelson Research Inc. makes no warranties concerning protection by these air purifying respirator devices. These are estimates and the user should determine the suitability of the devices under actual field conditions.

Compiled by Miller-Nelson Research Inc., 8 Harris Ct., Suite C-6, Monterey, CA 93940

## ESTIMATED CARTRIDGE BREAKTHROUGH TIME FOR THE MOLDEX® 8100 ORGANIC VAPOR CARTRIDGE

MEDIUM WORK RATE, 22°C AND LESS THAN 65% RH

Chemical	CAS No.	ESTIMATED CARTRIDGE SERVICE LIFE* IN HOURS AT				
		10	50	100	500	1000
		ppm	ppm	ppm	ppm	ppm
Acetone	67-64-1	37	13	8.0	2.7	1.7
Acrylonitrile	107-13-1	50	17	11	3.6	2.3
Benzene	71-43-2	76	26	16	5.6	3.5
Butylamine	109-73-9	111	38	24	8.1	5.1
Chlorobenzene	108-90-7	112	38	24	8.1	5.1
Cumene	98-82-8	85	29	18	6.2	3.9
Cyclohexanone	108-94-1	127	43	27	9.3	5.8
Cyclohexene	110-83-8	87	30	19	6.3	4.0
Dimethylamine	124-40-3	17	5.8	3.7	1.2	0.8
2-Ethoxyethanol	110-80-5	81	27	17	5.9	3.7
2-Ethoxyethylacetate	111-15-9	84	29	18	6.1	3.8
Ethyl Benzene	100-41-4	88	30	19	6.4	4.0
Heptane	142-82-5	79	27	17	5.7	3.6
2-Heptanone	110-43-0	102	35	22	7.4	4.7
3-Heptanone	106-35-4	92	31	20	6.7	4.2
2-Methoxyethanol	109-86-4	121	41	26	8.8	5.6
2-Methoxyethylacetate	110-49-6	97	33	21	7.1	4.5
Methyl Acetate	79-20-9	35	12	7.4	2.5	1.6
Methylamine	74-89-5	12	4.1	2.6	0.9	0.6
Nonane	111-84-2	77	26	16	5.6	3.5
Toluene	108-88-3	98	33	21	7.2	4.5
m-Xylene	108-38-3	104	35	22	7.5	4.7

\*When used in pairs.

Bold print numbers represent experimental 1% breakthrough data point obtained in the 1970's adjusted for a medium work rate and the increased carbon volume and capacity of current cartridge technology. This data is applicable for ambient conditions at 22°C, relative humidities from 0 to 65% and a medium work rate (25 LPM). The other breakthrough times were calculated from Equation 2 taken from Nelson, G.O. and A.N. Correia, "Respirator Cartridge Efficiency Studies: VIII Summary and Conclusions" Am. Ind. Hyg. Assoc. J. 37: 514 (1976). These tests and calculations assume no safety factor.

For temperatures at 32°C, multiply breakthrough times by 0.8.  
For temperatures at 12°C, multiply breakthrough times by 1.2.

For relative humidities between 65 and 80%, multiply breakthrough times by 0.9. For relative humidities between 80 and 95%, multiply breakthrough times by 0.8.

For heavy work rates (35 LPM), multiply breakthrough times by 0.7. For light work rates (15 LPM), multiply breakthrough times by 1.7.

These tests were performed under laboratory conditions and not under actual use conditions. Miller-Nelson Research Inc. makes no warranties concerning protection by these air purifying respirator devices. These are estimates and the user should determine the suitability of the devices under actual field conditions.

Compiled by Miller-Nelson Research Inc., 8 Harris Ct., Suite C-6, Monterey, CA 93940

## DISKS/FILTERS

### DISK/FILTER HOLDER ASSEMBLY

Before assembling disk filter holder, inspect the facepiece sealing surface, to make sure it is clean and undamaged. To attach holder to facepiece, press firmly into opening until both surfaces are tightly sealed together at all points. Check to see that the holder is properly sealed, both on the inside and the outside, and flush against the facepiece. Insert disk or filter into retainer ring, so that **the side indicated is away from face.**



Check to see that disks or filters are properly seated. Check the inhalation diaphragms for dirt or damage and see that they are properly seated.

**Warning:** Only use 8900 disk/filter holders with 8900 disk/filter series or 8755. Only use 8920 disk piggyback adapter with 8940 or 8980 disk/filters. Failure to do so may result in sickness or death.

### FILTER AND DISK SERVICE LIFE

Leave contaminated area and replace filters, disks or cartridges, if they become damaged, soiled, torn, or if you experience increased breathing resistance. **Use Restrictions:** Where oil mists may be present in the work area you must follow page 4 point 8 and also points 9 and 10 for important restrictions on the use of these filters.

## FILTER REPLACEMENT

To remove the old filter, gently pull off the filter retainer. Place a new filter inside the retainer so that **the side indicated is away from face.** Replace the retainer.



**Warning:** Use the 8020 filter holder retainer with the 8910 or 8970 filters only. Failure to do so may result in sickness or death.

## FILTER/DISK REPLACEMENT

To remove the old filter or disk, gently pull off the filter/disk retainer ring. Discard old filter or disk. Inspect and clean the retainer ring and the holder sealing ring each time disk is changed. If seal is worn, cracked or damaged the disk holder must be replaced. Place a new filter or disk inside the retainer ring so that **the side indicated is away from face.** Replace retainer ring. Make a careful visual inspection of retainer ring seal to holder to ensure it is fully sealed. **Warning:** Only use 8900 disk/filter holder with 8900 disk/filter series or with 8755 mini pleat N95 filter. Failure to do so may result in sickness or death.



### PIGGYBACK REPLACEMENT

To remove the old disk, gently pull off the disk retainer ring. Discard old disk. Then gently pull off disk piggyback adapter. Inspect and clean the piggyback adapter and retainer ring each time the disk is changed. If seal is worn, cracked or damaged the piggyback adapter must be replaced. To remove the cartridge, gently pull and lever out of the facepiece. Before replacing with a new cartridge, inspect the facepiece to cartridge sealing surface, to make sure it is clean and undamaged. Only use replacement cartridges from sealed bags. To attach cartridge to facepiece, press firmly into opening until both surfaces are tightly sealed together at all points. Check to see that it is seated properly, both on the inside and the outside and flush against the facepiece.



Check the inhalation diaphragms for dirt or damage and see that they are seated properly. Replace the piggyback adapter on the new cartridge. Place a new disk inside the retainer ring so that **the side indicated is away from face**. Replace the retainer ring. Make a careful inspection of retainer ring seal to piggyback adapter to ensure it is fully sealed.

**Warning:** Only use 8920 disk piggyback adapter with 8940 disk/filters. Failure to do so may result in sickness or death.

### MAINTENANCE

#### FACEPIECE SERVICE LIFE

The effective life of the facepiece will be influenced by the use conditions and contaminants to which it is exposed. This includes concentration of the contaminants (e.g. ketones and aromatic solvents will increase the rate of deterioration), duration of exposure, ambient temperature, etc.

Do not use solvents to wipe or clean the facepiece as these will reduce the life of the respirator and pose a health hazard to the user. If the material shows any signs of cracking, wrinkling, or aging, then discard the facepiece immediately. Do not expose to high ambient temperatures (above 160° F) as this will distort the facepiece, and may affect fit.

#### REPLACEMENT PARTS

Use only Moldex replacement parts for Moldex respirators.

### EXHALATION VALVE INSPECTION

Pull out plastic diaphragm holder from the inside of the facepiece.



Clean and check the diaphragm for dirt, leaks, distortion, or any other damage. To wash the exhalation valve diaphragm, remove from the holder. After washing and/or inspection, replace diaphragm **inside** holder and check to see that it is fully seated.



Diaphragm holder must be inserted as indicated by arrows. When holder is correctly inserted guidepins will face **up** toward you.



If the exhalation valve does not function properly, or cannot be properly maintained, then replace diaphragm or discard respirator immediately.



### CLEANING

Your respirator should be cleaned after each day's use, or more frequently if necessary.

Remove the filters, cartridges, exhalation valve cover, and headstrap from the facepiece. Gently scrub the facepiece with a soft brush in a mild germicidal detergent.

Rinse in fresh water and air dry. Inspect components and reassemble, or replace respirator if worn, damaged or deformed. Use only warm water for machine washing.

### SUPPLEMENTAL HAZARD WARNINGS FOR MOLDEX® PARTICULATE RESPIRATORS

These are **Warnings and Limitations** that all users must be made aware of in addition to all warnings and other information on the outside of the Moldex respirator packaging or other published related information. **You must read and comply with these Warnings and Limitations at all times** and if your employer has determined that it is appropriate to use this respirator.

**Proper use of this respirator may reduce but will not eliminate the risk of illness or death from exposure to some Chemical, Biological, Radiological, or Nuclear (CBRN) hazards.** CBRN hazards include, but are not limited to, bacteria, toxins, and viruses that can cause death, serious bodily injury or disfigurement. The long-range and short-range risks of CBRN hazards and the amount and manner of exposure that may produce such risks remain to a great extent unknown. Use of this respirator must be in accordance with the Centers for Disease Control (CDC) Health Advisories or any other Local, State or Federal recommendations for use of respirators against specific CBRN hazards. This respirator should not be used for many CBRN hazards.

**There are more efficient models of respirators with a higher level of protection available from Moldex and other manufacturers. It is up to the employer, and not Moldex, to determine if a respirator should be worn and if so, which type, size, level of protection, and model.**

### BACKGROUND

The National Institute for Occupational Safety and Health (NIOSH), a branch of the CDC and a U.S. Government agency, is responsible for testing and certifying respirators for protection against hazardous industrial contaminants. Procedures for selecting and using proper respiratory protection are regulated by various governmental agencies, such as the Occupational Safety and Health Administration (OSHA).

NIOSH tests and certifies certain respirators for use against chemical warfare agents, biological warfare agents or biohazards and provides advisory information for some biohazards, but OSHA and other government agencies have not set any exposure standards for these agents or biohazards, in general.

**Moldex does not make recommendations for any type of respirator to be used against CBRN hazards for workers or the general public.**

You should know that there may be no obvious warnings of the presence or release of CBRN hazards.

### WARNINGS FOR ALL USERS

- This respirator must only be used for substances having Permissible Exposure Limits (PELs) and only where deemed appropriate by your employer.

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#### **WARNINGS FOR ALL USERS**

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- This respirator must be fit tested. If you cannot obtain a proper fit, do not use the respirator and do not enter the risk area.
- This respirator is not for use with beards or other facial hair that prevents direct contact between the face and sealing surface of the respirator.
- Moldex respirators, when properly fitted and used as part of a comprehensive respiratory protection program, may reduce wearer exposure to some airborne hazards, but not all.
- In the event of a sudden or unexpected CBRN hazard release, you may use this respirator for escape only if you have not been provided with a more appropriate respirator for this type of situation. Do not remove the mask from the face until you have left the contaminated area.
- Do not reuse or store for reuse or hang around neck unless your employer specifically authorizes reuse. Dispose of respirator as a hazardous waste in accordance with your employer's directions.
- Use other personal protective equipment, as directed by your employer. Where appropriate use protective gloves when handling or removing respirator and dispose of respirator and then gloves in accordance with your employer's directions.

- If CDC or other Local, State or Federal agency issues new or revised guidelines for respirator use against specific hazards, users must strictly comply.

#### **WARNINGS FOR USE OF PARTICULATE RESPIRATORS AGAINST TB**

OSHA and CDC have recommended the use of any of the particulate respirators approved under 42CFR84 as a means of providing help in complying with a program designed to reduce occupational exposure to tuberculosis.

The level of effectiveness of respiratory protection from tuberculosis cannot be determined with currently available data. However, proper use of appropriate Moldex respirators in conjunction with a comprehensive respiratory protection program may reduce, but will not eliminate, risk of infection.

- Be sure to read the Limitations outlined below and strictly follow all Warnings set forth under the WARNINGS FOR ALL USERS.
- When using any Moldex respirator, filter replacement and/or disposal must be handled in accordance with your Healthcare Facility's comprehensive respiratory protection program.
- If disinfectants are used to sanitize reusable facepieces, you must consult with your Healthcare Facility and run tests to ensure the compatibility of any disinfectant with Moldex reusable facepiece materials. Use of disinfectants could impair the efficiency of the respirator and result in a loss of protection.

## **NOTES**

### **LIMITED WARRANTY**

#### **IMPORTANT NOTICE TO PURCHASER**

**This limited warranty is made in lieu of the warranties of merchantability, fitness for particular purposes and all other warranties, express or implied.** There are no other warranties which extend beyond the description on the face hereof. The physical standards and specifications of Moldex will be met by products sold.

**Exclusive Remedies:** damages for the breach of this limited warranty are limited to the replacement of such quantity of Moldex products proved to be defectively manufactured. Except as provided above, Moldex shall not be liable or responsible for any loss, damage, or liability, direct, indirect, incidental, special, or consequential, arising out of sale, use, or misuse, or the inability to use products by the user.

#### **MOLDEX-METRIC, INC.**

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U.S. Patent #5,505,197, #5,736,041, #D326,540 and Patents Pending.  
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