

**NIOSH**

**NIOSH CERTIFIED  
EQUIPMENT LIST**

as of October 1, 1985

**\* RESPIRATORS**

**\* COAL MINE DUST  
PERSONAL SAMPLER UNITS**

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Public Health Service  
Centers for Disease Control  
National Institute for Occupational Safety and Health

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**AS OF OCTOBER 1, 1985**

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Public Health Service  
Centers for Disease Control  
National Institute for Occupational Safety and Health**

**OCTOBER 1985**



DISCLAIMER

Mention of company name or product does not constitute endorsement by the National Institute for Occupational Safety and Health.

NIOSH CERTIFIED EQUIPMENT LIST

AS OF OCTOBER 7, 1985

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Public Health Service  
Centers for Disease Control  
National Institute for Occupational Safety and Health

OCTOBER 1985

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## NIOSH CERTIFIED EQUIPMENT

as of

October 1, 1985

### Abstract

The National Institute for Occupational Safety and Health, under authorization of the Federal Mine Safety and Health Act of 1977 and the Occupational Safety and Health Act of 1970, provides a testing, approval, and certification program assuring commercial availability of safe personal protective devices and reliable industrial hazard measuring instruments. NIOSH develops improved performance regulations, tests and certifies (or approves) devices, and purchases approved and certified products on the open market to verify the quality of manufacture.

This publication (a) lists products certified as of October 1, 1985, (b) contains tables of useful information concerning certified coal mine dust personal sampler units and respirators, (c) updates the lists of approval applicants, and (d) lists some of the more common cautions and limitations for specific respirator classes.



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## INTRODUCTION

The Certification Branch (CB), Division of Safety Research (DSR), National Institute for Occupational Safety and Health (NIOSH), located at 944 Chestnut Ridge Road, Morgantown, West Virginia 26505, was established to assure that certain devices and instruments used for control and evaluation of occupational hazards meet minimum performance requirements necessary to protect workers' health and safety. The functions of the CB include: (1) publish certification requirements, (2) test and certify products meeting those requirements, (3) publish lists of certified products, (4) audit manufacturers plants to determine the acceptability of their quality assurance programs, (5) sample products from the open market and test them for continued conformance to certification requirements, and (6) perform research on development of new test methods and requirements for product improvement, where necessary to assure worker protection.

This publication replaces previous lists of devices certified by NIOSH or by NIOSH and the Mine Safety and Health Administration. It does not list any devices formerly approved by the Bureau of Mines.

Certification applicants have voluntarily withdrawn certain products from the market. This withdrawal is for a variety of reasons, and replacement parts for these products may or may not be available. Other products are currently not being sold. The status of this withdrawal, the availability of parts, and sale of other products is subject to change. These products are, therefore, not listed in this publication. NIOSH advises interested persons to call or write the CB (304/291-4334) and request available information on certified products that are not listed in this publication.

The format of this publication has been modified this year. Respirators are listed by approval class. General cautions and limitations are listed for each approval class. These limitations are by no means all inclusive. The respirator manufacturer may also identify further limitations or cautions for their respirators. In addition, regulatory agencies may also place a limit on the use of respirators in their standards.

The component parts list section has been deleted from this year's publication because of the limited usefulness of a listing which only contains the major components of the respirator. Part numbers may not be useful to respirator users since manufacturers often assign catalog numbers for ordering purposes which may not correspond to the part number. Information on ordering replacement parts can be found in the manufacturers literature and/or as part of the respirator instructions. If the deletion of the component parts list creates a problem for you, please notify us at the above address.

Except as it purchases equipment and supplies on the open market for quality control testing, NIOSH does not have frequent internal use for personal protective equipment. It therefore welcomes information from the user concerning NIOSH certified equipment. These comments and suggestions, responses to this publication, and requests for additional information on certified products can be sent to the Chief, Certification Branch, Division of Safety Research, NIOSH, 944 Chestnut Ridge Road, Morgantown, West Virginia 26505.

I. Certification of Coal Mine Personal Sampler Units

A coal mine dust personal sampler (MSP) consists of a pump, a charger, and a sampling head with a 10 micron cyclone and a 5 micron filter. It is used to sample dust in the breathing zone of a miner. The MSP is used to sample dust in the breathing zone of a miner. The MSP is used to sample dust in the breathing zone of a miner. The MSP is used to sample dust in the breathing zone of a miner.

All certified MSPs must have a label approved by the Mine Safety and Health Administration. The label must contain the following information: the name of the manufacturer, the model number, the serial number, and the date of certification. The label must also contain the name of the certifying agency and the name of the certifying official.

I. COAL MINE PERSONAL SAMPLER UNITS

MODEL	MANUFACTURER	DATE
MS-100	MSA	10-15-88
MS-200	MSA	10-15-88

Mine Safety Appliances Company, 1800 Commonwealth Blvd., Piquette, PA 15139



## COAL MINE DUST PERSONAL SAMPLER UNITS

### I. Certification of Coal Mine Dust Personal Sampler Units.

A coal mine dust personal sampler unit (CMDPSU) consists of a pump, a charger, and a sampling head with a 10 mm nylon cyclone and a preweighted sealed filter cassette. It is used--as a unit--for collecting the mandatory coal mine atmosphere samples as required under the Federal Mine Safety and Health Act of 1977. The sampling requirements are detailed in Title 30, Part 70 of the Code of Federal Regulations.

All certified CMDPSU's must have prior approval by the Mine Safety and Health Administration, Department of Labor, to meet the 2G-2239 Electrical Permissibility requirements. The performance of the CMDPSU's is certified by NIOSH under Title 30, Part 74 of the Code of Federal Regulations. As of October 1, the following CMDPSU's are certified by NIOSH:

<u>CERTIFICATION</u>	<u>CERTIFICATE</u>	
<u>NUMBER</u>	<u>HOLDER</u>	<u>MODEL</u>
TC-74-015	MSA	G
TC-74-028	MSA	G (tamperproof cassette)

### NAMES AND ADDRESSES OF MANUFACTURERS AND DISTRIBUTORS

Mine Safety Appliances Company, 3880 Meadowbrook Road, Murrysville,  
Pennsylvania 15668

Now readers of the "Respiratory Protective Equipment List" will find the following questions:

- 1. What is the appropriate respirator for the job?
- 2. Is this respirator approved?

The Respiratory Protective Equipment (RPE) List is a list of respirators that are approved for use in various types of work environments. The list is organized by hazard class and by type of respirator.

Respirator Selection

The selection of an appropriate respirator for a job is a complex task. It requires a thorough understanding of the hazards in the work environment and the capabilities of the various types of respirators.

**II. RESPIRATORY PROTECTIVE DEVICES**

There is a selection of specific respirators for a list of all respirators. The list is organized by hazard class and by type of respirator.

- 1. Self-contained breathing apparatus
  - a. Open circuit demand
  - b. Open circuit demand
  - c. Demand
  - d. Demand
- 2. Demand
- 3. Demand
- 4. Demand
- 5. Demand
- 6. Demand
- 7. Demand
- 8. Demand
- 9. Demand
- 10. Demand
- 11. Demand
- 12. Demand
- 13. Demand
- 14. Demand
- 15. Demand
- 16. Demand
- 17. Demand
- 18. Demand
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- 92. Demand
- 93. Demand
- 94. Demand
- 95. Demand
- 96. Demand
- 97. Demand
- 98. Demand
- 99. Demand
- 100. Demand

## HOW TO USE THE RESPIRATOR TABLES

Most readers of the "NIOSH Certified Equipment List" use it to answer two basic questions about respiratory protection:

1. What is the appropriate respirator to use? and,
2. Is this respirator approved?

The Respiratory Protective Devices (Respirator) Section is divided into two series of tables to allow the user to readily find the answers to these two questions.

### Respirator Selection

The selection of an appropriate respirator for use in a given situation can only be made by carefully considering a series of interrelated environmental, equipment, work situation and human factors.

Once a selection by specific type is made, then a user can refer to the specific section for a list of all approved devices of that type. These types are:

- A. Self-contained Breathing Apparatus
  1. Entry Into and Escape
    - a. Open circuit pressure demand
    - b. Open circuit demand
    - c. Closed circuit
  2. Escape Only
    - a. Open circuit (pressure demand, demand or continuous flow)
    - b. Closed circuit
  3. Combination Self-contained Breathing Apparatus and Supplied-air Respirators
- B. Gas Mask
  1. Ammonia
  2. Chlorine
  3. Sulfur Dioxide
  4. Acid Gases
  5. Organic Vapors
  6. Carbon Monoxide
  7. Pesticides
  8. Other gases and vapors
- C. Supplied Air Respirators
  1. Type C Continuous Flow
  2. Type C Pressure Demand
  3. Type C Demand
  4. Type CE Continuous Flow Abrasive Blasting
  5. Type A
  6. Type B

- D. Particulate
  - 1. Single Use
  - 2. Dusts and Mists
  - 3. Dusts, Fumes and Mists
  - 4. High Efficiency
  
- E. Chemical Cartridges
  - 1. Ammonia
  - 2. Methyl Amine
  - 3. Chlorine
  - 4. Hydrogen Chloride
  - 5. Sulfur Dioxide
  - 6. Organic Vapor
  - 7. Paints, Lacquers and Enamels
  - 8. Pesticides
  - 9. Vinyl Chloride
  - 10. Other Gases and Vapors
  
- F. Powered Air Purifiers
  - 1. Gas Masks
  - 2. Particulate
  - 3. Chemical Cartridge
  
- G. Vinyl Chloride Respirators

For example, if your need was for a self-contained breathing apparatus for use in escaping from a laboratory fire in which the travel distance to safety was 100 feet, then your choice might be an escape self-contained breathing apparatus (SCBA) with a relatively short duration or service life. Turning to Section A(2) Escape Only Self Contained Breathing Apparatus, you would find that the TC-13F-28 approval (among others) has been granted for escape self-contained breathing apparatus (ES) with a service life of 5 minutes.



## Abbreviations and Definitions of Terms and Symbols Used in Lists

### Respirator Type

- A Hose mask respirator, for entry into and escape from atmospheres not immediately dangerous to life or health, which consists of a motor-driven or hand-operated blower that permits the free entrance of air when the blower is not operating, a strong large-diameter hose having a low resistance to air flow.
- AE Supplied-air respirator. A type A supplied air respirator equipped with additional devices designed to protect the wearer's head and neck against impact and abrasion from rebounding abrasive material, and with shielding material such as plastic, glass, woven wire, sheet metal, or other suitable material to protect the window(s) of facepieces, hoods, and helmets which do not unduly interfere with the wearer's vision and permit easy access to the external surface of such window(s) for cleaning.
- B Supplied-air respirator. A hose mask respirator, for entry into and escape from atmospheres not immediately dangerous to life or health, which consists of a strong large diameter hose with low resistance to airflow through which the user draws inspired air by means of his lungs alone, a harness to which the hose is attached, and a tight-fitting facepiece.
- BE Supplied-air respirator. A type B supplied-air respirator equipped with additional devices designed to protect the wearer's head and neck against impact and abrasion from rebounding abrasive material, and with shielding material such as plastic, glass, woven wire, sheet metal, or other suitable material to protect the window(s) of facepieces, hoods, and helmets which do not unduly interfere with the wearer's vision and permit easy access to the external surface of such window(s) for cleaning.
- C Supplied-air respirators. An airline respirator, for entry into and escape from atmospheres not immediately dangerous to life or health, which consists of a source of respirable breathing air, a hose, a detachable coupling, a control valve, orifice, a demand valve or pressure demand valve, an arrangement for attaching the hose to the wearer and a facepiece, hood, or helmet.
- CE Supplied-air respirator. A type C supplied-air respirator equipped with additional devices designed to protect the wearer's head and neck against impact and abrasion from rebounding abrasive material, and with shielding material such as plastic, glass, woven wire, sheet metal, or other suitable material to protect the window(s) of facepieces, hoods, and helmets which do not unduly interfere with the wearer's vision and permit easy access to the external surface of such window(s) for cleaning.
- CF Continuous flow. Type C supplied air respirator which supplies respirable air at a constant flow.
- CC Closed-circuit apparatus. An apparatus of the type in which the exhalation is rebreathed by the wearer after the carbon dioxide has been effectively removed and a suitable oxygen concentration restored from sources composed of: (i) Compressed oxygen; or (ii) Chemical oxygen; or (iii) Liquid-oxygen.

- ODM Open circuit demand type - An apparatus in which the pressure inside the facepiece in relation to the immediate environment is positive during exhalation and negative during inhalation and from which exhalation is vented to the atmosphere and not rebreathed.
- OPD Open circuit pressure demand type. An apparatus in which the pressure inside the facepiece in relation to the immediate environment is positive during both inhalation and exhalation and from which exhalation is vented to the atmosphere and not rebreathed.
- GEN Oxygen generating respirator which supplies oxygen by means of a chemical reaction
- Es Escape only respiratory devices providing protection only during escape from hazardous atmospheres.
- SAR Supplied-air respirator. An airline respirator.
- PAPR Powered air-purifying respirator means a device equipped with a facepiece, hood, or helmet, breathing tube, canister, cartridge, filter, canister with filter, or cartridge with filter, and a blower.
- Rp Replaceable filter. A filter which is discarded after excessive resistance renders it unsuitable for further use.
- Ru Reusable filter. A filter which is cleaned and reused after excessive resistance renders it unsuitable for further use.
- Su Single use. A respirator that is entirely discarded after excessive resistance, sorbent exhaustion, or physical damage renders it unsuitable for further use.
- AG Acid gas
- OV Organic vapor
- Cl Chlorine
- HCl Hydrogen chloride
- SO<sub>2</sub> Sulfur dioxide
- CO Carbon monoxide
- NH<sub>3</sub> Ammonia
- MA Methyl amine
- VC Vinyl chloride
- CL02 Chlorine dioxide

- PH<sub>3</sub> phosphine
- H<sub>2</sub>S hydrogen sulfide
- PLE mists of paints, lacquer and enamel
- PEST Pesticide means (1) any substance of mixture of substances (including solvents and impurities) intended to prevent, destroy, repel, or mitigate any insect, rodent, nematode, fungus, weed, or other form of plant or animal life or virus, and (2) any substance or mixture of substances (including solvents and impurities) intended for use as a plant regulator, defoliant, or desiccant, as defined in the Federal Insecticide, Fungicide, and Rodenticide Act of 1947, as amended (7 U.S.C. 135-135k), excluding fumigants which are applied as gases or vapors or in a solid or liquid form as pellets or poured liquids for subsequent release as gases or vapors.
- DFM:
- D Respirators, either with replaceable or reusable filters, designed as respiratory protection against dusts (1) having an air contamination level not less than 0.05 milligram per cubic meter of air; or (2) dusts having an air contamination level not less than 2 million particles per cubic foot of air.
- F Respirators, with replaceable filters, designed as respiratory protection against fumes of various metals having an air contamination level not less than 0.05 milligram per cubic meter.
- M Respirators, with replaceable filters, designed as respiratory protection against mists of materials having an air contamination level not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot.
- H Respirators, with replaceable filters, designed as respiratory protection against dusts, fumes, and mists having an air contamination level less than 0.05 milligram per cubic meter, and against radionuclides.
- R Respirators, with replaceable filters, designed as respiratory protection against radon daughters, and radon daughters attached to dusts, fumes, and mists.
- A Respirators, with replaceable filters, designed as respiratory protection against asbestos-containing dusts and mists.
- S Single-use dust respirators designed as respiratory protection against pneumoconiosis- and fibrosis-producing dusts, or dusts and mists.
- AB Abrasive blasting.

### Service Life

3 min.	3 minutes
5 min.	5 minutes
15 min.	15 minutes
30 min.	30 minutes
45 min.	45 minutes
1 hr.	1 hour

### Breathing Gas

A	Compressed Air
O	Compressed Oxygen

### Facepiece Type

ON	Orinasal
FF	Full facepiece
H/H	Hood or helmet
MP(M)	Mouthpiece

### Regulator, valve, or canister location

Fm	Facepiece mounted
Bm	Belt, chest, or side mounted

### Airflow Class

Cf	Continuous flow
Dm	Demand
Pd	Pressure-demand
*	Obsolete models - these models are still approved, but no longer produced by the manufacturer

### Hose Length and Pressure Range

These columns apply only to supplied air respirators (airline) or combination respirators with a supplied air component.





**SELF-CONTAINED BREATHING APPARATUS (13F)**

A. Self-contained Breathing Apparatus

1. Entry Into and Escape

a. Open circuit pressure demand

Approval

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases and vapors.

Limitations

Use only for temperatures above the temperature listed on approval label.

Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

The air container shall meet applicable DOT specifications.

Use adequate skin protection when worn in gases or vapors that poison by skin absorption.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Demand mode shall be used only when donning apparatus.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT PRESSURE DEMAND

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Service Life (min.)	Facepiece Type	Regulator Position
30	MSA	95069 96338 461696 461704 461946 461947 463814 463815 463831 463833 466209 470444 470445 470448 470449	30	FF	Bm
40	Scott	900014-00 900014-01/05/06/12/30/31/39/50/51 900214-00/01/05/06/50/51	30	FF	Bm
42	Scott	900015-00 900015-01/05/06	15	FF	Bm
45	USD Corp.	9038-20* 9038-22*/70*/72* 9838-22/70*/72* 9848-20/22 9849-20*/22* U9038-00 U9838-00/02 M9838-20*	30	FF	Bm
47	MSA	95063 460262 461697 461703	15	FF	Bm
59	Siebe-Gorman	014422.11	30	FF	Fm
65	Robertshaw Controls	900-002-267 900-002-267-21*/31*	15	ON,FF	Fm

SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT PRESSURE DEMAND

Approval					
Number	Approval	Model	Service	Facepiece	Regulator
TC-13F-	Issued to	Number(s)	Life (min.)	Type	Position
76	Scott	900403-00 930403-01/10/11/30/31/40/41 900405-00/01/02/04/10/11/12/14/20*/21*/22*/24* 900405-30/31/32/40/41/42/34/44/50*/51*/52*/54* 930453-00/01/10/11/30/31/40/41 900455-00/01/02/04/10/11/12/14/20/21/30/31/32/34 900455-40/41/42/44/50/51	30	FF	Fm
80	Scott	900223-00 900223/01/10/11/30/31/40/41 900225-00/01/02/03*/04/10/11/12/13*/14/20*/ 900225-21*/22*/23*/-30/31/32/33*/34/40/41/42/43*/44 900225-50*/51*/52*/53* 930233-00/01/10/11/30/31/41/40 900235-00/01/02/04/10/11/12/14/30/31/32/34 900235-40/41/42/44	30	FF	Fm
82	USD Corp.	9045-20* 9045-22* 9845-20/22/27/28/30/31/32/33/34/35/36/37/38/39 9845-40/41/42/43	30	FF	Bm
99	Siebe-Gorman	014422.16	30	FF	Fm
100	Drager	(PA80)R40280 4050225	30	FF	FM
100	National	"C" R40280	30	FF	FM
102	ISI	707.114.00	30	FF	Fm
103	Draeger	PA-80-22 R40645	30	FF	Fm
105	USD Corp.	9846-20 9846-22	60	FF	Bm
106	(Bendix) Clifton Precision	7010000-1/2 7010300-1/2/3/4 7010600-1/2/3/4/5	30	FF	Fm

SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT PRESSURE DEMAND

Approval Number	Approval Issued to	Model Number(s)	Service Life (min.)	Facepiece Type	Regulator Position
107	Globe	2826-W 2826 WSM 2840-W 2840 WSM 2850-W 2850 WSM 2852 WSM 2926-W 2926 WSM 2940-W 2940 WSM 2950-W 2950 WSM 2952-W 2952 WSM C2826W C2840W C2850W C2852W U2826W U2840W U2850W U2852W	30	FF	Bm
108	USD Corp.	9841-00* 9841-01*/02*/03*/20*/21*/22*/23* 9840-00*/01/02*/03/04 thru 19/20*/21*/22*/23*	30 min	FF	Bm
110	Nat. Drager	PA-80 4052013	60	FF	Bm
110	Nat. Drager	C4052013	60	FF	Bm
113	USD Corp	9870-00* 9870-01*/02*/03*/10*/11/12*/13/14/15/16/17 9870-20*/21*/22*/23*/30*/31*/32*/33* 9871-00*/01*/02*/03*/10*/11*/12*/13*/20*/21*/22*/23* 9871-30*/31*/32*/33*	60	FF	Bm
114	Scott	900210-00 900210-01/02/04/30/31/32/34 930212-00/01/30/31	15	FF	Fm

SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT PRESSURE DEMAND

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Service Life (min.)	Facepiece Type	Regulator Position
115	Scott	900215-00 900215-01/02/04/10/11/12/14/20*/21*/30/31/32/34 900215-40/41/42/44/50*/51* 930213-00/01/10/11/30/31/40/41	15	FF	Fm
128	(Bendix) Clifton- Precision	7010200-1* 7010200-2*/3*/4* 7010601-1/2/3/4	30	FF	BM
129	(Bendix) Clifton- Precision	7010199-1* 7010199-2* 7010602-1/2	60	FF	BM
130	USD Corp.	9842-00* 9842-01/02*/03/04/05/06/07	30	FF	BM
132	AGA	4515	30	FF	BM
133	AGA	4530	30	FF	BM
138	MSA	473625 thru 473634 473649 thru 473658	30	FF	BM
139	MSA	473268 473269 474153 474158	30	FF	BM
140	MSA	470889 471528 474152 474155	60	FF	BM
144	North Safety Equipment	802,805 808, 811	60	FF	BM

SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT PRESSURE DEMAND

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Service Life (min.)	Facepiece Type	Regulator Position
146	North Safety Equipment	803, 806 809, 812 813, 814 815, 816	30	FF	Fm
147	North Safety Equipment	801, 804 807, 810	30	FF	Fm
169	MSA	476009 476010 476013 476014	15	FF	Fm
171	Globe	2826-2 2826-3 2840-2 2840-3 2850-2 2850-3 2852-2 2852-3 2926-2 2926-3 2940-2 2940-3 2950-2 2950-3 2952-2 2952-3	30	FF	Bm
174	Nat. Draeger	4050304 thru 4050319	30	FF	BM
175	Nat. Draeger	4050288 thru 4050303	45	FF	BM
177	Nat. Draeger	4050271 4050273 4050275 4050277 4050279 4050281 4050283 4050285	60	FF	



b. **Open Circuit Demand**

Approval

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases and vapors.

Limitations

Use only for temperatures above the temperature listed on approval label.

Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

The air container shall meet applicable DOT specifications.

Use adequate skin protection when worn in gases or vapors that poison by skin absorption.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT DEMAND

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Breathing Gas	Service Life (min.)	Facepiece Type	Regulator Position
29	MSA	95066 95071 96363 457152 457153 457154 463827 463828 463830 463832 466208 466210 470442 470443 470446 470447	A	30	FF	Bm
39	Scott	900000-00 900000-01/05/30/31/39/50/51/60/61	A	30	FF	Bm
41	Scott	900002-00 900002-01/05	A	15	FF	Bm
43	Globe	2540-W 2540-B* 2550-W 2550-B* 2526-W 2526-B* 2552-W, 2552-B*	A	30	FF	Bm
44	USD Corp.	9038-00* 9038-02*/60*/62* 9838-00/02/60*/62*	A	30	FF	Bm
46	MSA	95061 95068 457150 457151	A	15	FF	Bm

SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT DEMAND

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Breathing Gas	Service Life (min.)	Facepiece Type	Regulator Position
58	Siebe-Gorman	014422.10	A	30	FF	Fm
73	Scott	900400-00 900400-01/02/04/30/31/32/34 900450-00/01/02/04/30/31/32/34 930402-00/01/30/31 930452-00/01/30/31	A	30	FF	Fm
79	Scott	900220-00 900220-01/02/03*/04/30/31/32/33*/34 930222-00/01/30/31 900230-00/01/02/04/30/31/32/34 930232-00/01/30/31	A	30	FF	Fm
142	MSA	473615 thru 473624 453639 thru 473648	A	30	FF	BM
156	MSA	474196 474197 474198 474199 474200 474201 474202 474203 474226 474227 474228 474229 474230 474231 474232 474233	A	30	FF	Bm
168	MSA	476007 476008 476011 476012	A	15	FF	Fm

c. Closed circuit

Approval

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases and vapors.

Limitations

Use only for temperatures above the temperature listed on approval label.

If compressed air supply is used: Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

If compressed oxygen or liquid oxygen supply is used: Approved for use only when the cylinder or container is charged with compressed oxygen or liquid oxygen meeting U.S.P. specifications.

If liquefied breathing air is used it must meet Type II-Grade B of higher quality.

The oxygen container shall meet applicable DOT specifications.

Use adequate skin protection when worn in gases or vapors that poison by skin absorption.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

SCBA ENTRY INTO AND ESCAPE CLOSED CIRCUIT DEMAND

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Breathing Gas	Service Life (min.)	Facepiece Type	Regulator Position
27	Biomarine	Biopack 45 45-600* 45-100	0	45	FF	Bm
32	Siebe-Gorman	013831.04 013831.05 013831.07	0	3 hr.	FF	Bm
38	Drager	BG-174A/3	0	3 hr.	FF	Bm
57	Drager	BG-174A/4	0	4 hr.	FF	Bm
60	Scott	900050-00 900050-01/02/03/04/05	0	4 hr.	FF	In back pack
84	Rexnord	BioPak 30	0	30	FF	Bm
85	Rexnord	BioPak 60	0	60	FF	Bm
176	Nat. Draeger	R32200 (BG-174-AP)	0	2 hr.	FF	Bm
185	Rexnord	Biopak 240	0	4 hrs.	FF	Bm
186	MSA	472973	0	4 hrs.	FF	Bm

2. Escape Only

- a. Open circuit (pressure demand, demand or continuous flow)

Approval

Approved for respiratory protection during escape from oxygen deficient atmospheres, gases and vapors.

Limitations

Use only for temperatures above the temperature listed on approval label.

Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

The air container shall meet applicable DOT specifications.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

OSHA regulations require that escape respirators be inspected monthly.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

SCBA ESCAPE ONLY OPEN CIRCUIT

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Service Life (min.)	Facepiece Type	Respirator Type
28	Robertshaw	900-002-268-01 900-002-268-02 900-002-268-11 900-002-268-12	5	H/H	ES, CF
28A	Lear Siegler	5500	5	H/H	ES, CF
35	USD Corp.	9065-03 9865-03*	15	FF	ES, ODM
36	USD Corp.	9069-02/11 9869-02/11	5	FF	ES, ODM
52	MSA	457156 456040	5	FF	ES, ODM
55	MSA	76753	5	MP	ES, ODM
61	MSA	456989	5	ON	ES, ODM
66	Scott	900055-01 900055/02/03/04/21/30/31/36/40/41/54/55	5	ON, FF	ES, ODM
71	Globe	2508	5	FF	ES, ODM
75	Globe	2503	15	FF	ES, ODM
83	MSA	465251	5	ON	ES
86	USD Corp.	0028-00/-03	5	HH	ES, CF
111	International Safety Inst.	(ELSA) 070.117.00	5	HH	CF
112	Scott	900480-01	5	FF	CF, ES, SAR

SCBA ESCAPE ONLY OPEN CIRCUIT

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Service Life (min.)	Facepiece Type	Respirator Type
116	Scott	900055-42/43 900055-56/57	5	FF	OPD, ES
124	Scott	900555-01 900555-02/03/04	5 min	FF	OPD, ES
125	Scott	900550-01 900550-02/03/04	5 min	FF	OPD, ES
143	MSA	474944 thru 474961	5	FF	OPD, ES
145	ISI	707.117.02	10	HH	Es, CF
166	Globe	2808 2908	5	FF	OPD
167	Globe	2803 2903	15	FF	OPD
172	North Safety	845	5	HH	Cf, ES
173	ISI	707.117.08	5	HH	Cf, ES
178	Resp. Systems	(L510) 100100-1 100100-11 (R410) 100100-21 (R410A) 100100-31	5	HH	CF, ES
179	Resp. Systems	(L505) 100500-1 100500-11 (R405) 100500-21 (R405A) 100500-31	10	HH	CF, ES
181	Scott	900105-01	5	HH	CF, ES
182	National Draeger	4052143	5	HH	CF, ES



b. Closed circuit

Approval

Approved for respiratory protection during escape from oxygen deficient atmospheres, gases and vapors.

Limitations

Use only for temperatures above the temperature listed on approval label.

If compressed air supply is used: Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

If liquefied breathing air is used it must meet Type II - Grade B or higher quality.

If compressed oxygen or liquid oxygen supply is used: Approved for use only when the cylinder is charged with compressed oxygen or liquid oxygen meeting U.S.P. specifications.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

OSHA regulations require that escape respirators be inspected monthly.

MSHA regulations require that self-rescuers that are carried be inspected daily.

Cylinder must meet applicable DOT specifications.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

SCBA ESCAPE ONLY CLOSED CIRCUIT

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Service Life (min.)	Facepiece Type
77	MSA	304330	10 1 hour	MP
78	MSA	464213	1 hr.	MP
87	Drager	OXY-SR60B(R31230)	60	MP
88	Scott	802300-01/02	15	HH
97	PASS	700	60	MP
101	CSE	AU-9A1	60	MP
104	Ocenco	(EBA 6.5) 14000	60	MP
109	PASS	720	60	FF
117	USD Corp.	9039-00 9040-00	60	FF
170	Romiro	150	15	MP
180	MSA	1118-705/SSR90	60	MP

3. Combination Self-contained Breathing Apparatus and Supplied-air Respirators (Demand and Pressure Demand)

Approval

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases and vapors, when using air-line air supply. Approved for escape only, when using self-contained air supply. If service life is 15 minutes or longer then not more than 20% of the rated capacity of air supply can be used on entry.

Limitations

Use only for temperatures above the temperature listed on approval label.

Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

The air container shall meet applicable DOT specifications.

Use adequate skin protection when worn in gases or vapors that poison by skin absorption.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Use only the hose lengths and pressure ranges specified on the approval label.

If the supplied air fails open cylinder valve and proceed to fresh air immediately.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Service Life of SCBA	Face- piece Type	Supplied Air Respirator Type	Hose Length feet	Pressure Range psi.
33	USD Corp.	9081-14 9881-14	5	FF	ES,ODM,SAR	4-250	50-125
34	USD Corp.	9081-12 9881-12	5	FF	ES,ODM,SAR	4-250	50-125
48	Scott	900006-00 900006-02/08/10/11/20/21/22/23/24/25	3 or 5	FF	ES,ODM,SAR	25-300	350-450
49	Scott	900007-00 900007-02/08/10/11/20/21/22/23/24/25	3 or 5	FF	ES,OPD,SAR	25-300	350-450
53	USD Corp.	9081-13 9881-13 9881-17	5	FF	ES,OPD,SAR	4-250	50-125
54	USD Corp.	9081-15 9881-15 9881-19	5	FF	ES,OPD,SAR	4-250	50-125
56	MSA	96395 455938 455993 455994	10	FF	ES,OPD,SAR	25-300	75-90
56A	MSA	304213 304194	10	FF	ES,OPD,SAR	25-300	75-90
62	MSA	458178 458479	5	FF	ES,ODM,SAR	25-300	50-90
63	Robertshaw Controls	900-002-267-01*/-11*	15	ON,FF	ES,OPD,SAR	25-250	50-125
64	Robertshaw Controls	900-002-266-01/02/03/04/11/12/13/14	5	ON,FF	ES,OPD,SAR	25-250	50-125

COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

Approval Number	Approval Issued to	Model Number(s)	Service Life of SCBA	Face-piece Type	Supplied Air Respirator Type	Hose Length feet	Pressure Range psi.
67	Scott	900055-09 900055-10/17/18/05/06/32/33/58/59/50/51	5	ON,FF	ES,ODM,SAR	10-250	60-125
68	Scott	900055-13 900055-14/22/23/24/25/60/61/52/53	5	FF	ES,OPD,SAR	10-250	60-125
69	MSA	457159 456039	5	FF	ES,ODM,SAR	25-300	50-100
70	MSA	460713 461698 466556	5	FF	ES,OPD,SAR	25-300	50-100
72	Globe	2509	5	FF	ES,ODM,SAR	25-100	50-70
74	Globe	2505 2505-4	15	FF	ES,ODM,SAR	25-100	50-70
76	Scott	900403-00 930403-01/10/11/30/31/40/41 900405-00/01/02/04/10/11/12/14/20*/21*/22*/24* 900405-30/31/32/40/41/42/34/44/50*/51*/52*/54* 930453-00/01/10/11/30/31/40/41 900455-00/01/02/04/10/11/12/14/20/21/30/31/32/34 900455-40/41/42/44/50/51	30	FF	OPD,SAR	0-300	60-115
79	Scott	900220-00 900220-01/02/03*/04/30/31/32/33*/34 930222-00/01/30/31 900230-00/01/02/04/30/31/32/34 930232-00/01/30/31	30	FF	ODM,SAR	0-300	60-115
80	Scott	900223-00 900223/01/10/11/30/31/40/41 900225-00/01/02/03*/04/10/11/12/13*/14/20*/21*/22*-23* 900225-30/31/32/33*/34/40/41/42/43*/44/50*/51*/52*/53* 930233-00/01/10/11/30/31/41/40 900235-00/01/02/04/11/12/14/30/31/32/34/41/42	30	FF	OPD,SAR	0-300	60-115

COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Service Life of SCBA	Face- piece Type	Supplied Air Respirator Type	Hose Length feet	Pressure Range psi.
89	MSA	465182 465183 465185 465186 465199 465200 465202 465203 470450 470451 470454 470455	30	FF	ODM, SAR	25-300	50-100
90	MSA	465188 470453 465189 465191 465192 465205 465206 465208 465209 470456 470452 470457	30	FF	OPD	25-300	50-100
91	MSA	465184 465187 465201 465204	15	FF	ODM, SAR	25-300	50-100
92	MSA	465190 465193 465207 465210	15	FF	OPD, SAR	25-300	50-100
93	MSA	464775 464777 472676 472684 472677 472685	30	FF	OPD, SAR	25-300	50-100

## COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Service Life of SCBA	Face- piece Type	Supplied Air Respirator Type	Hose Length feet	Pressure Range psi.
94	MSA	464776 464778	15	FF	OPD,SAR	25-300	50-100
95	Scott	900460-00 900460-01/02/04/30/31/32/34 930462-00/01/30/31	60	FF	ODM,SAR	0-300	60-115
96	Scott	900463-00 900463-01/10/11/30/31/40/41 900465-00/01/02/04/10/11/12/14/20*/21*/30/31/32/34 900465-40/41/42/44/50*/51*	60	FF	OPD,SAR	0-300	60-115
98	Scott	900228-00*/ 900228-01*	15	FF	OPD,SAR	25-300	450-550
112	Scott	900480-01	5	FF	CF,ES	15-250	10-15
114	Scott	900210-00 900210-01/02/04/30/31/32/34 930212-00/01/30/31	15	FF	OPM,ES,SAR	0-300	60-115
115	Scott	900215-00 900215-01/02/04/10/11/12/14/20*/21*/30/31/32/34 900215-40/41/42/44/50*/51* 930213-00/01/10/11/30/31/40/41	15	FF	OPD,ES,SAR	0-300	60-115
118	Nat. Draeger	4059192 4059193 4059194 4059195 4059196 4059197 4059198 4059199 4050443	30 min (2216 psig)	FF	OPD,SAR	25-300	85-120

COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

Approval Number	Approval Issued to	Model Number(s)	Service Life of SCBA	Face-piece Type	Supplied Air Respirator Type	Hose Length feet	Pressure Range psi.
119	Nat. Draeger	4059200 4059201 4059202 4059203 4059204 4059205 4059206 4059207 4050441	30 (4500 psig)	FF	OPD,SAR	25-300	85-120
120	Nat. Draeger	4059184 4059185 4059186 4059187 4059188 4059189 4059190 4059191 4050442	15 (4500 psig)	FF	OPD,ES,SAR	25-300	85-120
121	Globe	2809 2809-4 C2809 C2809-4 2909 2909-4	5	FF	OPD,ES,SAR	25-250 w/series 3000 fittings  25-100 w/series 6000 fittings	60-75 fittings
122	Globe	2805 2805-4 C2805 C2805-4 2905 2905-4	15	FF	OPD,ES,SAR	25-250 w/series 3000 fittings  25-100 w/series 6000 fittings	60-75 fittings



COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

Approval Number	Approval Issued to	Model Number(s)	Service Life of SCBA	Face-piece Type	Supplied Air Respirator Type	Hose Length feet	Pressure Range psi.
123	MSA	470199 471955 471956 471960 471957 471961 471958 471962 471959 470740 471989 471990 471991 471992 471993 471994 471995 471996	5 min	FF	OPD,ES,SAR	25-300	65-85
126	Scott	900565-01 900565-02 900565-03 900565-04	5 min	FF	OPD,ES,SAR	0-300	60-105
127	Scott	900560-01 900560-02/03/04	5 min	FF	OPD,ES,SAR	0-300	60-105
131	USD Corp.	9882-00 9882-01/02/03/10/11/12/13	30	FF	OPD,SAR	25 50 75 100 150 200 250	35-125 38-125 40-125 45-125 55-125 60-125 75-125
134	AGA	915	5	FF	OPD,ES,SAR	25-250	60-125
135	(Bendix) Clifton- Precision	7010420-1* 7010420-2*/3*/4*/5*/6*/7*/8* 7010612-1 thru 7010612-16	30	FF	OPD,SAR	25-300	100-125

COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

Approval Number	Approval Issued to	Model Number(s)	Service Life of SCBA	Face-piece Type	Supplied Air Respirator Type	Hose Length feet	Pressure Range psi.
136	(Bendix) Clifton- Precision	7010421-1* 7010421-2*/3*/4*/5*/6*/7*/8* 7010611-1 thru 7010611-16	30	FF	OPD, SAR	25-300	100-125
137	(Bendix) Clifton Precision	7010422-1* 7010422-2*/3*/4* 7010612-1 thru 7010612-8	60	FF	OPD	25-300	100-125
141	National Draeger	4059276 4059277 4059278 4059279	5	FF	OPD	25-300	85-120
148	MSA	474234 474204 474235 474205 474236 474206 474237 474207 474238 474208 474239 474209 474240 474210 474241 474211	30	FF	ODM	15-300	85-90
149	MSA	475898 474864 475899 475865	15	FF	ODM	15-300	85-90
150	MSA	474218 474188 474219 474189 474222 474192 474223 474193	60	FF	ODM	15-300	85-90

## COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Service Life of SCBA	Face- piece Type	Supplied Air Respirator Type	Hose Length feet	Pressure Range psi.
151	MSA	474217 474187 474221 474191	30	FF	ODM	15-300	85-90
152	MSA	475956 475975 475957 475976 475960 475979 475961 475980	60	FF	ODM	15-300	85-90
153	MSA	475995 475974 475959 475978	30	FF	ODM	15-300	85-90
154	MSA	474242 474212 474243 474213 474244 474214 474245 474215 475884 475822 475885 475823 475886 475824 475887 475825	30	FF	OPD	15-300	85-90
155	MSA	475900 475866 475901 475867	15	FF	OPD	15-300	85-90

## COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Service Life of SCBA	Face- piece Type	Supplied Air Respirator Type	Hose Length feet	Pressure Range psi.
157	MSA	475896 475862 475897 475863	15	FF	ODM	15-300	85-90
158	MSA	475816 475810 475817 475811 475820 475814 475821 475815	60	FF	ODM	15-300	85-90
159	MSA	474195 474225 475813 475819	30	FF	ODM	15-300	85-90
160	MSA	475964 475965 475968 475969 475983 475984 475987 475988	60	FF	ODM	15-300	85-90
161	MSA	475963 475967 475982 475986	30	FF	ODM	15-300	85-90
162	MSA	475888 475826 475889 475827 475890 475828 475891 475829 475892 475830	30	FF	ODM	15-300	85-90

COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

Approval Number TC-13F-	Approval Issued to	Model Number(s)	Service Life of SCBA	Face- piece Type	Supplied Air Respirator Type	Hose Length feet	Pressure Range psi.
162 Cont	MSA	475893 475831 475894 475832 475895 475833					
163	MSA	475902 475868 475903 475869	15	FF	OPD	15-300	95-90
164	National Draeger	4050212 thru 4050219 4050226 thru 4050233	30	FF	ODM		
165	ISI	707.127.00 707.127.01/.02/.03/.04	5	FF	ODM	25-300	80-100
183	Dual Safe Life Support Systems	DS-100-1	3	FF	OPD	50-250	50-120
184	Dual Safe Life Support Systems	DS-100-2	3	FF	OPD	50-250	50-120
187	Scott	900155-01 900155-02	5 min.	FF	OPD	up to 300	70-125
188	North	85500	5 min.	FF	OPD	12.5-300	78-80
189	Clifton Precision	7010400-1 7010400-2/3/4	5 min.	FF	OPD	25-300	100-125
190	ISI	707.137.00 707.137.01	30 min.	FF	OPD, SAR	25-300	80-120
191	ISI	707.137.02 707.137.04	30 min.	FF	OPD, SAR	25-300	80-120
192	ISI	707.137.03	60 min.	FF	OPD, SAR	25-300	80-120

**GAS MASKS (14G)**

B. Gas Masks

1. Ammonia

Approval

Approved for respiratory protection against ammonia.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - AMMONIA

Approval Number TC-14G-	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
88	MSA	448979 448980 448981 448982	Fm	FF	D,M	
93	Willson	2164F 2264F	Fm	FF	D,F,M	MA
96	MSA	465331 465327 471839 471840	Bm	FF	H,A	OV/CO/AG
101	MSA	448926 448927 448928 448929 448930 448931 448936 448937 448938 448939	Bm	FF	D,M	
103	Scott	6030-1104* 6030-1204* 6030-2104* 6030-2204* 6030-3104* 6030-3204* 6030-4104* 6030-4204* 6030-5104* 6030-5204* 63-AM 63F-AM 63FG-AM 63R-AM 63S-AM	Fm, Es	FF	D,M	MA
111	North	7604L* 7604LS* 7604LN* 7604SLN*	Fm	FF		



GAS MASKS - AMMONIA

Approval Number TC-14G-	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
112	MSA	469039 469040	Fm, Es	FF	D,F,M	OV/CL
121	Pirelli	4333.2012	Fm, Es	FF		
126	MSA	472884 472885	Fm, Es	FF	D,M	Combination Type C, Con't Flow 35-40 psig; 25-300 ft hose
128	Pirelli	4333.2015	Fm, Es	FF	H	
132	Racal	BE 3/K BE 7/K	PAPR	FF		MA
137	MSA	478120 478121	SAR	FF		Combination type CE, Con't Flow 35-40 psig, 15-300 ft hose

## 2. Chlorine

### Approval

Approved for respiratory protection against chlorine.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and page 9 for gas and vapor.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - CHLORINE

Approval Number TC-14G-	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
89	MSA	460131 460132 460133 460134	Fm	FF	D,M	
95	Willson	2162F 2262F	Fm	FF	D,F,M	
98	MSA	460125 460126 460127 460128 460129 460130	Bm	FF	D,M	OV/H2S/PH3
102	Scott	6030-1108* 6030-1208* 6030-2208* 6030-2108* 6030-3108* 6030-3208* 6030-4108* 6030-4208* 6030-5108* 6030-5208*	Fm, Es	FF	D,M	
105	MSA	466225 466226	Fm, Es	FF	H,A	
106	MSA	466231 466232	Fm, Es	FF	H	
112	MSA	469039 469040	Fm, Es	FF	D,F,M	OV/NH3
113	MSA	468921	SAR (combination type C, cont. flow 35-40 psig; 25-300 ft. hose)	ON	H,A	

GAS MASKS - CHLORINE

Approval Number	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval	
114	MSA	468922	SAR	ON	H,A		
			(combination type C, cont. flow 35-40 psig; 25-300 ft. hose)				
118	Scott	6030-1175* 6030-1275* 6030-2175* 6030-2275* 6030-3175* 6030-3275* 6030-4175* 6030-4275* 6030-5175* 6030-5275* 63-TEDA-H 63F-TEDA-H 63FG-TEDA-H 63R-TEDA-H 63S-TEDA-H	Fm, Es	FF	H		
123	Racal	BE 3/B BE 7/B	PAPR, FF	FF		HCl	
129	Scott	63-OA 63F-OA 63FG-OA 63R-OA 63S-OA	Fm, Es	FF	D,M	HCl/OV/H2S/SO2 formaldehyde	
130	Scott	63-CL 63F-CL 63FG-CL 63R-CL 63S-CL	Fm, Es	FF	D,M	HCl/H2S formaldehyde	
131	Scott	63CL-H 63F-CL-H 63FG-CL-H 63R-CL-H 63S-CL-H	Fm, Es	FF	H,R,A	HCl/H2S formaldehyde	

### 3. Sulfur Dioxide

#### Approval

Approved for respiratory protection against sulfur dioxide.

#### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

Do not use in concentrations which generate high heats of reaction with sorbent material.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - SULFUR DIOXIDE

Approval Number	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
92	MSA	461133 461134 461140 461141	Fm	FF	D,M	
129	Scott	63-OA 63F-OA 63FG-OA 63R-OA 63S-OA	Fm, Es	FF	D,M	C1/HCl/OV/H2S formaldehyde

#### 4. Acid Gases

##### Approval

Approved for respiratory protection against acid gases.

##### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

Do not use in concentrations which generate high heats of reaction with sorbent material.

Not for use against gases and vapors with poor warning properties.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - ACID GAS

Approval Number TC-14G-	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
96	MSA	465331 465327 471839 471840	Bm	FF	H,A	OV/CO/AG
100	MSA	460119 460120 460121 460122 460123 460124	Bm	FF	D,M	OV
107	MSA	466227 466351 466228 466350	Fm, Es	FF	D,M	OV formaldehyde
127	Willson	2165, 2265	Fm, Es	FF	D,M	OV
133	Racal	BE 3/E BE 7/E	PAPR, FF	FF		



## 5. Organic Vapors

Approved for respiratory protection against organic vapors.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

Do not wear for protection against gases or vapors with poor warning properties or those which generate high heats of reaction with sorbent materials in the canister.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - ORGANIC VAPOR

Approval Number TC-14G-	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
86	MSA	448983 448984 448985 448986	Fm	FF	H,A	Pest
87	MSA	448975 448976 448977 448978	Fm	FF	D,M	
96	MSA	465331 465327 471839 471840	Bm	FF	H,A	NH3/CO/AG
97	MSA	448932 448933 448934 448935 448920 448921 448922 448923 448924 448925	Bm	FF	D,M	
98	MSA	460125 460126 460127 460128 460129 460130	Bm	FF	D,M	C1/H2S/PH3
99	MSA	448940 448941 448942 448943	Bm	FF	H	Pest
100	MSA	460119 460120 460121 460122 460123 460124	Bm	FF	D,M	AG

GAS MASKS - ORGANIC VAPOR

Approval Number TC-14G-	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
104	Scott	6030-1113* 6030-1213* 6030-2113* 6030-2213* 6030-3113* 6030-3213* 6030-4113* 6030-4213* 6030-5113* 6030-5213* 63-OV 63F-OV 63FG-OV 63R-OV 63S-OV	Fm, Es	FF	D,M	
107	MSA	466227 466351 466228 466350	Fm, Es	FF	D,M	AG formaldehyde
108	MSA	466229 466230	Fm, Es	FF	H,A	
110	North	7601L* 7601LN* 7601LS* 7601LSN*	Fm	FF		
112	MSA	469039 469040	Fm, Es	FF	D,F,M	NH3/CL
115	MSA	469268 469269	Fm	FF	H,A	(combination type C, cont. flow 35-40 psig; 25-300 ft. hose)
116	MSA	469270	Fm, Es	ON	H,A	(combination type C, cont. flow 35-40 psig; 25-300 ft. hose)

GAS MASKS - ORGANIC VAPOR

Approval Number TC-14G-	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
117	Scott	6030-1157* 6030-1257* 6030-2157* 6030-2257* 6030-3157* 6030-3257* 6030-4157* 6030-4257* 6030-5157* 6030-5257* 63-OV-H 63FG-OV-H 63F-OV-H 63R-OV-H 63S-OV-H	Fm, Es	FF	H	Pest
119	Pirelli	4333.2011	Fm, Es	FF		
120	Pirelli	4333.2014	Fm, Es	FF	H	
122	Racal	BE 3/A BE 7/A	PAPR, FF	FF		
124	MSA	472886 472887	SAR	FF	H,A	Pest  Combination Type C, Con't Flow 35-40 psig and hose length 25-300 feet
125	MSA	472882 472883	SAR	FF	D,M	AG  Combination Type C, Con't Flow 35-40 psig; hose length 25-300 feet
127	Willson	2165 2265	Fm, Es	FF	D,M	AG

GAS MASKS - ORGANIC VAPOR

Approval Number TC-14G-	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
129	Scott	63-OA 63F-OA 63FG-OA 63R-OA 63S-OA	Fm, Es	FF	D,M	HCl/Cl/H2S/SO2 formaldehyde
136	MSA	478118 478119	SAR	FF	DM	Combination type CE, continuous flow 35-40 psig, 15-300 ft hose
138	MSA	478122 478123	SAR	FF	HA	Pest Combination type CE, continuous flow 35-40 psig, 15-300 ft hose
139	MSA	478124 478125	SAR	FF	HA	Combination type CE, Continuous Flow 35-40 psig, 15-300 ft hose

## 6. Carbon Monoxide

### Approval

Approved for respiratory protection against carbon monoxide.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - CARBON MONOXIDE

Approval Number TC-14G-	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
82	MSA	455299 (W65)	Es	M		
83	Drager	FSR810 FSR910	Es	M		
96	MSA	465331 465327 471839 471840	Bm	FF	H, A	NH3/OV/AG

## 7. Pesticides

### Approval

Approved for respiratory protection against pesticides.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

Do not wear for protection against gases or vapors with poor warning properties or those which generate high heats of reaction with sorbent materials in the canister.

Not approved for fumigants.

Refer to pesticide label for limitations on respirator use.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.



GAS MASKS - PESTICIDE

Approval Number TC-14G-	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
86	MSA	448983 448984 448985 448986	Fm	FF	H,A	OV
94	Willson	2161F 2261F	Fm	FF	D,F,M	OV
99	MSA	448940 448941 448942 448943	Bm	FF	H	OV
117	Scott	6030-1157* 6030-1257* 6030-2157* 6030-2257* 6030-3157* 6030-3257* 6030-4157* 6030-4257* 6030-5157* 6030-5257* 63-OV-H 63F-OV-H 63FG-OV-H 63R-OV-H 63S-OV-H	Fm, Es	FF	H	OV
124	MSA	472886 472887	SAR	FF	H,A	OV
Combination Type C, Con't Flow 35-40 psig and hose length 25-300 feet						
138	MSA	478122 478123	SAR	FF	HA	OV
Combination type CE, continuous flow 35-40 psig, 15-300 ft hose						

## 8. Other gases and vapors

### Approval

See approval labels for approved maximum use concentration and for specific limitations.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - OTHER GASES AND VAPORS - VINYL CHLORIDE

Approval Number TC-14G-	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
84	MSA	461481 461482 461483 461484 461485 461486	Bm	FF		
85	Scott	601211-17 601221-17 601111-17 601121-17 601511-17 601521-17	Bm	FF		
91	North Safety	7820* 7820S* 7820N* 7820SN* 7829* 7829S* 7829N* 7829SN*	Bm	FF		

GAS MASKS - OTHER GASES AND VAPORS - PHOSPHINE

Approval Number TC-14G-	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
98	MSA	460125 460126 460127 460128 460129 460130	Bm	FF	D,M	OV/H2S/CL

GAS MASKS - OTHER GASES AND VAPORS - HYDROGEN SULFIDE

Approval Number	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
98	MSA	460125 460126 460127 460128 460129 460130	Bm	FF	D,M	OV/PH3/CL
129	Scott	63-OA 63F-OA 63FG-OA 63R-OA 63S-OA	Fm, Es	FF	D,M	HCl/OV/Cl/SO2 formaldehyde
130	Scott	63-CL 63F-CL 63FG-CL 63R-CL 63S-CL	Fm, Es	FF	D,M	Cl/HCl formaldehyde
131	Scott	63CL-H 63F-CL-H 63FG-CL-H 63R-CL-H 63S-CL-H	Fm, Es	FF	H,R,A	Cl/HCl formaldehyde

GAS MASKS - OTHER GASES AND VAPORS - HYDROGEN CHLORIDE

Approval Number TC-14G-	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
123	Racal	BE 3/B BE 7/B	PAPR	FF		Cl
129	Scott	63-OA 63F-OA 63FG-OA 63R-OA 63S-OA	Fm, Es	FF	D,M	H2S/OV/Cl/SO2 formaldehyde
130	Scott	63-CL 63F-CL 63FG-CL 63R-CL 63S-CL	Fm, Es	FF	D,M	Cl/H2S formaldehyde
131	Scott	63CL-H 63F-CL-H 63FG-CL-H 63R-CL-H 63S-CL-H	Fm, Es	FF	H,R,A	Cl/H2S formaldehyde

GAS MASKS - OTHER GASES AND VAPORS - ETHYLENE OXIDE

Approval Number	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
134	MSA	474143 474144	FM	FF	D,M	

GAS MASKS - OTHER GASES AND VAPORS - HYDROGEN FLUORIDE

Approval Number TC-14G-	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
135	MSA	476451 476453	Fm, Es	FF	H,A	





SUPPLIED AIR RESPIRATORS (19C)

C. Supplied Air Respirators

1. Type C Continuous Flow

Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths and pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

## SAR TYPE C CONTINUOUS FLOW

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
64	Cesco	PI-800-AA PI-800-/DA/NA/AAHF	Bm	HH	15-50 75-100	6-17 7-20
64	US Safety	PI-800-AA PI-800-DA/-NA/-AAHF	Bm	HH	15-50 75-100	6-17 7-20
64	Wheeler Protective Apparel	17032 17032A 17036 17036H	Bm	HH	15-50 75-100	6-17 7-20
65	USD Corp.	9011-12 9811-12	Fm	FF	4-250	50-125
66	USD Corp.	9011-14 9811-14	Fm	FF	4-250	50-125
67	USD Corp.	9011-13 9811-13/16	Fm	FF	4-250	50-125
68	USD Corp.	9011-15 9811-15/17	Fm	FF	4-250	50-125
69	3M	W-280-100/50/25 W-283-100/50/25* W-286-100/50/25 W-292-100/50/25 W-308-100/50/25 W-313-100/50/25 W-314-100/50/25 W-318-100/50/25 W-321-100*S/M/L W-321-25*S/M/L W-321-50*S/M/L W-329-100/50/25 W-332-100/50/25 W-335-100/50/25 W-338-100/50/25 W-346-100/50/25 W-352-100/50/25 W-368-25/50/100	Bm	HH	25 & 50 100 200 300	25-35 30-45 35-60 40-75

SAR TYPE C CONTINUOUS FLOW

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
69-Cont.		W-371-25/50/100 W-810-100/50/25 W-840-100/50/25 W-856-100L/M/S* W-856-25L/M/S W-856-50L/M/S W-858-100/50/25 W-870-100/50/25				
69	Pauli & Griffin* Clemco* Bowen Tools* Empire Abrasive* Kelco Sales* Pangborn*	W-858-100/50/25 " " " " "				
70	3M	W-281-100/50/25 W-284-100/50/25* W-287-100/50/25 W-293-100/50/25* W-310-100/50/25 W-311-100/50/25 W-315-100/50/25 W-317-100/50/25 W-322-100/50/25L W-322-100/50/25M W-322-100S*/50S*/25S* W-328-100/50/25 W-330-100/50/25 W-333-100/50/25 W-336-100/50/25 W-347-25/50/100 W-354-25/100/50 W-369-25/50/100 W-370-25/50/100 W-372-25/50/100 W-820-100/50/25 W-880-100/50/25 W-881-100/50/25L/M W-881-100/50/25S* W-888-100/50/25* W-890-100/50/25	Bm	HH	25-100	60-80

SAR TYPE C CONTINUOUS FLOW

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
70 Cont						
	Pauli & Griffin	W-888-100/50/25				
	Clemco	"				
	Bowen Tools	"				
	Empire Abrasive	"				
	Kelco Sales	"				
	Pangborn	"				
71	Scott	4616-11/12/15 4616-21/22/25 4622-11/12/15/21/22/25	Bm	FF	15-50 50-250	12-25 25-40
72	Scott	4616-18/19/28/29 4622-18/19/28/29	Bm	FF	15-50 50-250	6-16 16-22
73	Scott	802230 series	Fm	FF	3-250	60-125
78	MSA	460862 460863 460864 460865 461708 461717 461718 461719 469716 469717 469720 469721 475146 475147 475148 475149	Bm	ON/FF	25-300	35-40

## SAR TYPE C CONTINUOUS FLOW

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
80	MSA	460903 460904 460905 460906 461709 461710 461711 461712	Bm	HH	25-300	55-60
81	MSA	460907 460908 460909 460910 461713 461714 461715 461716	Bm	HH	25-300	55-60
82	Pulmosan	AL180-10168	Bm	FF	15-50	6-8
83	Willson	1810-A/B/C/D 1810* 1820* 1820-A/B/C/D	Bm	ON	15-100 100-300	10-32 21-50
84	Bullard	77 46	Bm	HH	25-200 100 only	80-95 8-15
84	Anderson	77 46	Bm	HH	25-200 100 only	80-95 8-15
84	Bowen	77 46	Bm	HH	25-200 100 only	80-95 8-15
84	Quaker State	77 46	Bm	HH	25-200 100 only	80-95 8-15

## SAR TYPE C CONTINUOUS FLOW

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
84	Pauli and Griffin	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Empire	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Kelco	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Martens Co.	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Ace	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Clemtex	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	A-BEC	77 46	Bm	HH  25-300	25-200 100 only 80-95	80-95 8-15 80-95
84	Schmidt	77 46	Bm	HH  25-300	25-200 100 only 80-95	80-95 8-15 80-95
84	Matfer	77	Bm	HH	25-200 25-300 100 only	80-95 80-95 8-15



## SAR TYPE C CONTINUOUS FLOW

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
84	Air Components	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Porter Warner	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Clark Sand	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Sulliblast	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Key Houston	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
85	Clemco	46 (PCE)	Bm	HH	25-200 100 only	80-95 8-15
86	AO	R6099 R5099 S5099 S6099	Bm	ON	12.5-75 100-175 200-300	7-15 13-25 18-35
87	3M	W-270-100/50/25 W-271-100/50/25 W-272-100/50/25 W-274-100/50/25L/M/ W-274-100/50/25S* W-277-S/M/L* W-282-100/50/25 W-285-100/50/25* W-288-100/50/25 W-294-100/50/25*	Bm	HH	25-100	60-70

SAR TYPE C CONTINUOUS FLOW

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
87 Cont		W-309-100/50/25 W-312-100/50/25 W-319-100/50/25 W-320-100/50/25M/L W-320-100/50/25S* W-323-100/50/25 W-327-100/50/25 W-331-100/50/25 W-334-100/50/25 W-337-25/50/100 W-348-25/50/100 W-353-25/50/100 W-373-25/50/100				
87	Pangborn* Pauli&Griffin* Bowen Tools* Clemco* Empire Abrasive* Kelco*	W-271-100/50/25 " " " " "				
88	Binks	40-160 40-200/220/240/260/280/300/320	Bm	ON	25-300	35-40
89	AO	R56001	Bm	HH	12.5-25 50-100 125-200 225-300	10-20 18-32 25-40 35-60
92	Globe	2185-6 2185-4	Fm	FF	25-200	60-70
94	Willson	1850* 1860* 1850A/B/C/D 1860A/B/C/D	Bm	FF	15-100 100-300	11-32 21-50

## SAR TYPE C CONTINUOUS FLOW

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
95	Pulmosan	10159 10237 11033 AL330*	Bm	ON	15-50	6-9
96	Cesco	801-AA/DA/NA/AAHF	Bm	HH	15-100	60-100
96	US Safety	801-AA/DA/NA/AAHF	Bm	HH	15-100	60-100
96	Wheeler Protective Apparel	17232 17232H 17236 17236H	Bm	HH	15-100	60-100
97	Scott	802280-01 802280-02/05/06/09/10/13/14	Fm	ON	3-250	60-125
102	Bullard	999-3 999-4 999-5 999-6 999-7 999-8	Bm	HH	10-100 10-100 100 only	12-25 80-100 8-15
102	Anderson	999-3 999-4 999-5 999-7 999-8	Bm	HH	10-100 10-100 100 only	12-25 80-100 8-15
102	Bowen	999-3 999-4 999-5 999-7 999-8	Bm	HH	10-100 10-100 100 only	12-25 80-100 8-15
102	Pauli & Griffin	999-3 999-4 999-5 999-7 999-8	Bm	HH	10-100 10-100 100 only	12-25 80-100 8-15

SAR TYPE C CONTINUOUS FLOW

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
102	Empire	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				
102	Deane	999-7	Bm	YHH	10-100	12-25
		999-8			10-100	80-100
					100 only	8-15
102	Kelco	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				
102	Titan	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-6				
		999-7				
		999-8				
102	A-BEC	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-6				
102	Schmidt	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
102	Key Houston	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				
102	Clemco	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				

## SAR TYPE C CONTINUOUS FLOW

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
102	Binks	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				
102	Air Components	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				
102	Ace	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				
102	Clemtex	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				
102	Sulliblast	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-6				
103	MSA	463925	Bm	HH	25-300	55-60
		463926				
		463970				
		463973				
		463974				
		463983				
		463986				
		463987				
104	MSA	463971	Bm	HH	15-50	16-20
		463972				
		463975				
		463976				
		463984				
		463985				
		463988				
		463989				

SAR TYPE C CONTINUOUS FLOW

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
109	North	85100 series	Bm	ON	12.5-25	8- 9
		85101*			50-75	10-11
		85102*			100-150	12-13
		85103*			175-300	17-18
		85104*				
		85105*				
		85106*				
		85107*				
		85108*				
		85109*				
		85110*				
		85111*				
		85112*				
		85113*				
		85114*				
		85115*				
		85116*				
		85117*				
		85118*				
		85119*				
		85120*				
		85121*				
		85122*				
		85123*				
		85124*				
		85125*				
85126*						
110	North	85200 series	Bm	FF	12.5	8-9
		85201*			25-75	10-11
		85202*			75-150	12-13
		85203*			175-300	17-18
		85204*				
		85205*				
		85206*				
		85207*				
		85208*				
		85209*				
		85210*				
		85211*				
		85212*				
		85213*				
		85214*				
		85215*				
		85216*				
		85217*				
		85218*				
		85219*				
85220*						

SAR TYPE C CONTINUOUS FLOW

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
110	Cont.	85221* 85222* 85223* 85224* 85225*				
111	AO	50733 50734	Bm	FF	25 50-75 100-125 150-200 225-300	8-11 11-15 14-18 18-23 21-28
112	Glendale	GR5000 GR6000	Bm	ON/FF	25-300	30-35
113	MSA	463277 463281 463297 463298 463299 463300 463301 463302 469718 469719 469722 469723 475148 475149	Bm	FF	15-50	10-15
114	Binks	40-140 40-210/230/250/270/290/310/330	Bm	FF	15-50	10-15
115	MSA	463293 463307 463305 463309 463294 463308 463306 463310	Bm	HH	15-50	16-20

SAR TYPE C CONTINUOUS FLOW

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
118	MSA	463927 463978 463928 463977	Bm	HH	25-300	75-100
120	Defense Apparel- Nucon Products	HSQ-10	Bm	HH	50-100 100	25-35 35-50
121	Cesco Safety Products	152	Bm	ON	25-300	35-40
122	US Safety Service	97	Bm	ON	25-300	35-40
123	3M	W-298/25/50/100 W-378/25/50/100	Bm	ON	25 50 100	6-16 7-16 11-22
124	Safety and Supply	RC2095ST/SC/HA RC2095G-HA/SC/ST RC2095R-HA/SC/ST RC2095B-HA/SC/ST RC2095W-HA/SC/ST RC-2095GY-HA/SC/S	Bm	HH	25-50 50-100 75-150 100-200 125-250 150-250	18-29 23-36 28-42 32-47 35-51 37-57
125	DeVilbiss	MPH-532	Bm	ON	15-100 100-300	10-32 21-50
126	US Safety Service	153	Bm	FF	25-300* 25-50**	35-60 35-60

\*max 7 lengths w/152-25 & 152-50 hose

\*\*max 2 lengths of 16261 hose



## SAR TYPE C CONTINUOUS FLOW

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
127	Cesco	98	Bm	FF 25-50**	25-300* 35-60	35-60
				*max 7 lengths w/152-25 & 152-50 hose		
				**max 2 lengths of 16261 hose		
128	Standard Safety Equipment	SD-5890	Bm	HH	25 50 75 100	10-30 15-35 17-41 20-48
129	MSA	468697	Bm	FF	25-300	35-40
131	Bullard	1414	Bm	HH	10-100 10-100 100 only	15-25 63-67 8-15
132	Bullard	1515	Bm	HH	10-100 10-100 100 only	15-25 63-67 8-15
133	Racal	AH30	Bm	HH	25-300	55-70
134	Racal	AH31	Bm	HH	25-300	55-70
135	Racal	AH33	Bm	HH	25-100	25-100
136	Racal	AH32	Bm	HH	25-100	75-120
137	Racal	AC30	Bm	HH	25-300	55-70
138	Racal	AC32	Bm	HH	25-100	75-120
139	Racal	AC38	Bm	HH	25-100	70-115

SAR TYPE C CONTINUOUS FLOW

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi	
140	NPO	SAR 100NH-AY/BY/CY/C-1Y/DY		HH	25-50	20-34*	
		SAR 100NH-AG/BG/CG/C-1G/DG			75-100	25-45	
		SAR 100NH-AB/BB/CB/C-1B/DB			125-175	30-50	
		SAR 100NH-AR/BR/CR/C-1R/DR			200-275	38-55	
		SAR 100NH-AC/BC/CC/C-1C/DC			*Maximum pressure 28 psig w/Hanson & Snap-Tite fittings		
		SAR 101H-AY/BY/CY/C-1Y/DY					
		SAR 101H-AG/BG/CG/C-1G/DG					
		SAR 101H-AB/BB/CB/C-1B/DB					
		SAR 101H-AR/BR/CR/C-1R/DR					
		SAR 101H-AC/BC/CC/C-1C/DC					
		SAR 102H-AY/BY/CY/C-1Y/DY					
		SAR 102H-AG/BG/CG/C-1G/DG					
		SAR 102H-AB/BB/CB/C-1B/DB					
		SAR 102H-AR/BR/CR/C-1R/DR					
		SAR 102H-AC/BC/CC/C-1C/DC					
		SAR 100NH-1AY/AG/AB/AR/AC					
		SAR 100NH-1C-1Y/1G/1B/1R/1C					
		SAR 100NH-1BY/BG/BB/BR/BC					
		SAR 100NH-1DY/DG/DB/DR/DC					
		SAR 100NH-1CY/CG/CB/CR/CC					
		SAR 100NH-2AY/AG/AB/AR/AC					
		SAR 100NH-2BY/2BG/2BB/2BR/2BC					
		SAR 100NH-2DY/DG/DB/DR/DC					
		SAR 100NH-2CY/CG/CB/CR/CC					
		SAR 100NH-2C-1Y/1G/1B/1R/1C					
		SAR 101H-1AY/AG/AB/AR/AC					
		SAR 101H-1DY/DG/DB/DR/DC					
		SAR 101H-1BY/BG/BB/BR/BC					
		SAR 101H-1CY/CG/CB/CR/CC					
		SAR 101H-1C-1Y/1G/1B/1R/1C					
		SAR 101H-2AY/AG/AB/AR/AC					
		SAR 101H-2DY/DG/DB/DR/DC					
		SAR 101H-2BY/BG/BB/BR/BC					
		SAR 101H-2CY/CG/CB/CR/CC					
		SAR 101H-2C-1Y/1G/1B/1R/1C					
		SAR 102H-1AY/AG/AB/AR/AC					
		SAR 102H-1DY/DG/DB/DR/DC					
		SAR 102H-1BY/BG/BB/BR/BC					
		SAR 102H-1CY/CG/CB/CR/CC					
		SAR 102H-1C-1Y/1G/1B/1R/1C					
SAR 102H-2AY/AG/AB/AR/AC							
SAR 102H-2DY/DG/DB/DR/DC							
SAR 102H-2BY/BG/BB/BR/BC							
SAR 102H-2CY/CG/CB/CR/CC							
SAR 102H-2C-1Y/1G/1B/1R/1C							
141	Racal	AT-30	Bm	HH	25-300	55-70	

SAR TYPE C CONTINUOUS FLOW

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
142	Racal	AT-32	Bm	HH	25-100	80-120
143	Racal	AT-38	Bm	HH	25-100	70-115
144	Mohawk	1010 1020	Bm	HH	50-100	25-35
147	Racal	AH38	Bm	HH	25-100	70-115
150	MSA	451518 451519	Bm	HH	15-50 50-125 125-200 200-300	15+3 20+3 25+3 35+3
151	MSA	471514 471515	Bm	HH	15-50	16-20
152	MSA	471516 471517	Bm	HH	15-300	55-60
153	Racal	AH39	Bm	HH	25-100	70-115
154	Bullard	CC20	N/A	HH	10 only 25-100 125-200 225-300 100 only 200 only 300 only	8-17 12-17 20-35 25-45 5-13 8-20 11-22
155	Bullard	FAM, FAM-B	N/A	HH	50 only 100 only 150 only 200 only 250 only 300 only	1.5-6.0 2.5-8.0 3.5-12.0 4.5-14.0 5.5-16.0 7.0-20.0

## SAR TYPE C CONTINUOUS FLOW

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
157*	3M	W-366-25*/50*/ 100*	Bm	FF	25-50 75-100 125-200 225-300	15-45 17-50 22-65 25-75
159	MSA	474184	Bm	HH	25-300	55-60
160	Lancs	LI520Y-HA/SC/ST LI520B-HA,-SC,-ST LI520G-HA,-SC,-ST LI520R-HA,-SC,-ST	Bm	HH	25-100 50-200 75-300 100-300 25-300 150-300	18-34 25-40 28-48 29-53 31-59 32-60
164	USD Corp.	9850-25	Bm	FF	25 50 75 100 150 200 250	30-60 35-70 40-85 45-95 55-110 65-125 75-125
165	USD Corp.	9850-40	Bm	FF	25 50 75 100 150 200 250	30-60 35-70 40-85 45-95 55-110 65-125 75-125
166	Willson	4000A/B/C/D	Bm	HH	25-300	8-40
168	Binks	40-360 40-370/380/390	Bm	FF	15-150	20-40

## SAR TYPE C CONTINUOUS FLOW

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
170	Bullard	M-30/31/32/33/35 M30V/31V/32V/33V		FF	25-100 125-200 225-300 10-100 125-300	9-22 14-40 22-50 45-75 50-90
171	Nat Draeger	4052045 4052034 4052040 4052043 4052044 4052037 4052017 4042025	BM	FF	25-300	50-60
172	USD Corp.	9812-02 9812-22	BM	FF	25 50 75 100 150 250	30-60 35-70 40-85 45-95 55-110 65-125
173	USD Corp.	9813-02 9813-22	BM	ON	25 50 75 100 150 250	30-60 35-70 40-85 45-95 55-110 65-125
176	MSA	476056 478327	BM	HH	15-50	16-20
177	MSA	474054 478326	BM	HH	25-300	55-60
179	Racal	FP30-7	BM	FF	25-300	55-70
180	Racal	FP30-8	BM	ON	25-300	55-70

## SAR TYPE C CONTINUOUS FLOW

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
181	Racal	FP32-7	BM	FF	25-100	75-120
182	Racal	FP38-7	BM	FF	25-100	70-115
183	Racal	FP32-8	BM	ON	25-100	75-120
184	Racal	FP38-8	BM	ON	25-100	70-115
185	Racal	VH30	BM	HH	25-300	55-70
186	Racal	VH32	BM	HH	25-100	75-120
187	Racal	VH38	BM	HH	25-100	75-115
188	Trusafe	WEI-HA WEI-SC WEI-ST WEI-SS	BM	HH	25-50 50-100 125-250 150-250 100-200 75-150	20-35 24-43 37-61 38-66 34-56 30-50
190	Trusafe	ACII-HA ACII-SC ACII-ST ACII-SS WEII-HA WEII-SC WEII-ST WEII-SS	BM	HH	25-50 50-100 75-150 100-200 125-250 150-250	20-35 24-43 30-50 34-56 37-61 38-66
191	US Safety	804-DI 804-DN	BM	HH	<u>Without Valve</u> 25-50      15-30 75-125     25-45 150-200    30-60 225-300    40-70	
					<u>W/Control Valve</u> 25-50      25-30 75-125     30-40 150-200    35-50 225-300    40-60	

SAR TYPE C CONTINUOUS FLOW

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
192	U.S. Safety	805-DI 805-DN	BM	HH	25-300	85-100
193	U.S. Safety	802-SL 802-WL 802-SN 802-WN	BM	HH	<u>W/O Valve</u>	
					25-50	15-30
					75-125	25-45
					150-200	30-60
					225-300	40-70
					<u>W/Control Valve</u>	
					25-50	25-30
					75-125	30-40
					150-200	35-50
					225-300	40-60
196	North	85300	Bm	HH	12.5	5-15
					25	7-17
					50	9-19
					100	15-30
					150	20-35
					200	25-45
					250	28-50
197	U.S. Safety	803-SL 803-WL 803-SN 803-WN	Bm	HH	25-300	85-100
199	3M	W-366-25 W-366-50 W-366-100	Bm	FF	25-50	15-45
					75-100	17-50
					125-200	22-60
					225-300	25-75
200	Neoterik	NP1740-1 thru -13 NP1750-1 thru -13 NP1760-1 thru -13	Bm	HH	25-100	12-14 (NP1680)
					25-300	25-30 (NP1681)
					25-300	65-75 (NP1682)

## 2. Type C Pressure Demand

### Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

### Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths and pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.



## SAR TYPE C PRESSURE DEMAND

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
67	USD Corp.	9011-13 9811-13/16	Fm	FF	4-250	50-125
68	USD Corp.	9011-15 9811-15/17	Fm	FF	4-250	50-125
74	Scott	801548 series	Fm	FF	3-250	60-125
90	Robertshaw Controls	900-002-264-01/02/03/04/11/12/13/14	Fm	ON/FF	25-250	50-125
93	MSA	89104 461669 461699 461700	Bm	FF	25-300	80-100
98	Scott	802280-03 802280-04/07/08/11/12/15/16	Fm	ON	3-250	60-125
145	Willson	1915* 1915A/B/C/D	Bm	ON	25-250	50-125
146	Willson	1950* 1960* 1950/A/B/C/D 1960/A/B/C/D	Bm	FF	25-250	50-125
149	Draeger	4059081 thru 4059107 4059104 thru 4509111	Fm	FF	25-300	85-120
156	AGA	Spiroline 900	Bm	FF	25-200	60-125
158	MSA	473998 473457 473464 474020 475209 thru 475224	Bm	HH	25-300	55-85

SAR TYPE C PRESSURE DEMAND

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
167	Globe	2939-1 2939-2/3/4	Bm	FF	25-200	60-75
169	Binks	40-340 40-395	Bm	FF	15-300	65-85
174	USD Corp.	9815-02 9815-22	BM	FF	25 50 75 100 150 250	30-60 35-70 40-85 45-95 55-110 65-125
175	USD Corp.	9816-02 9816-22	BM	FF	25 50 75 100 150 250	30-60 35-70 40-85 45-95 55-110 65-125
189	ISI	707.135.00 707.135.01 707.135.02 707.135.03	BM	FF	25-300	80-120
194	Dual Safe Life Support	DS-100-0 System	Bm	FF	50-250	50-125
195	North	85400	Bm	FF	125-300	78-80
198	North	85500A	Bm	FF	12.5-300	78-80

### 3. Type C Demand

#### Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

#### Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths and pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

## SAR TYPE C DEMAND

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
65	USD Corp.	9011-12 9811-12	Fm	FF	4-250	50-125
66	USD Corp.	9011-14 9811-14	Fm	FF	4-250	50-125
75	MSA	84283 93928 94988 46539 457164 457165	Bm	ON/FF	25-300	50-125
91	MSA	457157 93224 93225 461666	Fm	ON/FF	25-300	50-90

#### 4. Type CE Continuous Flow Abrasive Blasting

##### Approval

Approved for abrasive blasting and for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

##### Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths and pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
64	Cesco	PI-800-AA PI-800-/DA/NA/AAHF	Bm	HH 75-100	15-50 7-20	6-17
64	US Safety	PI-800-AA PI-800-DA/-NA/-AAHF	Bm	HH	15-50 75-100	6-17 7-20
64	Wheeler Protective Apparel	17032 17032A 17036 17036H	Bm	HH	15-50 75-100	6-17 7-20
69	3M	W-280-100/50/25 W-283-100/50/25* W-286-100/50/25 W-292-100/50/25 W-308-100/50/25 W-313-100/50/25 W-314-100/50/25 W-318-100/50/25 W-321-100*S/M/L W-321-25*S/M/L W-321-50*S/M/L W-329-100/50/25 W-332-100/50/25 W-335-100/50/25 W-338-100/50/25 W-346-100/50/25 W-352-100/50/25 W-368-25/50/100 W-371-25/50/100 W-810-100/50/25 W-840-100/50/25 W-856-100L/M/S* W-856-25L/M/S W-856-50L/M/S W-858-100/50/25 W-870-100/50/25 W-858-100/50/25	Bm	HH	25 & 50 100 200 300	25-35 30-45 35-60 40-75
69	Pauli & Griffin* Clemco* Bowen Tools* Empire Abrasive* Kelco Sales* Pangborn*					

## SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
70	3M	W-281-100/50/25 W-284-100/50/25* W-287-100/50/25 W-293-100/50/25* W-310-100/50/25 W-311-100/50/25 W-315-100/50/25 W-317-100/50/25 W-322-100/50/25L W-322-100/50/25M W-322-100S*/50S*/25S* W-328-100/50/25 W-330-100/50/25 W-333-100/50/25 W-336-100/50/25 W-347-25/50/100 W-354-25/100/50 W-369-25/50/100 W-370-25/50/100 W-372-25/50/100 W-820-100/50/25 W-880-100/50/25 W-881-100/50/25L/M W-881-100/50/25S* W-888-100/50/25* W-890-100/50/25	Bm	HH	25-100	60-80
		Pauli & Griffin Clemco Bowen Tools Empire Abrasive Kelco Sales Pangborn				
79	Encon	6400* 01-6401-31 01-6401-32 01-6401-33 01-6401-34 01-6401-35 01-6401-36 01-6451-31 01-6451-32 01-6451-33 01-6451-34 01-6451-35 01-6451-36	Bm	HH	25-50	70-90

## SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
79	Schmidt	6400* 01-6401-37 01-6401-38 01-6401-39 01-6401-40 01-6401-41 01-6401-42	Bm	HH	25-50	70-90
81	MSA	460907 460908 460909 460910 461713 461714 461715 461716	Bm	HH	25-300	55-60
84	Bullard	77 46	Bm	HH	25-200 100 only	80-95 8-15
84	Anderson	77 46	Bm	HH	25-200 100 only	80-95 8-15
84	Bowen	77 46	Bm	HH	25-200 100 only	80-95 8-15
84	Quaker State	77 46	Bm	HH	25-200 100 only	80-95 8-15
84	Pauli and Griffin	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Empire	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Kelco	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95



SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
84	Martens Co.	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Ace	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Clemtex	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	A-BEC	77 46	Bm	HH  25-300	25-200 100 only 80-95	80-95 8-15
84	Schmidt	77 46	Bm	HH  25-300	25-200 100 only 80-95	80-95 8-15
84	Matfer	77	Bm	HH	25-200 25-300 100 only	80-95 80-95 8-15
84	Air Components	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Porter Warner	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Clark Sand	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
84	Sulliblast	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95

SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
84	Key Houston	77 46	Bm	HH	25-200 100 only 25-300	80-95 8-15 80-95
85	Clemco	46 (PCE)	Bm	HH	25-200 100 only	80-95 8-15
86	AO	R6099 R5099 S5099 S6099	Bm	ON	12.5-75 100-175 200-300	7-15 13-25 18-35
87	3M	W-270-100/50/25 W-271-100/50/25 W-272-100/50/25 W-274-100/50/25L/M/ W-274-100/50/25S* W-277-S/M/L* W-282-100/50/25 W-285-100/50/25* W-288-100/50/25 W-294-100/50/25* W-309-100/50/25 W-312-100/50/25 W-319-100/50/25 W-320-100/50/25M/L W-320-100/50/25S* W-323-100/50/25 W-327-100/50/25 W-331-100/50/25 W-334-100/50/25 W-337-25/50/100 W-348-25/50/100 W-353-25/50/100 W-373-25/50/100	Bm	HH	25-100	60-70

Pangborn\*  
 Pauli&Griffin\*  
 Bowen Tools\*  
 Clemco\*  
 Empire Abrasive\*  
 Kelco\*

SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
96	Cesco	801-AA/DA/NA/AAHF	Bm	HH	15-100	60-100
96	US Safety	801-AA/DA/NA/AAHF	Bm	HH	15-100	60-100
96	Wheeler Protective Apparel	17232 17232H 17236 17236H	Bm	HH	15-100	60-100
99	Pulmosan	20009	Bm	HH	15-50	17-20
100	Pulmosan	20027	Bm	HH	15-50	17-20
102	Bullard	999-3 999-4 999-5 999-6 999-7 999-8	Bm	HH	10-100 10-100 100 only	12-25 80-100 8-15
102	Anderson	999-3 999-4 999-5 999-7 999-8	Bm	HH	10-100 10-100 100 only	12-25 80-100 8-15
102	Bowen	999-3 999-4 999-5 999-7 999-8	Bm	HH	10-100 10-100 100 only	12-25 80-100 8-15
102	Pauli & Griffin	999-3 999-4 999-5 999-7 999-8	Bm	HH	10-100 10-100 100 only	12-25 80-100 8-15

SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
102	Empire	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				
102	Deane	999-7	Bm	YHH	10-100	12-25
		999-8			10-100	80-100
					100 only	8-15
102	Kelco	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				
102	Titan	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-6				
		999-7				
102	A-BEC	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-6				
102	Schmidt	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
102	Key Houston	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				
102	Clemco	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				

SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi
102	Binks	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				
102	Air Components	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				
102	Ace	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				
102	Clemtex	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-7				
		999-8				
102	Sulliblast	999-3	Bm	HH	10-100	12-25
		999-4			10-100	80-100
		999-5			100 only	8-15
		999-6				
105	MSA	463939 463979	Bm	HH	25-300	55-60
106	MSA	463980 463981	Bm	HH	15-50	16-20
107	MSA	463929	Bm	HH	25-300	55-60
		463930				
		463959				
		463962				
		463963				
		463967				

SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
108	MSA	463960 463961 463964 463965 463968 463969	Bm	HH	15-50	16-20
116	MSA	463291 463292 463295 463296 463303 463304 463311 463312	Bm	HH	15-50	16-20
117	MSA	463924 463982	Bm	HH	25-300	75-100
119	MSA	463935 463956 463957 463958 463936 463966	Bm	HH	75-300	75-100
130	Clemco	04400 04401 04402	Bm	HH	10-200	85-45
161	MSA	466716 468720 473297 473299	Bm	HH/FF	100-300 125-300 150-300	29-53 31-59 32-60
162	MSA	468718 458722 473298 473300	Bm	HH/FF	15-300	35-40

SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face-piece Type	Hose Length feet	Pressure Range psi	
163	3M	W356-25/50/100	Bm	HH	25	4-17	
		W357-25/50/100			50	4-17	
		W358-25/50/100			100	4-17	
		W360-25L/50L/100L					
		W360-25M/50M/100M					
		W361-25/50/100					
		W362-25/50/100					
		W364-25/50/100					
		W374-25/50/100			W374 only	25	4-9
		W375-25/50/100			only	50	5-11
				100	6-15		
170	Bullard	M-30/31/32/33/35 M30V/31V/32V/33V		FF	25-100	9-22	
					125-200	14-40	
					225-300	22-50	
					10-100	45-75	
					125-300	50-90	
178	MSA	474263	BM	FF	15-300	60-80	
		474264					
		474265					
		474266					

5. Type A

Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths, RPM, or pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow manufacturer's instructions for fitting the facepiece, for location of the blower, for preventing entanglement and fouling of the hose, or operation of the blower and for caring of the respirator while not in use.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.



SAR Type A

Approval Number TC-19C-	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
101	MSA	463018 463019 463020 463021 463022 463023 463024 463025	N/A	FF	50-250	N/A
148	MSA	466033	N/A	FF	50-250	N/A

6. Type B

Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for locating the intake of the air supply hose.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

SAR Type B

Approval Number	Approval Issued to	Model Number(s)	Regulator or Valve Location	Face- piece Type	Hose Length feet	Pressure Range psi
77	MSA	457623	N/A	FF	Up to 75	N/A

PARTICULATE RESPIRATORS (21C)

D. Particulate Respirators

1. Single Use

Approval

Approved for respiratory protection against pneumoconiosis- and fibrosis-producing dusts and mists.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Follow the manufacturer's instruction for replacing respirators.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

## PARTICULATE RESPIRATORS - SINGLE USE

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Other Approvals
132	3M	6983 8710 8550	DMA
143	Willson	1400*	
170A	North Safety	7170	
173	3M	8800 8530	DMA
174	Binks	40-150*	
195	Glendale	(SU-1) GR-500	
214	Willson	1410 CP1410 MM1410	DM
215	Binks	40-145	DM
238	Glendale	GR555	D
271	Gerson	1710	DMA
292	Zee Med. Prod.	2303	DMA
293	Safety Supply	Respair 200	DMA
315	Air-Tek	AT-100	DM
347	North	7175	DMA

## 2. Dusts and Mists

### Approval

Approved for respiratory protection against dusts and mists having an exposure limit measured as a time weighted average not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

**Follow manufacturer's instructions for changing filters and replacing respirators.**

Particulate respirators may also be approved for asbestos containing dusts and mists as indicated in the last column.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

PARTICULATE RESPIRATORS - DUSTS AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
132	3M	6983 8550 8710	Su, ON	1	A, S
133	MSA	459440 466252 466253 466254 466530 466531 476729 476730 476731	Rp, Fm, ON	2	
138	MSA	96000 457344	Rp, Fm, ON	1	A
139	Willson	560	Rp, Fm, ON	1	
140	Willson	1210 1210R 1210S 1210SR 1210SS 1210SSS S1210 S1210R S1210S S1210SR S1210SS S1210SSS	Rp, Fm, ON	2	
144	AO	R4030 S4030 R5030 S5030 R6030 S6030	Rp, Fm, ON	2	
147	AO	R1050	Su, ON	1	



PARTICULATE RESPIRATORS - DUSTS AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
151	North Safety	7506* 7506S 7506M 7506L 7706S 7706M 7706L	Rp, Fm, ON	2	A
153	North Safety	7406L* 7406M*	Rp, Fm, ON	1	A
154	Sellstrom	315-F100	Rp, Fm, ON	2	A
154	Cover	1482-F100 1482-S-F100 1482-L-F100	Rp, Fm, ON	2	A
154	Safe-Tex*	236-F100*	Rp, Fm, ON	2	A
154	Eastern	E-450	Rp, Fm, ON	2	A
156	MSA	461683	Rp, Fm, ON	1	
157	Pulmosan	C264* 10045 10213 10234 10294	Rp, Fm, ON	1	
159	MSA	460357	Rp, Fm, ON	1	
162	AO	R2100 R8100 S8100	Rp, Fm, ON	1	
163	Cesco	94R20*	Rp, Fm, ON	2	A
164	Glendale	GR1600 GR2000 GR4000 GR8000	Rp, Fm, ON	2	A

PARTICULATE RESPIRATORS - DUSTS AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
165	Pulmosan	L800* 10171 10174 10216 10297	Rp, Fm, ON	1	
166	AO	R2090N S2090N	Rp, Fm, ON	1	
167	DeVilbiss	MSD-507	Rp, Fm, ON	1	
170	North Safety	7170	Ru, ON	1	
172	Glendale	GR1000 GR1500 GR3000 GR9000	Rp, Fm, ON	1	
173	3M	8800 8530	Su, ON	1	A, S
174	Binks	40-150	Su, ON	1	
175	North Safety	7100 7100V	Rp, Fm, ON	1	
176	3M	9900	Su, ON	1	A
177	Scott	6411-0100* 6411-2100* 6411-3100* 6412-0100* 6413-0100* 6413-2100* 6413-3100* 6421-0100* 6422-0100* 6423-0100*	Rp, Fm, ON	2	A

PARTICULATE RESPIRATORS - DUSTS AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
177 - Cont.		64-D 64E-D 64M-D 64ME-D 64S-D 64SE-D 604035-00			
179	U.S. Safety	150L10 150T10	Rp, Fm, ON	2	
179	Stewart Warner	7932	Rp, Fm, ON	2	
180	Cesco	95RC15 95SMRC15	Rp, Fm, ON	2	
180	Northcott	70-451	Rp, Fm, ON	2	
181	MSA	462240 466212 468011 468012 468013 468014	Rp, Bm, ON	2	
182	Willson	1610 1710	Rp, Fm, FF	2	
188	MSA	461845 466242 466243 471730 471731	Rp, Fm, FF	2	
190	3M	9910	Su, ON	1	A
191	North Safety	7606 7606S 7606N* 7606SN*	Rp, Fm, FF	2	A

PARTICULATE RESPIRATORS - DUSTS AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
197	Racal	AH5	PAPR, HH	1	A
198	Scott	6470-0100* 6480-0100* 65-D 65S-D	Rp, Fm, FF	2	A
206	MSA	467010	Rp, Fm, ON	1	A
207	AO	R7030 S7030	Rp, Fm, FF	2	
211	Racal	AH21 AH15	PAPR, HH	1	A
213	MSA	467559	Rp, Fm, ON	1	
214	Willson	1410 CP1410 MM1410	Ru, Su, ON	1	S
215	Binks	40-145	Ru, Su, ON	1	S
216	Cesco	96RC15	Rp, Fm, FF	2	
217	U.S. Safety	151T10	Rp, Fm, FF	2	
220	MSA	467541	Ru, ON	1	
221	Pulmosan	10303 10306 10309 10312	Rp, Fm, ON	1	
224	3M	9906	Su, ON	1	

PARTICULATE RESPIRATORS - DUSTS AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
225	3M	W-316 W-343*	PAPR, H/H	1	A
232	USD Corp.	2110-00 2210-00 2310-00	Rp, Fm, ON	2	
233	3M	9908	Su, ON	1	
234	3M	9913	Su, ON	1	
235	3M	W-325*	PAPR, HH	1	A, AB
238	Glendale	GR555	Ru, Su, ON	1	
247	3M	9901 6982	Su, ON	1	A
253	Willson	3010 3010R 3010S 3010SR 3010SS 3010SSS S3010 S3010R S3010S S3010SR S3010SS S3010SSS	Rp, Bm, ON	2	
254	Willson	3110 3210	Rp, Bm, FF	2	
261	Glendale	GR7000	Rp, Fm, FF	2	A
264	AO	R1070	Su, ON	1	

## PARTICULATE RESPIRATORS - DUSTS AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
266	AO	R2090AN S2090AN	Rp, Fm, ON	1	
267	DeVilbiss	MSD-512	Rp, Fm, ON	1	A
271	Gerson	1710	Su, ON	1	A, S
274	MSA	472783 472785 472787	Rp, Fm, ON	2	
279	3M	9915	Su, ON	1	
282	Pulmosan	10435	RP, Fm, FF	1	
287	Moldex/Metric	2200	Su, ON	1	A
288	Pirelli	4336.2027	Rp, Fm, ON	2	
289	3M	7218	Rp, Fm, ON	2	A
290	Cesco	AD15*	Su, ON	1	
291	U.S. Safety	AD10	Su, ON	1	
292	Zee Med. Prod.	2303	Su, ON	1	A, S
293	Safety Supply	Respair 200	Su, ON	1	A, S
294	Neoterik	AB5 HH5	PAPR, HH	1	

PARTICULATE RESPIRATORS - DUSTS AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
295	Neoterik	AB6 VB6 VH6 HH6 SH6 SB6	PAPR, HH	1	
298	Racal	DM1 BR DM1 WR DM1 BL DM1 WL DM1 BRU DM1 WRU DM1 BLU DM1 WLU	PAPR, HH	1	A
299	Racal	DM3-S DM3-U	PAPR, HH	1	A
300	Pirelli	4333.2027	Rp, Fm, FF	2	
301	Safety Supply	F-160-F F-200-F F-800-F	Rp, Fm, ON	2	
302	Safety Supply	F-700-F	Rp, Fm, ON	2	
307	Willson	1510 1510R 1510SS	Rp, Fm, ON	2	
308	Willson	3510 3510R 3510SS	Rp, Bm, ON	2	
315	Air-Tek	AT-100	Su, ON	1	S
317	Dunrite	475785	Rp, Fm, ON	1	

PARTICULATE RESPIRATORS - DUSTS AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
318	3M	W425	PAPR, HH	1	A, AB
320	NZ Safety Ltd	NZ1710*	Su, ON	1	
322	Stewart-Warner	70-453	Su, ON	1	
328	American Opt.	R1090	Su, ON	1	
334	American Opt.	R1080	Su, ON	1	
335	American Opt.	R1010	Su, ON	1	
344	Cover	1694-F100	Rp, Fm, FF	2	A
347	North	7175	Su, ON	1	A, S
350	Moldex	2300	Su, ON	1	A
351	American Opt.	AO 1010	Su, ON	1	



### 3. Dusts, Fumes and Mists

#### Approval

Approved for respiratory protection against dusts, fumes and mists having an exposure limit measured as a time weighted average not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot.

#### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow manufacturer's instructions for changing filters and replacing respirators.

Particulate respirators may also be approved for asbestos containing dusts and mists or radon daughters as indicated in the last column.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

PARTICULATE RESPIRATORS - DUSTS, FUMES AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
134	MSA	459438 461011 465360 465936	Rp, Bm, Fm, ON	2	R
141	Willson	1211 1211R 1211S 1211SR 1211SS 1211SSS S1211 S1211R S1211S S1211SR S1211SS S1211SSS	Rp, Fm, ON	2	
161	AO	R4056 S4056 R5056 S5056 R6056 S6056	Rp, Fm, ON	2	R
169	AO	R8156*	Rp, Fm, ON	1	
183	Willson	1611 1711	Rp, Fm, FF	2	
187	MSA	461847 465938	Rp, Fm, FF	2	R
189	Glendale	GR-1626 GR-2026 GR-4026 GR-8026	Rp, Fm, ON	2	
193	U.S. Safety	150T11*	Rp, Fm, ON	2	R, A
194	Cesco	95RC16*	Rp, Fm, ON	2	R, A

PARTICULATE RESPIRATORS - DUSTS, FUMES AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
196	Eastern Cover  Sellstrom	E456 1482-F108 1482-S-F108 1482-L-F108 315-F108	Rp, Fm, ON	2	R, A R, A  R, A
202	3M	9920	Su, ON	1	R, A
203	North Safety	7507* 7507S 7507M 7507L 7707S 7707M 7707L	Rp, Fm, ON	2	
204	North Safety	75BP07* 75BP07M 75BP07L	Rp, Bm, ON	2	
205	North Safety	7607 7607S 7607SN* 7607N*	Rp, Fm, FF	2	
209	Scott	6411-0300* 6413-0300* 6423-0300* 6412-0300* 6422-0300* 6421-0300* 64-F 64E-F 64ME-F 64S-F 64SE-F 64M-F	Rp, Fm, ON	2	R, A
210	Scott	6470-0300* 6480-0300* 65-F 65S-F	Rp, Fm, FF	2	R, A
218	Cesco	96RC16*	Rp, Fm, FF	2	R, A

PARTICULATE RESPIRATORS - DUSTS, FUMES AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
219	U.S. Safety	151T11*	Rp, Fm, FF	2	R, A
222	Willson	1213/R/S/SR/SS/SSS* S1213/R/S/SR/SS/SSS*	Rp, Fm, ON	2	
223	Willson	1613* 1713*	Rp, Fm, FF	2	
230	AO	R7056 S7056	Rp, Fm, FF	2	R
236	USD Corp.	2230-00 2130-00 2330-00	Rp, Fm, ON	2	R
240	US Safety	150T15 150L15	Rp, Fm, ON	2	R
241	Cesco	95RC19 95SMRC19	Rp, Fm, ON	2	R
242	US Safety	151T15	Rp, Fm, FF	2	R
243	Cesco	96RC19	Rp, Fm, FF	2	R
248	Sellstrom	315-G108	Rp, Fm, ON	2	
255	Willson	3011 3011R 3011S 3011SR 3011SS 3011SSS S3011 S3011R S3011S S3011SR S3011SS S3011SSS	Rp, Bm, ON	2	

PARTICULATE RESPIRATORS - DUSTS, FUMES AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
256	Willson	3111 3211	Rp, Bm, FF	2	
262	Glendale	GR7026	Rp, Fm, FF	2	
268	AO	R4050W S4050W R5050W S5050W R6050W S6050W	Rp, Fm, ON	2	R
273	MSA	472754 472763	Rp, Bm, ON	2	R
280	USD Corp.	2140-00 2240-00 2340-00	Rp, Fm, ON	2	R
297	AO	R4050AW S4050AW R5050AW S5050AW R6050AW S6050AW	Rp, Fm, ON	2	
303	Safety Supply	F-200-MF F-160-MF F-800-MF	Rp, Fm, ON	2	
304	Safety Supply	F-700-MF	Rp, Fm, FF	2	
305	AO	R4056A S4056A R5056A S5056A R6056A S6056A	Rp, Fm, ON	2	
306	AO	R7056A S7056A	Rp, Fm, FF	2	

PARTICULATE RESPIRATORS - DUSTS, FUMES AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
309	Willson	1511,1511R 1511SS	Rp, Bm, ON	2	
310	Willson	3511 3511R 3511SS	Rp, Fm, ON	2	
311	Willson	1513 1513R 1513SS	Rp, Fm, ON	2	
312	Willson	3513 3513R 3513SS	Rp, Fm, ON	2	
323	MSA	476412 476413 476414 476415 476416 476417 476418 476419 476420	Rp, Fm, ON	2	R
331	North	7509S 7509M 7509L 7709S 7709M 7709L	Rp, Fm, ON	2	
332	North	75BP09M 75BP09L	Rp, Fm, ON	2	
333	North	7609 7609S	Rp, Fm, FF	2	

PARTICULATE RESPIRATORS - DUSTS, FUMES AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
340	North	7590S/M/L 7790S/M/L	Rp, Fm, ON	2	
341	North	75BP90M 75BP90L	Rp, Fm, ON	2	
342	North	7690 7690S	Rp, Fm, FF	2	
345	Cover	1694-F108	Rp, Fm, FF	2	R, A
348	3M	9925	Su, ON	1	R, A

#### 4. High Efficiency

##### Approval

Approved for respiratory protection against dusts, fumes and mists having an exposure limit measured as a time weighted average less than 0.05 milligram per cubic meter and radionuclides.

##### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow manufacturer's instructions for changing filters and replacing respirators.

Particulate respirators may also be approved for asbestos containing dusts and mists, radon daughters, as indicated in the last column.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.



PARTICULATE RESPIRATORS - HIGH EFFICIENCY

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
135	MSA	459439 461010 465361 465935	Rp, Bm, Fm, ON	2	A
136A	3M	W-250* W-252* W-254* W-260-12 W-260-24* W-261-12 S*/M/L W-261-24 S*/M*/L* W-266-12 W-266-24* W-267* W-278-12 W-278-24* W-350* W-349-12 W-289-12 W-289-24* W-290* W-295-12* W-295-24* W-297* W-349-24*	PAPR, HH	1	R
137	3M	W-251* W-252 W-265-12 W-265-24*	PAPR, HH	1	AB
142	Willson	1212 1212R 1212S 1212SR 1212SS 1212SSS S1212 S1212R S1212S S1212SS S1212SSS S1212SR	Rp, Fm, ON	2	A

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
149	Scott	6160-1050 6160-2050 6170-0050 6170-1050 6170-2050 6150-0050 6150-1050 6150-2050 6155-0050 6155-1050 6155-2050 6160-0050 6165-0050 6165-1050 6165-2050 6175-0050 6175-1050 6175-2050 662-1* 662-2*	Rp, Fm, FF	1	A
150	MSA	88479 457117	Rp, Fm, FF	1	A
152	North Safety	7580* 7580S 7780S 7580M 7780M 7580L 7780L	Rp, Fm, ON	2	A
155	MSA	460185 465937	Rp, Fm, FF	2	A
158	Pulmosan	C263* 10042 10231	Rp, Fm, ON	1	R, A
160	AO	R4057* R5057* R6057*	Rp, Fm, ON	2	

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
168	North Safety	75BP80* 75BP80M 75BP80L	Rp, Bm, ON	2	A
171	North Safety	7680 7680N* 7680S 7680SN*	Rp, Fm, FF	2	A
178	Scott	6411-0050* 6411-2050* 6411-3050* 6412-0050* 6413-0050* 6413-2050* 6413-3050* 6421-0050* 6422-0050* 6423-0050* 604022-50 64-H 64E-H 64M-H 64ME-H 64S-H 64SE-H	Rp, Fm, ON	2	R, A
184	Willson	1612 1712	Rp, Fm, FF	2	A
186	MSA	463353 467963 463354 463355 466607 466608 467964	PAPR, ON, FF	2	A
199	Scott	6422-0050* 6480-0050* 65-H 65S-H	Rp, Fm, FF	2	R, A

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
200	MSA	466095 466096	SAR (combination type C, continuous flow 35 - 40 psig; 25-300 ft. hose)	2	A
201	MSA	466097 466098 466603	SAR (combination type C, continuous flow 35 - 40 psig; 25-300 ft. hose)	2	A
208	AO	R7057*	Rp, Fm, FF	2	
212	Racal	AH3 AH3-1 AH3B AH3B-1 AH17 AH17-1	PAPR, HH	2	R, A
226	Cesco	95RC18 95SMRC18	Rp, Fm, ON	2	R, A
227	Cesco	96RC18	Rp, Fm, FF	2	R, A
228	U.S.Safety	150T12 150L12	Rp, Fm, ON	2	R, A
229	U.S.Safety	151T12	Rp, Fm, FF	2	R, A
231	H.S.Cover	1482-G108 1482-S-G108 1482-L-G108	Rp, Fm, ON	2	R, A
237	Racal	AC3	PAPR, HH	2	R, A
239	3M	9940	Su, ON	1	R, A

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
244	USD Corp.	2190-00 2290-00 2390-00	Rp, Fm, ON	2	A
245	USD Corp.	3290-00	Rp, Fm, FF	2	A
246	3M	W-344	PAPR, HH	1	A
249	AO	R4057A S4057A R5057A S5057A R6057A S6057A	Rp, Fm, ON	2	R, A
250	AO	R7057A S7057A	Rp, Fm, FF	2	R, A
251	North Safety	10030S 10030M	Rp, Fm, ON	2	
252	Neoterik	AB3 HH3	PAPR, HH	1	R, A
257	Willson	3012 3012R 3012S 3012SR 3012SS 3012SSS S3012 S3012R S3012S S3012SR S3012SS S3012SSS	Rp, Bm, ON	2	A
258	Willson	3112 3212	Rp, Bm, FF	2	A

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
263	Neoterik	AB4 HH4 VH4 VB4 SB4 SH4	PAPR, /HH	1	
265	3M	7206	Rp, Fm, ON	2	A, R
269	Neoterik	GET GEE GVT GVE GST GSE	PAPR, HH	1	A, R
270	Neoterik	AB10 HH10 SB10 VB10 VH10 SH10	PAPR, HH	1	A, R
272	MSA	472753 472762	Rp, Bm, ON	2	A
275	Racal	BE 1/P3	PAPR, HH	3	A, R
276	Racal	BE 3/P3 BE 7/P3	PAPR, FF	3	A, R
277	Racal	BE 5/P3	PAPR, HH	3	A, R
278	Racal	BE 6/P3	PAPR, HH	3	A, R
281	Pulmosan	10432	Rp, Fm, FF	1	A, R
283	Pirelli	4333.2017	Rp, Fm, FF	1	

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
284	Pirelli	4337.1100	Rp, Fm, ON	1	
285	Neoterik	AB8 HH8 VB8 VH8 SB8 SH8	PAPR, HH	1	A, R
286	Neoterik	AB7 HH7	PAPR, HH	1	A, R
296	AO	R8157A S8157A	Rp, Fm, ON	1	A, R
313	Willson	1512 1512R 1512SS	Rp, Fm, ON	2	A
314	Willson	3512 3512R 3512SS	Rp, Bm, ON	2	A
316	Draeger	4031013 4031015	Rp, Fm, FF	1	
319	3M	W365	PAPR, HH	1	A,R,AB
321	Racal	BE17/P3	PAPR, HH	3	A, R
324	Racal	BE8/P3	PAPR, ON	3	A, R
325	Glendale	GR-2050 GR-4050 GR-1650 GR-8050	Rp, Fm, ON	2	A, R
326	Glendale	GR-7050	Rp, Fm, FF	2	A, R

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
327	Neoterik	NP1562-1	PAPR, ON	3	R
329	Racal	BE4/P3	PAPR, HH	3	A, R
330	Neoterik	NP1664-1 NP1564-2	PAPR, FF	3	A, R
336	MSA	477978	Rp, Fm, ON Not approved for radionuclides	2	A
337	MSA	477979	Rp, Fm, FF Not approved for radionuclides	2	A
338	MSA	477977	Rp, Bm, ON Not approved for radionuclides	2	A
339	MSA	487976	Rp, Bm, ON Not approved for radionuclides	2	A
343	MSA	478116 478117	SAR combination Type C, continuous flow 35-40 psig, 15 to 300 feet hose	1	A
346	Cover	1694-G108	Rp, Fm, FF	2	A, R
349	Eastern Safety	285	Rp, Fm, ON	2	A, R





CHEMICAL CARTRIDGE RESPIRATORS (23C)

## E. Chemical Cartridges

### 1. Ammonia

#### Approval

Approved for respiratory protection against not more than 300 parts per million ammonia.

#### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
43	MSA	459436 461008	Rp, Fm, Bm, ON	2	DM	MA
63	North	7504* 7504M 7704M 7504S 7704S 7504L 7704L	Rp, Fm, ON	2		MA
64	North	7514* 7514M 7714M 7514S 7714S 7514L 7714L	Rp, Fm, ON	2	DMA	MA
70	Willson	1224 S1224R 1224S S1224SS 1224SR S1224 S1224SSS S1224SR 1224SSS S1224S 1224R 1224SS	Rp, Fm, ON	2		MA
71	Willson	122410 S122410 122410S S122410R 122410SS S122410SR 122410SSS S122410S 122410R S122410SS 122410SR S122410SSS	Rp, Fm, ON	2	DM	MA

CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
109	AO	R4054* R5054* R6054*	Rp, Fm, ON	2		MA
139	Willson	1624 1724	Rp, Fm, FF	2		MA
140	Willson	162410 172410	Rp, Fm, FF	2	DM	MA
147	MSA	461851	Rp, Fm, FF	2	DM	MA
152	MSA	461857	Rp, Fm, FF	2	HA	MA
158	MSA	460849 461015	Rp, Fm, Bm, ON	2	HA	MA
176	North	75BP04* 75BP04M 75BP04L	Rp, Bm, ON	2		MA
177	North	75BP14* 75BP14M 75BP14L	Rp, Bm, ON	2	DMA	MA
182	North	7604 7604S 7604N* 7604SN*	Rp, Fm, FF	2		MA
187	North	7614 7614S 7614N* 7614SN*	Rp, Fm, FF	2	DMA	MA
191	US Safety	150T22 150L22	Fm, ON	2		MA

CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
192	Cesco	95RC65 95SMRC65	Fm, ON	2		MA
193	US Safety	150T27 150L27	Rp, Fm, ON	2	DM	MA
194	Cesco	95RC95 95SMRC95	Rp, Fm, ON	2	DM	MA
213	North	7584M 7784M 7584S 7784S 7584L 7784L 7584*	Rp, Fm, ON	2	HA	MA
214	North	75BP84* 75BP84L 75BP84M	Rp, Fm, ON	2	HA	MA
215	North	7684 7684S	Rp, Fm, FF	2	HA	MA
217	3M	8727 8728	Su, ON	1	DM 8728 only	MA
235	AO	R7054*	Rp, Fm, FF	2		MA
252	Scott	6411-0004* 6412-0004* 6413-0004* 6422-0004* 64-AM 64E-AM 64M-AM 64ME-AM 64S-AM 64SE-AM	Rp, Fm, ON	2		MA

CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
253	Scott	6470-0004* 65-AM 6480-0004* 65S-AM	Rp,Fm, FF	2		MA
254	Scott	6411-0104* 64-AM-D 6413-0104* 64E-AM-D 6421-0104* 64M-AM-D 6423-0104* 64ME-AM-D 6412-0104* 64S-AM-D 6422-0104* 64SE-AM-D	Rp,Fm, ON	2	DMA	MA
255	Scott	6470-0104* 6480-0104 65-AM-D 65S-AM-D	Rp,Fm, FF	2	DMA	MA
256	Scott	6411-0304* 6412-0304* 6413-0304* 6421-0304* 6422-0304* 6423-0304* 64-AM-F 64E-AM-F 64M-AM-F 64ME-AM-F 64S-AM-F 64SE-AM-F	Rp,Fm, ON	2	DFMAR	MA
257	Scott	6470-0304* 6480-0304* 65-AM-F 65S-AM-F	Rp,Fm, FF	2	DFMAR	MA
269	Cesco	96RC95	Rp,Fm, FF	2	DM	MA
270	US Safety	151T27	Rp,Fm, FF	2	DM	MA

CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
279	Cover	1482-G106 1482-S-G106 1482-L-G106	Rp, Fm, ON	2		MA
280	Cover	1482-G106-F100 1482-S-G106-F100 1482-L-G106-F100	Rp, Fm, ON	2	DM	MA
283	Pulmosan	10018 10246 10192 10279	RP, FM, ON	1		MA
284	Pulmosan	10033 10207 10258 10291	RP, FM, ON	1	DM	MA
289	Willson	1234 1234R 1234S 1234SR 1234SS 1234SSS S1234 S1234R S1234S S1234SR S1234SS S1234SSS	RP, FM, ON	2		MA
290	Willson	1634 1734	RP, FM, FF	2		MA



CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
291	Willson	123412 123412R 123412S 123412SR 123412SS 123412SSS S123412 S123412R S123412S S123412SR S123412SS S123412SSS	RP, FM, ON	2	HA	MA
292	Willson	163412 173412	RP, FM, FF	2	HA	MA
314	Cesco	95RC60 95SMRC60	RP, FM, ON	2	HRA	MA
315	US Safety	150T42 150L42	RP, FM, ON	2	HRA	MA
316	Cesco	96RC60	RP, FM, FF	2	HRA	MA
317	US Safety	151T42	RP, FM, FF	2	HRA	MA
319	Sellstrom	315-G106	RP, FM, ON	2		MA
329	AO	R4054A S4054A R5054A S5054A R6054A S6054A	RP, FM, ON	2		MA
330	AO	R7054A S7054A	RP, FM, FF	2		MA

CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
331	AO	R4054AD S4054AD R5054AD S5054AD R6054AD S6054AD	RP, FM, ON	2	DM	MA
332	AO	R7054AD S7054AD	RP, FM, FF	2	DM	MA
347	Eastern	E453	Rp, Fm, ON	2		MA
350	North	10004S 10004M	Su, ON	1		MA
358	North	10014S 10014M	Su, ON	1	DMA	MA
364	Willson	3024 3024S S3024 3024SR S3024S 3024R S3024R S3024SR S3024SS S3024SSS 3024SS 3024SSS	Rp, Bm, ON	2		MA
365	Willson	3124 3224	Rp, Bm, , FF	2		MA

CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
366	Willson	3034 3034S S3034 3034R S3034R 3034SR S3034S S3034SR S3034SS S3034SSS 3034SS 3034SSS	Rp, Bm, ON	2		MA
367	Willson	3134 3234	Rp, Bm, FF	2		MA
378	Willson	302410 S302410 302410S S302410R 302410R S302410SR 302410SR S302410SS S302410SSS 302410SS 302410SSS S302410S	Rp, Bm, ON	2	DM	MA
379	Willson	312410 322410	Rp, Bm, FF	2	DM	MA
384	Willson	303412 S303412 303412R S303412R 303412S S303412S 303412SR S303412SS S303412SSS 303412SS 303412SSS S30314SR	Rp, Bm, ON	2	HA	MA

CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
385	Willson	313412 323412	Rp, Bm, FF	2	HA	MA
403	Glendale	GR1624 GR2024 GR4024 GR8024	Rp, Fm, ON	2		
412	Glendale	GR7024	Rp, Fm, FF	2	DM	
419	AO	R5054HE S5054HE R4054HE S4054HE R6054HE S6054HE	Rp, Fm, ON	2	HRA	MA
420	AO	R7054HE S7054HE	Rp, Fm, FF	2	HRA	MA
422	USD	2104-00 2204-00 2304-00	Rp, Fm, ON	2		MA
423	USD	3204-00	Rp, Fm, ON	2		MA
440	3M	7204	Rp, Fm, ON	2		MA
441	3M	7211	Rp, Fm, ON	2	DMA	MA
442	3M	7215	Rp, Fm, ON	2	HRA	MA
457	Cover	1482-G106-G208 1482-S-G106-G208 1482-L-G106-G208	Rp, Fm, ON	2	HRA	MA
463	MSA	472751	Rp, Bm, ON	2	DM	MA

CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
468	MSA	472758	Rp,Bm, ON	2	HA	MA
498	Pulmosan	10417	Rp,FM, FF	1		MA
502	Pulmosan	10429	Rp, FM, FF	1	DM	MA
513	MSA	469730	Rp,FM, ON	1		MA
515	Pirelli	4336.2022	Rp,FM, ON	2		MA
519	Scott	64-AM-H 64E-AM-H 64M-AM-H 64ME-AM-H 64S-AM-H 64SE-AM-H	Rp,FM, ON	2	HRA	MA
520	Scott	65-AM-H, 65S-AM-H	Rp,FM, FF	2	HRA	MA
528	Pirelli	4332.2022	Rp,Fm,FF	2		
544	Safety Supply	F-200-AM F-160-AM F-800-AM	Rp,FM, ON	2		
545	Safety Supply	F-700-AM	Rp,FM, FF	2		
559	Willson	1524 1524R 1524SS	Rp,FM, ON	2		MA
560	Willson	3524 3524R 3524SS	Rp,FM, ON	2		MA

CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
561	Willson	1534 1534R 1534SS	Rp,FM, ON	2		MA
562	Willson	3534 3534R 3534SS	Rp,FM, ON	2		MA
575	Willson	152410 152410R 152410SS	Rp,FM, ON	2	DM	MA
576	Willson	352410 352410R 352410SS	Rp,FM, ON	2	DM	MA
581	Willson	153412 153412R 153412SS	Rp,FM, ON	2	HA	MA
582	Willson	353412 353412R 353412SS	Rp,FM, ON	2	HA	MA
589	Racal	BE1/K	PAPR, HH	3		MA
590	Racal	BE3/KC BE7/KC	PAPR, FF	3		MA
591	Racal	BE5/K	PAPR, HH	3		MA
592	Racal	BE6/K	PAPR, HH	3		MA
612	Racal	BE8/K	PAPR, ON	3		MA

CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
623	Glendale	GR-1624-50 GR-2024-50 GR-4024-50 GR-8024-50	RP,FM, ON	2	HRA	MA
624	Glendale	GR-7024-50	RP,FM, FF	2	HRA	MA
628	Neoterik	NP-1562-8	PAPR, ON	3		MA
633	Racal	BE4/K	PAPR, HH	3		MA
639	Neoterik	NP1664-8 NP1564-8	PAPR, FF	3		MA
641	Racal	BE1/KP3	PAPR, HH	3	HRA	MA
642	Racal	BE3/KP3 BE7/KP3	PAPR, FF	3	HRA	MA
643	Racal	BE4/KP3	PAPR, HH	3	HRA	MA
644	Racal	BE5/KP3	PAPR, HH	3	HRA	MA
645	Racal	BE6/KP3	PAPR, HH	3	HRA	MA
646	Racal	BE8/KP3	PAPR, ON	3	HRA	MA
658	North	7594S/M/L 7794S/M/L	RP,Fm, ON	2	DFM	MA
659	North	75BP94M	RP,Bm, ON	2	DFM	MA
660	North	7694 7694S	RP,Fm, FF	2	DFM	MA
666	Cover	1694-G106	RP,Fm, FF	2		MA

CHEMICAL CARTRIDGES - AMMONIA

Approval Number	Approval TC-23C-	Respirator Model	Number and Facepiece Type	Other of Cartridges	Gas Approvals DFM	and Vapor
667	Cover		RP, Fm, FF 1694-G106-F100	2	DM	MA
674	Cover		RP, Fm, FF 1694-G106-G208	2	HRA	MA



## 2. Methyl Amine

### Approval

Approved for respiratory protection against not more than 100 parts per million methyl amine.

### Limitations

Not for use in atmospheres immediately dangerous to life and health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - METHYL AMINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
43	MSA	459436 461008	Rp, Fm, Bm, ON	2	DM	NH3
63	North	7504* 7504M 7704M 7504S 7704S 7504L 7704L	Rp, Fm, ON	2		NH3
64	North	7514* 7514M 7714M 7514S 7714S 7514L 7714L	Rp, Fm, ON	2	DMA	NH3
70	Willson	1224 S1224R 1224S S1224SS 1224SR S1224 S1224SSS S1224SR 1224SSS S1224S 1224R 1224SS	Rp, Fm, ON	2		NH3
71	Willson	122410 S122410 122410S S122410R 122410SS S122410SR 122410SSS S122410S 122410R S122410SS 122410SR S122410SSS	Rp, Fm, ON	2	DM	NH3

CHEMICAL CARTRIDGES - METHYL AMINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
109	AO	R4054* R5054* R6054*	Rp, Fm, ON	2		NH3
139	Willson	1624 1724	Rp, Fm, FF	2		NH3
140	Willson	162410 172410	Rp, Fm, FF	2	DM	NH3
147	MSA	461851	Rp, Fm, FF	2	DM	NH3
152	MSA	461857	Rp, Fm, FF	2	HA	NH3
158	MSA	460849 461015	Rp, Fm, Bm, ON	2	HA	NH3
176	North	75BP04* 75BP04M 75BP04L	Rp, Bm, ON	2		NH3
177	North	75BP14* 75BP14M 75BP14L	Rp, Bm, ON	2	DMA	NH3
182	North	7604 7604S 7604N* 7604SN*	Rp, Fm, FF	2		NH3
187	North	7614 7614S 7614N* 7614SN*	Rp, Fm, FF	2	DMA	NH3
191	US Safety	150T22 150L22	Fm, ON	2		NH3

CHEMICAL CARTRIDGES - METHYL AMINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
192	Cesco	95RC65 95SMRC65	Fm, ON	2		NH3
193	US Safety	150T27 150L27	Rp, Fm, ON	2	DM	NH3
194	Cesco	95RC95 95SMRC95	Rp, Fm, ON	2	DM	NH3
213	North	7584M 7784M 7584S 7784S 7584L 7784L 7584*	Rp, Fm, ON	2	HA	NH3
214	North	75BP84* 75BP84L 75BP84M	Rp, Bm, ON	2	HA	NH3
215	North	7684 7684S	Rp, Fm, FF	2	HA	NH3
217	3M	8727 8728	Su, ON	1	DM 8728 only	NH3
235	AO	R7054*	Rp, Fm, FF	2		NH3
252	Scott	6411-0004* 6412-0004* 6413-0004* 6422-0004* 64-AM 64E-AM 64M-AM 64ME-AM 64S-AM 64SE-AM	Rp, Fm, ON	2		NH3

CHEMICAL CARTRIDGES - METHYL AMINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
253	Scott	6470-0004* 6480-0004* 65-AM 65S-AM	Rp,Fm, FF	2		NH3
254	Scott	6411-0104* 6412-0104* 6413-0104* 6421-0104* 6422-0104* 6423-0104* 64-AM-D 64E-AM-D 64M-AM-D 64ME-AM-D 64S-AM-D 64SE-AM-D	Rp,Fm, ON	2	DMA	NH3
255	Scott	6470-0104* 6480-0104 65-AM-D 65S-AM-D	Rp,Fm, FF	2	DMA	NH3
256	Scott	6411-0304* 6412-0304* 6413-0304* 6421-0304* 6422-0304* 6423-0304* 64-AM-F 64E-AM-F 64M-AM-F 64ME-AM-F 64S-AM-F 64SE-AM-F	Rp,Fm, ON	2	DFMAR	NH3
257	Scott	6470-0304* 6480-0304* 65-AM-F 65S-AM-F	Rp,Fm, FF	2	DFMAR	NH3
269	Cesco	96RC95	Rp,Fm, FF	2	DM	NH3

CHEMICAL CARTRIDGES - METHYL AMINE

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
270	US Safety	151T27	Rp, Fm, FF	2	DM	NH3
279	Cover	1482-G106 1482-S-G106 1482-L-G106	Rp, Fm, ON	2		NH3
280	Cover	1482-G106-F100 1482-S-G106-F100 1482-L-G106-F100	Rp, Fm, ON	2	DM	NH3
283	Pulmosan	10018 10192 10246 10279	RP, FM, ON	1		NH3
284	Pulmosan	10033 10207 10258 10291	RP, FM, ON	1	DM	NH3
289	Willson	1234 1234R 1234S 1234SR 1234SS 1234SSS S1234 S1234R S1234S S1234SR S1234SS S1234SSS	RP, FM, ON	2		NH3
290	Willson	1634 1734	RP, FM, FF	2		NH3

CHEMICAL CARTRIDGES - METHYL AMINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
291	Willson	123412 123412R 123412S 123412SR 123412SS 123412SSS S123412 S123412R S123412S S123412SR S123412SS S123412SSS	RP, FM, ON	2	HA	NH3
292	Willson	163412 173412	RP, FM, FF	2	HA	NH3
314	Cesco	95RC60 95SMRC60	RP, FM, ON	2	HRA	NH3
315	US Safety	150T42 150L42	RP, FM, ON	2	HRA	NH3
316	Cesco	96RC60	RP, FM, FF	2	HRA	NH3
317	US Safety	151T42	RP, FM, FF	2	HRA	NH3
319	Sellstrom	315-G106	RP, FM, ON	2		MA
329	AO	R4054A S4054A R5054A S5054A R6054A S6054A	RP, FM, ON	2		NH3
330	AO	R7054A S7054A	RP, FM, FF	2		NH3

CHEMICAL CARTRIDGES - METHYL AMINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
331	AO	R4054AD S4054AD R5054AD S5054AD R6054AD S6054AD	RP, FM, ON	2	DM	NH3
332	AO	R7054AD S7054AD	RP, FM, FF	2	DM	NH3
347	Eastern	E453	Rp, Fm, ON	2		NH3
350	North	10004S 10004M	Su, ON	1		NH3
358	North	10014S 10014M	Su, ON	1	DMA	NH3
364	Willson	3024 3024S S3024 3024SR S3024S 3024R S3024R S3024SR S3024SS S3024SSS 3024SS 3024SSS	Rp, Bm, ON	2		NH3
365	Willson	3124 3224	Rp, Bm, , FF	2		NH3



CHEMICAL CARTRIDGES - METHYL AMINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
366	Willson	3034 3034S S3034 3034R S3034R 3034SR S3034S S3034SR S3034SS S3034SSS 3034SS 3034SSS	Rp, Bm, ON	2		NH3
367	Willson	3134 3234	Rp, Bm, FF	2		NH3
378	Willson	302410 S302410 302410S S302410R 302410R S302410SR 302410SR S302410SS S302410SSS 302410SS 302410SSS S302410S	Rp, Bm, ON	2	DM	NH3
379	Willson	312410 322410	Rp, Bm, FF	2	DM	NH3
384	Willson	303412 S303412 303412R S303412R 303412S S303412S 303412SR S303412SS S303412SSS 303412SS 303412SSS S30314SR	Rp, Bm, ON	2	HA	NH3

CHEMICAL CARTRIDGES - METHYL AMINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
385	Willson	313412 323412	Rp,Bm, FF	2	HA	NH3
419	AO	R5054HE S5054HE R4054HE S4054HE R6054HE S6054HE	Rp,Fm, ON	2	HRA	NH3
420	AO	R7054HE S7054HE	Rp,Fm, FF	2	HRA	NH3
422	USD	2104-00 2204-00 2304-00	Rp,Fm, ON	2		NH3
423	USD	3204-00	Rp,Fm, ON	2		NH3
440	3M	7204	Rp,Fm, ON	2		NH3
441	3M	7211	Rp,Fm, ON	2	DMA	NH3
442	3M	7215	Rp,Fm, ON	2	HRA	NH3
457	Cover	1482-G106-G208 1482-S-G106-G208 1482-L-G106-G208	Rp,Fm, ON	2	HRA	NH3
463	MSA	472751	Rp,Bm, ON	2	DM	NH3
468	MSA	472758	Rp,Bm, ON	2	HA	NH3
498	Pulmosan	10417	Rp,FM, FF	1		NH3
502	Pulmosan	10429	Rp, FM, FF	1	DM	NH3

CHEMICAL CARTRIDGES - METHYL AMINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
513	MSA	469730	Rp,FM, ON	1		NH3
515	Pirelli	4336.2022	Rp,FM, ON	2		NH3
519	Scott	64-AM-H 64E-AM-H 64M-AM-H 64ME-AM-H 64S-AM-H 64SE-AM-H	Rp,FM, ON	2	HRA	NH3
520	Scott	65-AM-H, 65S-AM-H	Rp,FM, FF	2	HRA	NH3
544	Safety Supply	F-200-AM F-160-AM F-800-AM	Rp,FM, ON	2		NH3
545	Safety Supply	F-700-AM	Rp,FM, FF	2		NH3
559	Willson	1524 1524R 1524SS	Rp,FM, ON	2		NH3
560	Willson	3524 3524R 3524SS	Rp,FM, ON	2		NH3
561	Willson	1534 1534R 1534SS	Rp,FM, ON	2		NH3
562	Willson	3534 3534R 3534SS	Rp,FM, ON	2		NH3

CHEMICAL CARTRIDGES - METHYL AMINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
575	Willson	152410 152410R 152410SS	Rp,FM, ON	2	DM	NH3
576	Willson	352410 352410R 352410SS	Rp,FM, ON	2	DM	NH3
581	Willson	153412 153412R 153412SS	Rp,FM, ON	2	HA	NH3
582	Willson	353412 353412R 353412SS	Rp,FM, ON	2	HA	NH3
589	Racal	BE1/K	PAPR, HH	3		NH3
590	Racal	BE3/KC BE7/KC	PAPR, FF	3		NH3
591	Racal	BE5/K	PAPR, HH	3		NH3
592	Racal	BE6/K	PAPR, HH	3		NH3
612	Racal	BE8/K	PAPR, ON	3		NH3
623	Glendale	GR-1624-50 GR-2024-50 GR-4024-50 GR-8024-50	RP,FM, ON	2	HRA	NH3
624	Glendale	GR-7024-50	RP,FM, FF	2	HRA	NH3
628	Neoterik	NP-1562-8	PW, ON	3		NH3
633	Racal	BE4/K	PAPR	3		NH3

CHEMICAL CARTRIDGES - METHYL AMINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
639	Neoterik	NP1664-8 NP1564-8	PAPR	3		NH3
641	Racal	BE1/KP3	PAPR, HH	3	HRA	NH3
642	Racal	BE3/KP3 BE7/KP3	PAPR, FF	3	HRA	NH3
643	Racal	BE4/KP3	PAPR, HH	3	HRA	NH3
644	Racal	BE5/KP3	PAPR, HH	3	HRA	NH3
645	Racal	BE6/KP3	PAPR, HH	3	HRA	NH3
646	Racal	BE8/KP3	PAPR, ON	3	HRA	NH3
658	North	7594S/M/L 7794S/M/L	RP, Fm, ON	2	DFM	NH3
659	North	75BP94M	RP, Bm, ON	2	DFM	NH3
660	North	7694 7694S	RP, Fm, FF	2	DFM	NH3
666	Cover	1694-G104-F100	RP, Fm, FF	2		NH3
667	Cover	1694-G106-F100	RP, Fm, FF	2	DM	NH3
674	Cover	1694-G106-G208	RP, Fm, FF	2	HRA	NH3

### 3. Chlorine

#### Approval

Approved as respiratory protection against not more than 10 parts per million chlorine.

#### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
41	MSA	459434 461006	Rp, Fm, Bm, ON	2	DM	SO2/HCl/ Formaldehyde
47	MSA	459435 461007	Rp, Fm, Bm, ON	2	DM	OV/SO2/HCl Formaldehyde
55	Scott	70-CL Replaced by	Es, MP TC-23C-492	1		
60	AO	R4052* R5052* R6052*	Rp, Fm, ON	2		SO2/HCl
65	North	7503* 7503M 7703M 7503S 7703S 7503L 7703L	Rp, Fm, ON	2		OV/SO2/HCl
66	North	7513* 7513M 7713M 7513S 7713S 7513L 7713L	Rp, Fm, ON	2	DMA	OV/SO2/HCl
76	Willson	1225 S1225 1225S S1225S 1225SR S1225SR S1225R S1225SS S1225SSS 1225SSS 1225R 1225SS	Rp, Fm, ON	2		OV/SO2/HCl

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
77	Willson	122510 122510R 122510S 122510SR 122510SS 122510SSS S122510 S122510R S122510S S122510SR S122510SS S122510SSS	Rp, Fm, ON	2	DM	OV/SO2/HCl
82	AO	R4053* R5053* R6053*	Rp, Fm, ON	2		OV/SO2/HCl
85	AO	R8153 S8153	Rp, Fm, ON	1		OV/SO2/HCl
104	North	75BP03* 75BP03M 75BP03L	Rp, Bm, ON	2		OV/SO2/HCl
105	North	75BP13* 75BP13M 75BP13L	Rp, Bm, ON	2	DMA	OV/SO2/HCl
108	MSA	460400 460378	Es, M	1	DM	HCl
111	AO	R9722	Es, M	1	DM	SO2/HCl



CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
115	Scott	6411-0001* 6413-0001* 6421-0001* 6422-0001* 6423-0001* 6412-0001* 64-AG 64E-AG 64M-AG 64ME-AG 64S-AG 64SE-AG	Rp, Fm, ON	2		SO2/HCl Formaldehyde
116	Scott	6411-0101* 6413-0101* 6421-0101* 6423-0101* 6412-0101* 6422-0101* 64-AG-D 64E-AG-D 64M-AG-D 64ME-AG-D 64S-AG-D 64SE-AG-D	Rp, Fm, ON	2	DMA	SO2/HCl Formaldehyde
122	North	7542* 7542M*	Rp, Fm, ON	2	DMA	SO2/HCl
129	3M	8714 8720	Su, ON	1	DM 8720 only	SO2/HCl
141	Willson	1625 1725	Rp, Fm, FF	2		OV/SO2/HCl
142	Willson	162510 172510	Rp, Fm, FF	2	DM	OV/SO2/HCl
145	MSA	461849	Rp, Fm, FF	2	DM	SO2/HCl formaldehyde

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
146	MSA	461850	Rp, Fm, FF	2	DM	OV/SO2/HCl formaldehyde
150	MSA	461854	Rp, Fm, FF	2	HA	SO2/HCl formaldehyde
153	MSA	461855	Rp, Fm, FF	2	HA	OV/SO2/HCl formaldehyde
154	MSA	461856	Rp, Fm, FF	2	DFMR	OV/SO2/HCl formaldehyde
156	MSA	461835 462239	Rp, Fm, Bm, ON	2	HA	SO2/HCl formaldehyde
159	MSA	460847 461013	Rp, Fm, Bm, ON	2	HA	OV/SO2/HCl formaldehyde
160	MSA	460848 461014	Rp, Fm, Bm, ON	2	DFMR	OV/SO2/HCl formaldehyde
163	Cover	1482-G104 1482-S-G104 1482-L-G104 1482-G104-F100 1482-S-G104-F100 1482-L-G104-F100	Rp, Fm, ON	2	DMA  1482-G104-F100 only 1482-S-G104-F100 only 1482-L-G104-F100 only	OV/SO2/HCl
163	Sellstrom	315-G104 315-G104-F100	Rp, Fm, ON	2	DMA 315-G104-F100 only	OV/SO2/HCl
163	Eastern	E-452	Rp, Fm, ON	2	DMA	OV/SO2/HCl
164	Cesco	95RC55 95SMRC55	Fm, ON	2		SO2/HCl

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
165	Cesco	95RC75 95SMRC75	Rp, Fm, ON	2	DM	SO2/HCl
166	Cesco	95RC85 95SMRC85	Fm, ON	2		OV/SO2/HCl
167	Cesco	95RC105 95SMRC105	Rp, Fm, ON	2	DM	OV/SO2/HCl
168	US Safety	150T21 150L21	Fm, ON	2		SO2/HCl
169	US Safety	150T25 150L25	Rp, Fm, ON	2	DM	SO2/HCl
170	US Safety	150T26 150L26	Fm, ON	2		OV/SO2/HCl
171	US Safety	150T28 150L28	Rp, Fm, ON	2	DM	OV/SO2/HCl
172	Scott	6411-0015* 64-OA 6413-0015* 64E-OA 6421-0015* 64M-OA 6423-0015* 64ME-OA 6412-0015* 64S-OA 6422-0015* 64SE-OA	Fm, ON	2		OV/SO2/HCl formaldehyde

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
174	Scott	6411-0115* 6412-0115* 6413-0115* 6421-0115* 6422-0115* 6423-0115* 64-OA-D 64E-OA-D 64M-OA-D 64ME-OA-D 64S-OA-D 64SE-OA-D 604032-15*	Fm, ON	2	DMA	OV/SO2/HCl formaldehyde
179	North	75BP42* 75BP42M*	Rp, Bm, ON	2	DMA	SO2/HCl
181	North	7603 7603S 7603N* 7603SN*	Rp, Fm, FF	2		OV/SO2/HCl
183	Glendale	GR-1622 GR-2022 GR-4022 GR-8022	Rp, Fm, ON	2		SO2/HCl
184	Glendale	GR-1622-10 GR-2022-10 GR-4022-10 GR-8022-10	Rp, Fm, ON	2	DM	SO2/HCl
186	North	7613 7613S 7613N* 7613SN*	Rp, Fm, FF	2	DMA	OV/SO2/HCl
189	North	7642* 7642S* 7642N* 7642SN*	Rp, Fm, FF	2	DMA	SO2/HCl

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
195	3M	8721 8722	Su, ON	1	DM 8722 only	
196	3M	8723 8724	Su, ON	1	DM 8724 only	OV
203	Pulmosan	10012 10186 10240 10273	Rp, Fm, ON	1		SO2/HCl
207	North	7582M 7782M 7582S 7782S 7582L 7782L 7582*	Rp, Fm, ON	2	HA	SO2/HCl
208	North	75BP82* 75BP82M 75BP82L	Rp, Bm, ON	2	HA	SO2/HCl
209	North	7682 7682S	Rp, Fm, FF	2	HA	SO2/HCl
210	North	7583M 7783M 7583S 7783S 7583L 7783L 7583*	Rp, Fm, ON	2	HA	SO2/HCl
211	North	75BP83* 75BP83M 75BP83L	Rp, Bm, ON	2	HA	SO2/HCl
212	North	7683S 7683	Rp, Fm, FF	2	HA	SO2/HCl

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
216	3M	8725 8726	Su, ON	1	DM 8726 only	OV/SO2/HCl
218	Scott	6470-0101* 6480-0101* 65-AG-D 65S-AG-D	Rp, Fm, FF	2	DMA	SO2/HCl formaldehyde
221	Scott	6470-0015* 6480-0015* 65-OA 65S-OA	Rp, Fm, FF	2		OV/SO2/HCl formaldehyde
222	Scott	6470-0115* 6480-0115* 65-OA-D 65S-OA-D	Rp, Fm, FF	2	DMA	OV/SO2/HCl formaldehyde
225	Scott	6470-0001 6480-0001 65-AG 65S-AG	Rp, Fm, FF	2		SO2/HCl formaldehyde
226	North	7502* 7502S 7702S 7502M 7702L 7502L 7702M	Rp, Fm, ON	2		SO2/HCl formaldehyde
227	North	75BP02* 75BP02M 75BP02L	Rp, Bm, ON	2		SO2/HCl formaldehyde
228	North	7602 7602S 7602N* 7602SN*	Rp, Fm, FF	2		SO2/HCl formaldehyde

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
229	North	7512* 7512S 7512M 7512L 7712S 7712M 7712L	Rp, Fm, ON	2	DMA	SO2/HCl formaldehyde
230	North	75BP12* 75BP12M 75BP12L	Rp, Bm, ON	2	DMA	SO2/HCl formaldehyde
231	North	7612 7612S 7612N* 7612SN*	Rp, Fm, FF	2	DMA	SO2/HCl formaldehyde
232	Pulmosan	10027 10201 10252 10285	Rp, Fm, ON	1	DM	SO2/HCl
233	AO	R7052*	Rp, Fm, FF	2		SO2/HCl
234	AO	R7053*	Rp, Fm, FF	2		OV/SO2/HCl
241	Glendale	GR-1623 GR-2023 GR-4023 GR-8023	Rp, Fm, ON	2		OV/SO2/HCl
242	Glendale	GR1623-10 GR2023-10 GR4023-10 GR8023-10	Rp, Fm, ON	2	DM	OV/SO2/HCl

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
246	Scott	6411-0301* 64-AG-F 6413-0301* 64E-AG-F 6421-0301* 64M-AG-F 6423-0301* 64ME-AG-F 6412-0301* 64S-AG-F 6422-0301* 64SE-AG-F	Rp,Fm, ON	2	DFMAR	SO2/HCl formaldehyde
247	Scott	6470-0301* 6480-0301* 65-AG-F 65S-AG-F	Rp,Fm, FF	2	DFMAR	SO2/HCl formaldehyde
250	Scott	6411-0315* 64-OA-F 6413-0315* 64M-OA-F 6421-0315* 64ME-OA-F 6423-0315* 64E-OA-F 6412-0315* 64S-OA-F 6422-0315* 64SE-OA-F	Rp,Fm, ON	2	DFMAR	OV/SO2/HCl formaldehyde
251	Scott	6470-0315* 6480-0315* 65-OA-F 65S-OA-F	Rp,Fm, FF	2	DFMAR	OV/SO2/HCl formaldehyde
260	MSA	466903	Rp,Fm, ON	2	DM	OV/SO2/HCl formaldehyde
261	MSA	466902	Rp,Bm, ON	2	DM	OV/SO2/HCl formaldehyde



CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
262	MSA	466904	Rp, Fm, FF	2	DM	OV/SO2/HCl formaldehyde
265	Cesco	96RC75	Rp, Fm, FF	2	DM	SO2/HCl
266	US Safety	151T25	Rp, Fm, FF	2	DM	SO2/HCl
267	Cesco	96RC105	Rp, Fm, FF	2	DM	OV/SO2/HCl
268	US Safety	151T28	Rp, Fm, FF	2	DM	OV/SO2/HCl
281	AO	R4563 S4563 R5563 S5563 R6563 S6563	Rp, Fm, ON	2	DFM	OV/SO2/HCl pesticides
282	AO	R7563 S7563	Rp, Fm, FF	2	DFM	OV/SO2/HCl pesticides
288	North	7902	Es, M	1		SO2/HCl
298	Willson	1235 1235S S1235 1235SR S1235R S1235S S1235SS S1235SSS 1235SSS 1235R 1235SS 1235R	Rp, Fm, ON	2		OV/SO2/HCl

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
299	Willson	123512 S123512 123512S S123512R 123512SR S123512S S123512SS S123512SSS 123512SSS 123512R 123512SS S123512SR	Rp, FM, ON	2	HA	OV/SO2/HCl
300	Willson	1635 1735	Rp, FM, FF	2		OV/SO2/HCl
301	Willson	163512 173512	Rp, FM, FF	2	HA	OV/SO2/HCl
306	Cesco	95RC50 95SMRC50	Rp, FM, ON	2	HRA	SO2/HCl
307	US Safety	150T41 150L41	Rp, FM, ON	2	HRA	SO2/HCl
308	Cesco	96RC50	Rp, FM, FF	2	HRA	SO2/HCl
309	US Safety	151T41	Rp, FM, FF	2	HRA	SO2/HCl
310	Cesco	95RC80 95SMRC80	Rp, FM, ON	2	HRA	OV/SO2/HCl
311	US Safety	150T46 150L46	Rp, FM, ON	2	HRA	OV/SO2/HCl
312	Cesco	96RC80	Rp, FM, FF	2	HRA	OV/SO2/HCl
313	US Safety	151T46	Rp, FM, FF	2	HRA	OV/SO2/HCl

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
318	USD	2203-00 2103-00 2303-00	Rp, FM, ON	2		OV/SO2/HCl
320	Pulmosan	10015 10189 10243 10276	Rp, FM, ON	1		OV/SO2/HCl
324	Pulmosan	10030 10255 10204 10288	Rp, FM, ON	1	DM	OV/SO2/HCl
339	AO	R4052A S4052A R5052A S5052A R6052A S6052A	Rp, Fm, ON	2		SO2/HCl
340	AO	R7052A S7052A	Rp, Fm, FF	2		SO2/HCl
341	AO	R4052AD R5052AD R6052AD S4052AD S5052AD S6052AD	Rp, Fm, ON	2	DM	SO2/HCl
342	AO	R7052AD S7052AD	Rp, Fm, FF	2	DM	SO2/HCl
343	AO	R4053A S4053A R5053A S5053A R6053A S6053A	Rp, Fm, ON	2		OV/SO2/HCl C102
344	AO	R7053A S7053A	Rp, Bm, FF	2		OV/SO2/HCl C102

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
345	AO	R4053AD S4053AD R5053AD S5053AD R6053AD S6053AD	Rp, Fm, ON	2	DM	OV/SO2/HCl
346	AO	R7053AD S7053AD	Rp, Fm, FF	2	DM	OV/SO2/HCl
352	North	10003S 10003M	Su, ON	1		OV/SO2/HCl
353	North	10002S 10002M	Su, ON	1		SO2/HCl
356	North	10012S 10012M	Su, ON	1	DMA	SO2/HCl
357	North	10013S 10013M	Su, ON	1	DMA	OV/SO2/HCl
359	Cover	1482-G102 1482-S-G102 1482-L-G102	Rp, Fm, ON	2		SO2/HCl
368	Willson	3025 3025S S3025 3025R S3025R 3025SR S3025S 3025SSS S3025SS S305SSS 3025SS 3025SR	Rp, Bm, ON	2		OV/SO2/HCl
369	Willson	3125 3225	Rp, Bm, FF	2		OV/SO2/HCl

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
370	Willson	3035 3035S S3035 3035R S3035S 3035SR S3035R S3035SR S3035SS S3035SSS 3035SS 3035SSS	Rp, Bm, ON	2		OV/SO2/HCl
371	Willson	3135 3235	Rp, Bm, FF	2		OV/SO2/HCl
380	Willson	302510 S302510 302510R S302510S 302510S S302510R 302510SR S302510SR S302510SS S302510SSS 302510SS 302510SSS	Rp, Bm, ON	2	DM	OV/SO2/HCl
381	Willson	312510 322510	Rp, Bm, FF	2	DM	OV/SO2/HCl
386	Willson	303512 303512R 303512S 303512SR 303512SS 303512SSS S303512 S303512R S303512S S303512SR S303512SS S303512SSS	Rp, Bm, ON	2	HA	OV/SO2/HCl

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
387	Willson	313512 323512	Rp,Bm, FF	2	HA	OV/SO2/HCl
393	USD	2133-00 2233-00 2333-00	Rp,Fm, ON	2	DFMR	OV/SO2/HCl
394	USD	3233-00	Rp,Fm, FF	2	DFMR	OV/SO2/HCl
395	USD	2192-00 2292-00 2392-00	Rp,Fm, ON	2	HA	SO2/HCl
396	USD	3292-00	Rp,Fm, FF	2	HA	SO2/HCl
407	Glendale	GR7022	Rp,Fm, FF	2		SO2/HCl
408	Glendale	GR7022-10	Rp,Fm, FF	2	DM	SO2/HCl
410	Glendale	GR7023	Rp,Fm, FF	2		OV/SO2/HCl
411	Glendale	GR7023-10	Rp,Fm, FF	2	DM	OV/SO2/HCl
415	AO	R4052HE S4052HE R5052HE S5052HE R6052HE S6052HE	Rp,Fm, ON	2	HRA	OV/SO2/HCl
416	AO	R7052HE S7052HE	Rp,Fm, FF	2	HRA	OV/SO2/HCl
417	AO	R4053HE S4053HE R5053HE S5053HE R6053HE S6053HE	Rp,Fm, ON	2	HRA	OV/SO2/HCl ClO2

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
418	AO	R7053HE S7053HE	Rp, Fm, FF	2	HRA	OV/SO2/HCl ClO2
421	Cover	1482-G104-G208 1482-S-G104-G208 1482-L-G104-G208	Rp, Fm, ON	2	HRA	OV/SO2/HCl
429	USD	3202-00	Rp, Fm, FF	2		SO2/HCl
430	USD	2102-00 2202-00 2302-00	Rp, Fm, ON	2		SO2/HCl
431	USD	2112-00 2212-00 2312-00	Rp, Fm, ON	2	DM	SO2/HCl
432	USD	3212-00	Rp, Fm, FF	2	DM	SO2/HCl
433	USD	2113-00 2213-00 2313-00	Rp, Fm, ON	2	DM	OV/SO2/HCl formaldehyde
434	USD	3213-00	Rp, Fm, ON	2	DM	OV/SO2/HCl formaldehyde
443	3M	7202	Rp, Fm, ON	2		SO2/HCl
444	3M	7208	Rp, Fm, ON	2	DMA	SO2/HCl
445	3M	7213	Rp, Fm, ON	2	HRA	SO2/HCl
446	3M	7203	Rp, Fm, ON	2		OV/SO2/HCl
447	3M	7209	Rp, Fm, ON	2	DMA	OV/SO2/HCl

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
448	3M	7214	Rp, Fm, ON	2	HRA	OV/SO2/HCl
449	North	7912	Es, M	1	DM	SO2/HCl
450	USD	2193-00 2293-00 2393-00	Rp, Fm, ON	2	HA	OV/SO2/HCl
451	USD	3293-00	Rp, Fm, FF	2	HA	OV/SO2/HCl
454	USD	3203-00	Rp, Fm, FF	2		OV/SO2/HCl formaldehyde
459	Cover	1482-G102-G208 1482-S-G102-G208 1482-L-G102-G208	Rp, Fm, ON	2	HRA	SO2/HCl
461	MSA	472749	Rp, Bm, ON	2	DM	SO2/HCl formaldehyde
462	MSA	472750	Rp, Bm, ON	2	DM	OV/SO2/HCl formaldehyde
466	MSA	472756	Rp, Bm, ON	2	HA	OV/SO2/HCl formaldehyde
467	MSA	472757	Rp, Bm, ON	2	DFMR	OV/SO2/HCl formaldehyde
470	MSA	472760	Rp, Bm, ON	2	HA	SO2/HCl formaldehyde
472	MSA	472764	Rp, Bm, ON	2	DM	OV/SO2/HCl
479	Racal	BE1/B	PAPR, HH	3		HCl



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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
480	Racal	BE5/B	PAPR,HH	3		HC1
481	Racal	BE6/B	PAPR,HH	3		HC1
487	Sellstrom	315-G102-G208	Rp,FM, ON	2	HRA	SO2/HC1
492	Scott	70-AG	ES, MP	1		HC1/H2S
496	Pulmosan	10411	Rp,FM, FF	1		SO2/HC1
497	Pulmosan	10414	Rp, FM, FF	1		OV/SO2/HC1
500	Pulmosan	10423	Rp, FM, FF	1	DM	SO2/HC1
501	Pulmosan	10426	Rp, FM, FF	1	DM	OV/SO2/HC1
511	MSA	469728	Rp,FM, ON	1	DM	OV/SO2/HC1 formaldehyde
512	MSA	469729	Rp,FM, ON	1	DM	OV/SO2/HC1 formaldehyde
514	MSA	471914 476337 476338	ES, MP	1	DM	SO2/HC1/H2S
516	Pirelli	4336.2023	Rp,FM, ON	2		SO2/HC1
517	Scott	64-AG-H 64E-AG-H 64M-AG-H 64ME-AG-H 64S-AG-H 64SE-AG-H	Rp,FM, ON	2	HRA	SO2/HC1 formaldehyde
518	Scott	65-AG-H 65S-AG-H	Rp,FM, FF	2	HRA	SO2/HC1 formaldehyde

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
521	Scott	64-OA-H 64E-OA-H 64M-OA-H 64ME-OA-H 64S-OA-H 64SE-OA-H	Rp,FM, ON	2	HRA	OV/SO2/HCl formaldehyde
522	Scott	65-OA-H 65S-OA-H	Rp,FM, FF	2	HRA	OV/SO2/HCl formaldehyde
525	Scott	64-TEDA-H 64E-TEDA-H 64M-TEDA-H 64ME-TEDA-H 64S-TEDA-H 64SE-TEDA-H	Rp,FM, ON	2	HRA	
526	Scott	65-TEDA-H 65S-TEDA-H	Rp,FM, FF	2		
527	Pirelli	4333.2033	Rp,FM, FF	2		SO2/HCl
532	USD	2143-00 2243-00 2343-00	Rp,FM, ON	2	DFMR	OV/SO2/HCl formaldehyde
533	USD	3243-00	Rp,FM, FF	2	DFMR	OV/SO2/HCl formaldehyde
534	Racal	BE3/BC BE7/BC	PAPR, FF	3		HCl
536	Safety Supply	F-200-AG F-160-AG F-800-AG	Rp,FM, ON	2		SO2/HCl
537	Safety Supply	F-700-AG	Rp,FM, FF	2		SO2/HCl

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
542	Safety Supply	F-200-OA F-160-OA F-800-OA	Rp,FM, ON	2		OV/SO2/HCl
543	Safety Supply	F-700-OA	Rp,FM, FF	2		OV/SO2/HCl
550	Safety Supply	F-160-AG-F-P F-200-AG-F-P F-800-AG-F-P	Rp,FM, ON	2	DM	SO2/HCl
551	Safety Supply	F-700-AG-F-P	Rp,FM, FF	2	DM	SO2/HCl
552	Safety Supply	F-160-OA-F-P F-200-OA-F-P F-800-OA-F-P	Rp,FM, ON	2	DM	SO2/HCl
553	Safety Supply	F-700-OA-F-P	Rp,FM, FF	2	DM	SO2/HCl
563	Willson	1525 1525R 1525SS	Rp,FM, ON	2		OV/SO2/HCl
564	Willson	3525 3525R 3525SS	Rp,FM, ON	2		OV/SO2/HCl
565	Willson	1535 1535R 1535SS	Rp,FM, ON	2		OV/SO2/HCl
577	Willson	152510 152510R 152510SS	Rp,FM, ON	2	DM	OV/SO2/HCl

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
578	Willson	352510 352510R 352510SS	Rp,FM, ON	2	DM	OV/SO2/HCl
583	Willson	153512 153512R 153512SS	Rp,FM, ON	2	HA	OV/SO2/HCl
584	Willson	353512 353512R 353512SS	Rp,FM, ON	2	HA	OV/SO2/HCl
587	AO	R4563A S4563A R5563A S5563A R6563A S6563A	Rp,FM, ON	2	DFM	OV/SO2/HCl ClO2
588	AO	R7563A S7563A	Rp,FM, FF	2	DFM	OV/SO2/HCl ClO2/pest
593	Racal	BE1/E	PAPR, HH	3		SO2/HCl
594	Racal	BE3/EC BE7/EC	PAPR, FF	3		SO2/HCl
595	Racal	BE5/E	PAPR, HH	3		SO2/HCl
596	Racal	BE6/E	PAPR, HH	3		SO2/HCl
597	Racal	BE1/EP3	PAPR, HH	3	HRA	SO2/HCl
598	Racal	BE3/EP3 BE7/EP3	PAPR, FF	3	HRA	SO2/HCl
599	Racal	BE5/EP3	PAPR, HH	3	HRA	SO2/HCl

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
600	Racal	BE6/EP3	PAPR, HH	1	HRA	SO2/HC1
601	AO	R9722A	ES, MP	1		SO2/HC1
603	Racal	BE17/P3	PAPR, HH	3	HRA	SO2/HC1
604	AO	R9722E	ES, MP	1		OV/SO2/HC1
605	Racal	BE1/AE	PAPR, HH	3		OV/SO2/HC1
606	Racal	BE3/AE BE7/AE	PAPR, FF	3		OV/SO2/HC1
607	Racal	BE5/AE	PAPR, HH	3		OV/SO2/HC1
608	Racal	BE6/AE	PAPR, HH	3		OV/SO2/HC1
610	Racal	BE8/B	PAPR, ON	3		HC1
613	Racal	BE8/E	PAPR, ON	3		SO2/HC1
614	Racal	BE8/EP3	PAPR, ON	3	HRA	SO2/HC1
615	Racal	BE8/AE	PAPR, ON	3		OV/SO2/HC1
619	Glendale	GR-1622-50 GR-2022-50 GR-4022-50 GR-8022-50	Rp, FM, ON	2	HRA	SO2/HC1
620	Glendale	GR-7022-50	Rp, FM, FF	2	HRA	SO2/HC1
621	Glendale	GR-2023-50 GR-8023-50 GR-1623-50 GR-4023-50	Rp, FM, ON	2	HRA	OV/SO2/HC1

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
622	Glendale	GR-7023-50	Rp, Fm, FF	2	HRA	OV/SO2/HCl
626	Neoterik	NP1562-7	PAPR	3		OV/SO2/HCl
627	Neoterik	NP1562-6	PAPR, ON	3		SO2/HCl
631	Racal	BE4/B	PAPR, HH	3		HCl
634	Racal	BE4/E	PAPR, HH	3		SO2/HCl
635	Racal	BE4/EP3	PAPR, HH	3	HRA	SO2/HCl
636	Racal	BE4/AE	PAPR, HH	3		OV/SO2/HCl
638	Neoterik	NP1664-7 NP1564-7	PAPR, FF	3		OV/SO2/HCl
640	Neoterik	NP1664-6 NP1564-6	PAPR, FF	3		SO2/HCl
647	Racal	BE3/AEP3 BE7/AEP3	PAPR, FF	3	HRA	OV/SO2/HCl
648	Racal	BE8/AEP3	PAPR, ON	3	HRA	OV/SO2/HCl
652	North	7592S,M,L 7792S,M,L	Rp, Fm, ON	2	DFM	SO2/HCl formaldehyde
653	North	75BP92M 75BP92L	Rp, BM, ON	2	DFM	SO2/HCl formaldehyde
654	North	7692 7692S	Rp, Fm, FF	2	DFM	SO2/HCl formaldehyde
655	North	7593S/M/L 7793S/M/L	Rp, Fm, ON	2	DFM	OV/SO2/HCl

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
656	North	75BP93M 75BP93L	Rp, Bm, ON	2	DFM	OV/SO2/HCl
657	North	7693 7693S	Rp, Fm, FF	2	DFM	OV/SO2/HCl
664	Cover	1694-G104	Rp, Fm, FF	2		OV/SO2/HCl
665	Cover	1694-G104-F100	Rp, Fm, FF	2	DMA	OV/SO2/HCl
670	Cover	1694-G104-G208	Rp, Fm, FF	2	HRA	OV/SO2/HCl
671	Cover	1694-G102	Rp, Fm, FF	2		SO2/HCl
673	Cover	1694-G102-G208	Rp, Fm, FF	2	HRA	SO2/HCl
678	Eastern	287	Rp, Fm, ON	2	HRA	OV/SO2/HCl
679	AO	R7070A	Rp, Fm, FF	2		OV/SO2/HCl ClO2

#### 4. Hydrogen Chloride

##### Approval

Approved as respiratory protection against not more than 50 parts per million hydrogen chloride.

##### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.



CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
41	MSA	459434 461006	Rp, Fm, Bm, ON	2	DM	SO2/Cl/ Formaldehyde
47	MSA	459435 461007	Rp, Fm, Bm, ON	2	DM	OV/SO2/Cl Formaldehyde
60	AO	R4052* R5052* R6052*	Rp, Fm, ON	2		SO2/Cl
65	North	7503* 7503M 7703M 7503S 7703S 7503L 7703L	Rp, Fm, ON	2		OV/SO2/Cl
66	North	7513* 7513M 7713M 7513S 7713S 7513L 7713L	Rp, Fm, ON	2	DMA	OV/SO2/Cl
76	Willson	1225 S1225 1225S S1225S 1225SR S1225SR S1225R S1225SS S1225SSS 1225SSS 1225R 1225SS	Rp, Fm, ON	2		OV/SO2/Cl

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
77	Willson	122510 122510R 122510S 122510SR 122510SS 122510SSS S122510 S122510R S122510S S122510SR S122510SS S122510SSS	Rp, Fm, ON	2	DM	OV/SO2/Cl
82	AO	R4053* R5053* R6053*	Rp, Fm, ON	2		OV/SO2/Cl
85	AO	R8153 S8153	Rp, Fm, ON	1		OV/SO2/Cl
104	North	75BP03* 75BP03M 75BP03L	Rp, Bm, ON	2		OV/SO2/Cl
105	North	75BP13* 75BP13M 75BP13L	Rp, Bm, ON	2	DMA	OV/SO2/Cl
111	AO	R9722	Es, M	1	DM	SO2/Cl
115	Scott	6411-0001* 6413-0001* 6421-0001* 6423-0001* 6412-0001* 6422-0001* 64-AG 64E-AG 64M-AG 64ME-AG 64S-AG 64SE-AG	Rp, Fm, ON	2		SO2/Cl Formaldehyde

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
116	Scott	6411-0101* 6413-0101* 6421-0101* 6423-0101* 6412-0101* 6422-0101* G4-AG-D 64E-AG-D 64M-AG-D 64ME-AG-D 64S-AG-D 64SE-AG-D 64032-01*	Rp, Fm, ON	2	DMA	SO2/C1 Formaldehyde
122	North	7542* 7542M*	Rp, Fm, ON	2	DMA	SO2/C1
129	3M	8714 8720	Su, ON	1	DM 8720 only	SO2/C1
141	Willson	1625 1725	Rp, Fm, FF	2		OV/SO2/C1
142	Willson	162510 172510	Rp, Fm, FF	2	DM	OV/SO2/C1
145	MSA	461849	Rp, Fm, FF	2	DM	SO2/C1 formaldehyde
146	MSA	461850	Rp, Fm, FF	2	DM	OV/SO2/C1 formaldehyde
150	MSA	461854	Rp, Fm, FF	2	HA	SO2/C1 formaldehyde
153	MSA	461855	Rp, Fm, FF	2	HA	OV/SO2/C1 formaldehyde

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
154	MSA	461856	Rp, Fm, FF	2	DFMR	OV/SO2/Cl formaldehyde
156	MSA	461835 462239	Rp, Fm, Bm, ON	2	HA	SO2/Cl formaldehyde
159	MSA	460847 461013	Rp, Fm, Bm, ON	2	HA	OV/SO2/Cl formaldehyde
160	MSA	460848 461014	Rp, Fm, Bm, ON	2	DFMR	OV/SO2/Cl formaldehyde
163	Cover	1482-G104 1482-S-G104 1482-L-G104 1482-G104-F100 1482-S-G104-F100 1482-L-G104-F100	Rp, Fm, ON	2	DMA  1482-G-104-F100 only 1482-S-G104-F100 only 1482-L-G-104-F100 only	OV/SO2/Cl
163	Sellstrom	315-G104 315-G104-F100	Rp, Fm, ON	2	DMA 315-G104-F100 only	OV/SO2/Cl
163	Eastern	E452	Rp, Fm, ON	2	DMA	OV/SO2/Cl
164	Cesco	95RC55 95SMRC55	Fm, ON	2		SO2/Cl
165	Cesco	95RC75 95SMRC75	Rp, Fm, ON	2	DM	SO2/Cl
166	Cesco	95RC85 95SMRC85	Fm, ON	2		OV/SO2/Cl
167	Cesco	95RC105 95SMRC105	Rp, Fm, ON	2	DM	OV/SO2/Cl

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
168	US Safety	150T21 150L21	Fm, ON	2		SO2/Cl
169	US Safety	150T25 150L25	Rp, Fm, ON	2	DM	SO2/Cl
170	US Safety	150T26 150L26	Fm, ON	2		OV/SO2/Cl
171	US Safety	150T28 150L28	Rp, Fm, ON	2	DM	OV/SO2/Cl
172	Scott	6411-0015* 6412-0015* 6413-0015* 6421-0015* 6422-0015* 6423-0015* 64-OA 64E-OA 64M-OA 64ME-OA 64S-OA 64SE-OA	Fm, ON	2		OV/SO2/Cl  formaldehyde
174	Scott	6411-0115* 6412-0115* 6413-0115* 6421-0115* 6422-0115* 6423-0115* 64-OA-D 64E-OA-D 64M-OA-D 64ME-OA-D 64S-OA-D 64SE-OA-D 604032-15*	Fm, ON	2	DMA	OV/SO2/Cl formaldehyde
179	North	75BP42* 75BP42M*	Rp, Bm, ON	2	DMA	SO2/Cl

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
181	North	7603 7603S 7603N* 7603SN*	Rp, Fm, FF	2		OV/SO2/Cl
183	Glendale	GR-1622 GR-2022 GR-4022 GR-8022	Rp, Fm, ON	2		SO2/Cl
184	Glendale	GR-1622-10 GR-2022-10 GR-4022-10 GR-8022-10	Rp, Fm, ON	2	DM	SO2/Cl
186	North	7613 7613S 7613N* 7613SN*	Rp, Fm, FF	2	DMA	OV/SO2/Cl
189	North	7642* 7642S* 7642N* 7642SN*	Rp, Fm, FF	2	DMA	SO2/Cl
203	Pulmosan	10012 10186 10240 10273	Rp, Fm, ON	1		SO2/Cl
207	North	7582M 7782M 7582S 7782S 7582L 7782L 7582*	Rp, Fm, ON	2	HA	SO2/Cl
208	North	75BP82* 75BP82M 75BP82L	Rp, Fm, ON	2	HA	SO2/Cl

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
209	North	7682 7682S	Rp, Fm, FF	2	HA	SO2/C1
210	North	7583M 7783M 7583S 7783S 7583L 7783L 7583*	Rp, Fm, ON	2	HA	SO2/C1
211	North	75BP83* 75BP83M 75BP83L	Rp, Bm, ON	2	HA	SO2/C1
212	North	7683S 7683	Rp, Fm, FF	2	HA	SO2/C1
216	3M	8725 8726	Su, ON	1	DM 8726	OV/SO2/C1 only
218	Scott	6470-0101* 6480-0101* 65-AG-D 65S-AG-D	Rp, Fm, FF	2	DMA	SO2/C1 formaldehyde
221	Scott	6470-0015* 6480-0015* 65-OA 65S-OA	Rp, Fm, FF	2		OV/SO2/C1 formaldehyde
222	Scott	6470-0115* 6480-0115* 65-OA-D 65S-OA-D	Rp, Fm, FF	2	DMA	OV/SO2/C1 formaldehyde
225	Scott	6470-0001 6480-0001 65-AG 65S-AG	Rp, Fm, FF	2		SO2/C1 formaldehyde

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
226	North	7502* 7502S 7702S 7502M 7702L 7502L 7702M	Rp, Fm, ON	2		SO2/C1 formaldehyde
227	North	75BP02* 75BP02M 75BP02L	Rp, Bm, ON	2		SO2/C1 formaldehyde
228	North	7602 7602S 7602N* 7602SN*	Rp, Fm, FF	2		SO2/C1 formaldehyde
229	North	7512* 7512S 7512M 7512L 7712S 7712M 7712L	Rp, Fm, ON	2	DMA	SO2/C1 formaldehyde
230	North	75BP12* 75BP12M 75BP12L	Rp, Bm, ON	2	DMA	SO2/C1 formaldehyde
231	North	7612 7612S 7612N* 7612SN*	Rp, Fm, FF	2	DMA	SO2/C1 formaldehyde
232	Pulmosan	10027 10201 10252 10285	Rp, Fm, ON	1	DM	SO2/C1
233	AO	R7052*	Rp, Fm, FF	2		SO2/C1



CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
234	AO	R7053*	Rp, Fm, FF	2		OV/SO2/Cl
241	Glendale	GR-1623 GR-2023 GR-4023 GR-8023	Rp, Fm, ON	2		OV/SO2/Cl
242	Glendale	GR1623-10 GR2023-10 GR4023-10 GR8023-10	Rp, Fm, ON	2	DM	OV/SO2/Cl
246	Scott	6411-0301* 64-AG-F 6413-0301* 64E-AG-F 6421-0301* 64M-AG-F 6423-0301* 64ME-AG-F 6412-0301* 64S-AG-F 6422-0301* 64SE-AG-F	Rp, Fm, ON	2	DFMAR	SO2/Cl formaldehyde
247	Scott	6470-0301* 6480-0301* 65-AG-F 65S-AG-F	Rp, Fm, FF	2	DFMAR	SO2/Cl formaldehyde
250	Scott	6411-0315* 6412-0315* 6413-0315* 6421-0315* 6422-0315* 6423-0315* 64-OA-F 64M-OA-F 64ME-OA-F 64E-OA-F 64S-OA-F 64SE-OA-F	Rp, Fm, ON	2	DFMAR	OV/SO2/Cl formaldehyde

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
251	Scott	6470-0315* 6480-0315* 65-OA-F 65S-OA-F	Rp, Fm, FF	2	DFMAR	OV/SO2/Cl formaldehyde
260	MSA	466903	Rp, Fm, ON	2	DM	OV/SO2/Cl formaldehyde
261	MSA	466902	Rp, Bm, ON	2	DM	OV/SO2/Cl formaldehyde
262	MSA	466904	Rp, Fm, FF	2	DM	OV/SO2/Cl formaldehyde
265	Cesco	96RC75	Rp, Fm, FF	2	DM	SO2/Cl
266	US Safety	151T25	Rp, Fm, FF	2	DM	SO2/Cl
267	Cesco	96RC105	Rp, Fm, FF	2	DM	OV/SO2/Cl
268	US Safety	151T28	Rp, Fm, FF	2	DM	OV/SO2/Cl
281	AO	R4563 S4563 R5563 S5563 R6563 S6563	Rp, Fm, ON	2	DFM	OV/SO2/Cl pesticides
282	AO	R7563 S7563	Rp, Fm, FF	2	DFM	OV/SO2/Cl pesticides
288	North	7902	Es, M	1		SO2/Cl

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
298	Willson	1235 1235R 1235S 1235SR 1235SS 1235SSS S1235 S1235R S1235S S1235SR S1235SS S1235SSS	Rp, Fm, ON	2		OV/SO2/Cl
299	Willson	123512 123512R 123512S 123512SR 123512SS 123512SSS S123512 S123512R S123512S S123512SR S123512SS S123512SSS	Rp, FM, ON	2	HA	OV/SO2/Cl
300	Willson	1635 1735	Rp, FM, FF	2		OV/SO2/Cl
301	Willson	163512 173512	Rp, FM, FF	2	HA	OV/SO2/Cl
306	Cesco	95RC50 95SMRC50	Rp, FM, ON	2	HRA	SO2/Cl
307	US Safety	150T41 150L41	Rp, FM, ON	2	HRA	SO2/Cl
308	Cesco	96RC50	Rp, FM, FF	2	HRA	SO2/Cl
309	US Safety	151T41	Rp, FM, FF	2	HRA	SO2/Cl

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
310	Cesco	95RC80 95SMRC80	Rp, FM, ON	2	HRA	OV/SO2/Cl
311	US Safety	150T46 150L46	Rp, FM, ON	2	HRA	OV/SO2/Cl
312	Cesco	96RC80	Rp, FM, FF	2	HRA	OV/SO2/Cl
313	US Safety	151T46	Rp, FM, FF	2	HRA	OV/SO2/Cl
318	USD	2203-00 2103-00 2303-00	Rp, FM, ON	2		OV/SO2/Cl
320	Pulmosan	10015 10189 10243 10276	Rp, FM, ON	1		OV/SO2/Cl
324	Pulmosan	10030 10255 10204 10288	Rp, FM, ON	1	DM	OV/SO2/Cl
339	AO	R4052A S4052A R5052A S5052A R6052A S6052A	Rp, Fm, ON	2		SO2/Cl
340	AO	R7052A S7052A	Rp, Fm, FF	2		SO2/Cl
341	AO	R4052AD R5052AD R6052AD S4052AD S5052AD S6052AD	Rp, Fm, ON	2	DM	SO2/Cl

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
342	AO	R7052AD S7052AD	Rp, Fm, FF	2	DM	SO2/C1
343	AO	R4053A S4053A R5053A S5053A R6053A S6053A	Rp, Fm, ON	2		OV/SO2/C1 C1O2
344	AO	R7053A S7053A	Rp, Bm, FF	2		OV/SO2/C1 C1O2
345	AO	R4053AD S4053AD R5053AD S5053AD R6053AD S6053AD	Rp, Fm, ON	2	DM	OV/SO2/C1 C1O2
346	AO	R7053AD S7053AD	Rp, Fm, FF	2	DM	OV/SO2/C1 C1O2
352	North	10003S 10003M	Su, ON	1		OV/SO2/C1
353	North	10002S 10002M	Su, ON	1		SO2/C1
356	North	10012S 10012M	Su, ON	1	DMA	SO2/C1
357	North	10013S 10013M	Su, ON	1	DMA	OV/SO2/C1
359	Cover	1482-G102 1482-S-G102 1482-L-G102	Rp, Fm, ON	2		SO2/C1

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
368	Willson	3025 3025S S3025 3025R S3025R 3025SR S3025S 3025SSS S3025SS S305SSS 3025SS 3025SR	Rp, Bm, ON	2		OV/SO2/Cl
369	Willson	3125 3225	Rp, Bm, FF	2		OV/SO2/Cl
370	Willson	3035 3035S S3035 3035R S3035S 3035SR S3035R S3035SR S3035SS S3035SSS 3035SS 3035SSS	Rp, Bm, ON	2		OV/SO2/Cl
371	Willson	3135 3235	Rp, Bm, FF	2		OV/SO2/Cl
380	Willson	302510 302510R 302510S 302510SR 302510SS 302510SSS S302510 S302510S S302510R S302510SR S302510SS S302510SSS	Rp, Bm, ON	2	DM	OV/SO2/Cl

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
381	Willson	312510 322510	Rp,Bm, FF	2	DM	OV/SO2/Cl
386	Willson	303512 303512R 303512S 303512SR 303512SS 303512SSS S303512 S303512S S303512R S303512SR S303512SS S303512SSS	Rp,Bm, ON	2	HA	OV/SO2/Cl
387	Willson	313512 323512	Rp,Bm, FF	2	HA	OV/SO2/Cl
393	USD	2133-00 2233-00 2333-00	Rp,Fm, ON	2	DFMR	OV/SO2/Cl
394	USD	3233-00	Rp,Fm, FF	2	DFMR	OV/SO2/Cl
395	USD	2192-00 2292-00 2392-00	Rp,Fm, ON	2	HA	SO2/Cl
396	USD	3292-00	Rp,Fm, FF	2	HA	SO2/Cl
407	Glendale	GR7022	Rp,Fm, FF	2		SO2/Cl
408	Glendale	GR7022-10	Rp,Fm, FF	2	DM	SO2/Cl
410	Glendale	GR7023	Rp,Fm, FF	2		OV/SO2/Cl
411	Glendale	GR7023-10	Rp,Fm, FF	2	DM	OV/SO2/Cl

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
415	AO	R4052HE S4052HE R5052HE S5052HE R6052HE S6052HE	Rp, Fm, ON	2	HRA	OV/SO2/Cl
416	AO	R7052HE S7052HE	Rp, Fm, FF	2	HRA	OV/SO2/Cl
417	AO	R4053HE S4053HE R5053HE S5053HE R6053HE S6053HE	Rp, Fm, ON	2	HRA	OV/SO2/Cl ClO2
418	AO	R7053HE S7053HE	Rp, Fm, FF	2	HRA	OV/SO2/Cl ClO2
421	Cover	1482-G104-G208 1482-S-G104-G208 1482-L-G104-G208	Rp, Fm, ON	2	HRA	OV/SO2/Cl
429	USD	3202-00	Rp, Fm, FF	2		SO2/Cl
430	USD	2102-00 2202-00 2302-00	Rp, Fm, ON	2		SO2/Cl
431	USD	2112-00 2212-00 2312-00	Rp, Fm, ON	2	DM	SO2/Cl
432	USD	3212-00	Rp, Fm, FF	2	DM	SO2/Cl
433	USD	2113-00 2213-00 2313-00	Rp, Fm, ON	2	DM	OV/SO2/Cl formaldehyde



CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
434	USD	3213-00	Rp, Fm, ON	2	DM	OV/SO2/C1 formaldehyde
443	3M	7202	Rp, Fm, ON	2		SO2/C1
444	3M	7208	Rp, Fm, ON	2	DMA	SO2/C1
445	3M	7213	Rp, Fm, ON	2	HRA	SO2/C1
446	3M	7203	Rp, Fm, ON	2		OV/SO2/C1
447	3M	7209	Rp, Fm, ON	2	DMA	OV/SO2/C1
448	3M	7214	Rp, Fm, ON	2	HRA	OV/SO2/C1
449	North	7912	Es, M	1	DM	SO2/C1
450	USD	2193-00 2293-00 2393-00	Rp, Fm, ON	2	HA	OV/SO2/C1
451	USD	3293-00	Rp, Fm, FF	2	HA	OV/SO2/C1
454	USD	3203-00	Rp, Fm, FF	2		OV/SO2/C1 formaldehyde
459	Cover	1482-G102-G208 1482-S-G102-G208 1482-L-G102-G208	Rp, Fm, ON	2	HRA	SO2/C1
461	MSA	472749	Rp, Bm, ON	2	DM	SO2/C1 formaldehyde
462	MSA	472750	Rp, Bm, ON	2	DM	OV/SO2/C1 formaldehyde

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
466	MSA	472756	Rp,Bm, ON	2	HA	OV/SO2/C1 formaldehyde
467	MSA	472757	Rp,Bm, ON	2	DFMR	OV/SO2/C1 formaldehyde
470	MSA	472760	Rp,Bm, ON	2	HA	SO2/C1 formaldehyde
472	MSA	472764	Rp,Bm, ON	2	DM	OV/SO2/C1 formaldehyde
479	Racal	BE1/B	PAPR	3		C1
480	Racal	BE5/B	PAPR	3		C1
481	Racal	BE6/B	PAPR	3		C1
487	Sellstrom	315-G102-G208	Rp,FM, ON	2	HRA	SO2/C1
492	Scott	70-AG	ES, MP	1		C1/H2S
496	Pulmosan	10411	Rp,FM, FF	1		SO2/C1
497	Pulmosan	10414	Rp, FM, FF	1		OV/SO2/C1
500	Pulmosan	10423	Rp, FM, FF	1	DM	SO2/C1
501	Pulmosan	10426	Rp, FM, FF	1	DM	OV/SO2/C1
511	MSA	469728	Rp,FM, ON	1	DM	OV/SO2/C1 formaldehyde

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
512	MSA	469729	Rp,FM, ON	1	DM	OV/SO2/C1 formaldehyde
514	MSA	471914 476337 476338	ES, MP	1	DM	SO2/C1/H2S
516	Pirelli	4336.2023	Rp,FM, ON	2		SO2/C1
517	Scott	64-AG-H 64E-AG-H 64M-AG-H 64ME-AG-H 64S-AG-H 64SE-AG-H	Rp,FM, ON	2	HRA	SO2/C1 formaldehyde
518	Scott	65-AG-H 65S-AG-H	Rp,FM, FF	2	HRA	SO2/C1 formaldehyde
521	Scott	64-OA-H 64E-OA-H 64M-OA-H 64ME-OA-H 64S-OA-H 64SE-OA-H	Rp,FM, ON	2	HRA	OV/SO2/C1 formaldehyde
522	Scott	65-OA-H 65S-OA-H	Rp,FM, FF	2	HRA	OV/SO2/C1 formaldehyde
527	Pirelli	4333.2033	Rp,FM, FF	2		SO2/C1
532	USD	2143-00 2243-00 2343-00	Rp,FM, ON	2	DFMR	OV/SO2/C1 formaldehyde
533	USD	3243-00	Rp,FM, FF	2	DFMR	OV/SO2/C1 formaldehyde

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
534	Racal	BE3/BC BE7/BC	PAPR, FF	3		Cl
536	Safety Supply	F-200-AG F-160-AG F-800-AG	Rp, FM, ON	2		SO2/Cl
537	Safety Supply	F-700-AG	Rp, FM, FF	2		SO2/Cl
542	Safety Supply	F-200-OA F-160-OA F-800-OA	Rp, FM, ON	2		OV/SO2/Cl
543	Safety Supply	F-700-OA	Rp, FM, FF	2		OV/SO2/Cl
550	Safety Supply	F-160-AG-F-P F-200-AG-F-P F-800-AG-F-P	Rp, FM, ON	2	DM	SO2/Cl
551	Safety Supply	F-700-AG-F-P	Rp, FM, FF	2	DM	SO2/Cl
552	Safety Supply	F-160-OA-F-P F-200-OA-F-P F-800-OA-F-P	Rp, FM, ON	2	DM	SO2/Cl
553	Safety Supply	F-700-OA-F-P	Rp, FM, FF	2	DM	OV/SO2/Cl
563	Willson	1525 1525R 1525SS	Rp, FM, ON	2		OV/SO2/Cl

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
564	Willson	3525 3525R 3525SS	Rp,FM, ON	2		OV/SO2/Cl
565	Willson	1535 1535R 1535SS	Rp,FM, ON	2		OV/SO2/Cl
566	Willson	3535 3535R 3535SS	Rp,FM, ON	2		OV/SO2/Cl
577	Willson	152510 152510R 152510SS	Rp,FM, ON	2	DM	OV/SO2/Cl
578	Willson	352510 352510R 352510SS	Rp,FM, ON	2	DM	OV/SO2/Cl
583	Willson	153512 153512R 153512SS	Rp,FM, ON	2	HA	OV/SO2/Cl
584	Willson	353512 353512R 353512SS	Rp,FM, ON	2	HA	OV/SO2/Cl
587	AO	R4563A S4563A R5563A S5563A R6563A S6563A	Rp,FM, ON	2	DFM	OV/SO2/Cl ClO2/pest
588	AO	R7563A S7563A	Rp,FM, FF	2	DFM	OV/SO2/Cl ClO2/pest
593	Racal	BE1/E	PAPR, HH	3		SO2/Cl

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
594	Racal	BE3/EC BE7/EC	PAPR, FF	3		SO2/Cl
595	Racal	BE5/E	PAPR, HH	3		SO2/Cl
596	Racal	BE6/E	PAPR, HH	3		SO2/Cl
597	Racal	BE1/EP3	PAPR, HH	3	HRA	SO2/Cl
598	Racal	BE3/EP3 BE 7/EP3	PAPR, FF	3	HRA	SO2/Cl
599	Racal	BE 5/EP3	PAPR, HH	3	HRA	SO2/Cl
600	Racal	BE6/EP3	PAPR, HH	1	HRA	SO2/Cl
601	AO	R9722A	ES, MP	1		SO2/Cl
603	Racal	BE17/P3	PAPR, HH	3	HRA	SO2/Cl
604	AO	R9722E	ES, MP	1		
605	Racal	BE1/AE	PAPR, HH	3		OV/SO2/Cl
606	Racal	BE3/AE BE7/AE	PAPR, FF	3		OV/SO2/Cl
607	Racal	BE5/AE	PAPR, HH	3		OV/SO2/Cl
608	Racal	BE6/AE	PAPR, HH	3		OV/SO2/Cl
613	Racal	BE8/E	PAPR, ON	3		SO2/Cl
614	Racal	BE8/EP3	PAPR, ON	3	HRA	SO2/Cl

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
615	Racal	BE8/AE	PAPR	3		OV/SO2/Cl
619	Glendale	GR-1622-50 GR-2022-50 GR-4022-50 GR-8022-50	Rp,FM, ON	2	HRA	SO2/Cl
620	Glendale	GR-7022-50	Rp,FM, FF	2	HRA	SO2/Cl
621	Glendale	GR-2023-50 GR-8023-50 GR-1623-50 GR-4023-50	Rp,FM, ON	2	HRA	OV/SO2/Cl
622	Glendale	GR-4023-50 GR-7023-50	Rp, Fm, FF	2	HRA	OV/SO2/Cl
626	Neoterik	NP1562-7	PAPR, ON	3		OV/SO2/Cl
627	Neoterik	NP1562-6	PAPR, ON	3		SO2/Cl
631	Racal	BE4/B	PAPR, HH	3		Cl
634	Racal	BE4/E	PAPR, HH	3		SO2/Cl
635	Racal	BE4/EP3	PAPR, HH	3	HRA	SO2/Cl
636	Racal	BE4/AE	PAPR, HH	3		OV/SO2/Cl
638	Neoterik	NP1664-7 NP1564-7	PAPR, FF	3		OV/SO2/Cl
640	Neoterik	NP1664-6 NP1564-6	PAPR, FF	3		SO2/Cl

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
647	Racal	BE3/AEP3 BE7/AEP3	PAPR	3	HRA	OV/SO2/Cl
648	Racal	BE8/AEP3	PAPR	3	HRA	OV/SO2/Cl
652	North	7592S,M,L 7792S,M,L	Rp,Fm, ON	2	DFM	SO2/Cl formaldehyde
653	North	75BP92M 75BP92L	Rp,BM, ON	2	DFM	SO2/Cl formaldehyde
654	North	7692 7692S	Rp,Fm, FF	2	DFM	SO2/Cl formaldehyde
655	North	7593S/M/L 7793S/M/L	Rp,Fm, ON	2	DFM	OV/SO2/Cl
656	North	75BP93M 75BP93L	Rp,Bm, ON	2	DFM	OV/SO2/Cl
657	North	7693 7693S	Rp,Fm, FF	2	DFM	OV/SO2/Cl
664	Cover	1694-G104	Rp,Fm, FF	2		OV/SO2/Cl
665	Cover		Rp,Fm, FF 1694-G104-F100	2	DMA	OV/SO2/Cl
670	Cover		Rp,Fm, FF 1694-G104-G208	2	HRA	OV/SO2/Cl
671	Cover	1694-G102	Rp,Fm, FF	2		SO2/Cl
673	Cover		Rp,Fm, FF 1694-G102-G208	2	HRA	SO2/Cl



CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
678	Eastern	287	Rp, Fm, ON	2	HRA	OV/SO2/Cl
679	AO	R7070A	Rp, Fm, FF	2		OV/SO2/Cl ClO2

## 5. Sulfur Dioxide

### Approval

Approved as respiratory protection against not more than 50 parts per million sulfur dioxide.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
41	MSA	459434 461006	Rp, Fm, Bm, ON	2	DM	HCl/Cl/ Formaldehyde
47	MSA	459435 461007	Rp, Fm, Bm, ON	2	DM	OV/HCl/Cl Formaldehyde
60	AO	R4052* R5052* R6052*	Rp, Fm, ON	2		HCl/Cl
65	North	7503* 7503M 7703M 7503S 7703S 7503L 7703L	Rp, Fm, ON	2		OV/HCl/Cl
66	North	7513* 7513M 7713M 7513S 7713S 7513L 7713L	Rp, Fm, ON	2	DMA	OV/HCl/Cl
76	Willson	1225 S1225 1225S S1225S 1225SR S1225SR S1225R S1225SS S1225SSS 1225SSS 1225R 1225SS	Rp, Fm, ON	2		OV/HCl/Cl

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
77	Willson	122510 122510R 122510S 122510SR 122510SS 122510SSS S122510 S122510R S122510S S122510SR S122510SS S122510SSS	Rp, Fm, ON	2	DM	OV/HCl/Cl
82	AO	R4053* R5053* R6053*	Rp, Fm, ON	2		OV/HCl/Cl
85	AO	R8153 S8153	Rp, Fm, ON	1		OV/HCl/Cl
104	North	75BP03* 75BP03M 75BP03L	Rp, Bm, ON	2		OV/HCl/Cl
105	North	75BP13* 75BP13M 75BP13L	Rp, Bm, ON	2	DMA	OV/HCl/Cl
111	AO	R9722	Es, M	1	DM	HCl/Cl
115	Scott	6411-0001* 6413-0001* 6421-0001* 6423-0001* 6412-0001* 6422-0001* 64-AG 64E-AG 64M-AG 64ME-AG 64S-AG 64SE-AG	Rp, Fm, ON	2		HCl/Cl Formaldehyde

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
116	Scott	6411-0101* 6413-0101* 6421-0101* 6423-0101* 6412-0101* 6422-0101* 64-AG-D 64E-AG-D 64M-AG-D 64ME-AG-D 64S-AG-D 64SE-AG-D 64032-01*	Rp, Fm, ON	2	DMA	HCl/Cl Formaldehyde
122	North	7542* 7542M*	Rp, Fm, ON	2	DMA	HCl/Cl
129	3M	8714 8720	Su, ON	1	DM 8720 only	HCl/Cl
141	Willson	1625 1725	Rp, Fm, FF	2		OV/HCl/Cl
142	Willson	162510 172510	Rp, Fm, FF	2	DM	OV/HCl/Cl
145	MSA	461849	Rp, Fm, FF	2	DM	HCl/Cl formaldehyde
146	MSA	461850	Rp, Fm, FF	2	DM	OV/HCl/Cl formaldehyde
150	MSA	461854	Rp, Fm, FF	2	HA	HCl/Cl formaldehyde
153	MSA	461855	Rp, Fm, FF	2	HA	OV/HCl/Cl formaldehyde

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
154	MSA	461856	Rp, Fm, FF	2	DFMR	OV/HCl/Cl formaldehyde
156	MSA	461835 462239	Rp, Fm, Bm, ON	2	HA	HCl/Cl formaldehyde
159	MSA	460847 461013	Rp, Fm, Bm, ON	2	HA	OV/HCl/Cl formaldehyde
160	MSA	460848 461014	Rp, Fm, Bm, ON	2	DFMR	OV/HCl/Cl formaldehyde
163	Cover	1482-G104 1482-S-G104 1482-L-G104 1482-G104-F100 1482-S-G104-F100 1482-L-G104-F100	Rp, Fm, ON	2	DMA  1482-G104-F100 1482-S-G104-F100 1482-L-G104-F100 only	OV/HCl/Cl
163	Sellstrom	315-G104 315-G104-F100	Rp, Fm, ON	2	DMA 315-G104-F100	OV/HCl/Cl
163	Eastern	E452	Rp, Fm, ON	2	DMA	OV/HCl/Cl
164	Cesco	95RC55 95SMRC55	Fm, ON	2		OV/HCl/Cl
165	Cesco	95RC75 95SMRC75	Rp, Fm, ON	2	DM	HCl/Cl
166	Cesco	95RC85 95SMRC85	Fm, ON	2		OV/HCl/Cl
167	Cesco	95RC105 95SMRC105	Rp, Fm, ON	2	DM	OV/HCl/Cl
168	US Safety	150T21 150L21	Fm, ON	2		HCl/Cl

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
169	US Safety	150T25 150L25	Rp, Fm, ON	2	DM	HCl/C1
170	US Safety	150T26 150L26	Fm, ON	2		OV/HCl/C1
171	US Safety	150T28 150L28	Rp, Fm, ON	2	DM	OV/HCl/C1
172	Scott	6411-0015* 6412-0015* 6413-0015* 6421-0015* 6422-0015* 6423-0015* 64-OA 64E-OA 64M-OA 64ME-OA 64S-OA 64SE-OA	Fm, ON	2		OV/HCl/C1 formaldehyde
174	Scott	6411-0115* 6412-0115* 6413-0115* 6421-0115* 6422-0115* 6423-0115* 64-OA-D 64E-OA-D 64M-OA-D 64ME-OA-D 64S-OA-D 64SE-OA-D 604032-15*	Fm, ON	2	DMA	OV/HCl/C1 formaldehyde
179	North	75BP42* 75BP42M*	Rp, Bm, ON	2	DMA	HCl/C1
181	North	7603 7603S 7603N* 7603SN*	Rp, Fm, FF	2		OV/HCl/C1

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
183	Glendale	GR-1622 GR-2022 GR-4022 GR-8022	Rp, Fm, ON	2		HCl/Cl
184	Glendale	GR-1622-10 GR-2022-10 GR-4022-10 GR-8022-10	Rp, Fm, ON	2	DM	HCl/Cl
186	North	7613 7613S 7613N* 7613SN*	Rp, Fm, FF	2	DMA	OV/HCl/Cl
189	North	7642* 7642S* 7642N* 7642SN*	Rp, Fm, FF	2	DMA	HCl/Cl
203	Pulmosan	10012 10186 10240 10273	Rp, Fm, ON	1		HCl/Cl
207	North	7582M 7782M 7582S 7782S 7582L 7782L 7582*	Rp, Fm, ON	2	HA	HCl/Cl
208	North	75BP82* 75BP82M 75BP82L	Rp, Bm, ON	2	HA	HCl/Cl
209	North	7682 7682S	Rp, Fm, FF	2	HA	HCl/Cl



CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
210	North	7583M 7783M 7583S 7783S 7583L 7783L 7583*	Rp, Fm, ON	2	HA	HCl/C1
211	North	75BP83* 75BP83M 75BP83L	Rp, Bm, ON	2	HA	HCl/C1
212	North	7683S 7683	Rp, Fm, FF	2	HA	HCl/C1
216	3M	8725 8726	Su, ON	1	DM 8726 only	OV/HCl/C1
218	Scott	6470-0101* 6480-0101* 65-AG-D 65S-AG-D	Rp, Fm, FF	2	DMA	HCl/C1 formaldehyde
221	Scott	6470-0015* 6480-0015* 65-OA 65S-OA	Rp, Fm, FF	2		OV/HCl/C1 formaldehyde
222	Scott	6470-0115* 6480-0115* 65-OA-D 65S-OA-D	Rp, Fm, FF	2	DMA	OV/HCl/C1 formaldehyde
225	Scott	6470-0001 6480-0001 65-AG 65S-AG	Rp, Fm, FF	2		HCl/C1 formaldehyde

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
226	North	7502* 7502S 7702S 7502M 7702L 7502L 7702M	Rp, Fm, ON	2		HCl/Cl formaldehyde
227	North	75BP02* 75BP02M 75BP02L	Rp, Bm, ON	2		HCl/Cl formaldehyde
228	North	7602 7602S 7602N* 7602SN*	Rp, Fm, FF	2		HCl/Cl formaldehyde
229	North	7512* 7512S 7512M 7512L 7712S 7712M 7712L	Rp, Fm, ON	2	DMA	HCl/Cl formaldehyde
230	North	75BP12* 75BP12M 75BP12L	Rp, Bm, ON	2	DMA	HCl/Cl formaldehyde
231	North	7612 7612S 7612N* 7612SN*	Rp, Fm, FF	2	DMA	HCl/Cl formaldehyde
232	Pulmosan	10027 10201 10252 10285	Rp, Fm, ON	1	DM	HCl/Cl
233	AO	R7052*	Rp, Fm, FF	2		HCl/Cl

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
234	AO	R7053*	Rp, Fm, FF	2		OV/HCl/Cl
241	Glendale	GR-1623 GR-2023 GR-4023 GR-8023	Rp, Fm, ON	2		OV/HCl/Cl
242	Glendale	GR1623-10 GR2023-10 GR4023-10 GR8023-10	Rp, Fm, ON	2	DM	OV/HCl/Cl
246	Scott	6411-0301* 64-AG-F 6413-0301* 64E-AG-F 6421-0301* 64M-AG-F 6423-0301* 64ME-AG-F 6412-0301* 64S-AG-F 6422-0301* 64SE-AG-F	Rp, Fm, ON	2	DFMAR	HCl/Cl formaldehyde
247	Scott	6470-0301* 6480-0301* 65-AG-F 65S-AG-F	Rp, Fm, FF	2	DFMAR	HCl/Cl formaldehyde
250	Scott	6411-0315* 64-OA-F 6413-0315* 64M-OA-F 6421-0315* 64ME-OA-F 6423-0315* 64E-OA-F 6412-0315* 64S-OA-F 6422-0315* 64SE-OA-F	Rp, Fm, ON	2	DFMAR	OV/HCl/Cl formaldehyde

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
251	Scott	6470-0315* 6480-0315* 65-OA-F 65S-OA-F	Rp, Fm, FF	2	DFMAR	OV/HCl/Cl formaldehyde
260	MSA	466903	Rp, Fm, ON	2	DM	OV/HCl/Cl formaldehyde
261	MSA	466902	Rp, Bm, ON	2	DM	OV/HCl/Cl formaldehyde
262	MSA	466904	Rp, Fm, FF	2	DM	OV/HCl/Cl formaldehyde
265	Cesco	96RC75	Rp, Fm, FF	2	DM	HCl/Cl
266	US Safety	151T25	Rp, Fm, FF	2	DM	HCl/Cl
267	Cesco	96RC105	Rp, Fm, FF	2	DM	OV/HCl/Cl
268	US Safety	151T28	Rp, Fm, FF	2	DM	OV/HCl/Cl
281	AO	R4563 S4563 R5563 S5563 R6563 S6563	Rp, Fm, ON	2	DFM	OV/HCl/Cl pesticides
282	AO	R7563 S7563	Rp, Fm, FF	2	DFM	OV/HCl/Cl pesticides
288	North	7902	Es, M	1		HCl/Cl

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
298	Willson	1235 1235S S1235 1235SR S1235R S1235S S1235SS S1235SSS 1235SSS 1235R 1235SS 1235R	Rp, Fm, ON	2		OV/HCl/Cl
299	Willson	123512 S123512 123512S S123512R 123512SR S123512S S123512SS S123512SSS 123512SSS 123512R 123512SS S123512SR	Rp, FM, ON	2	HA	OV/HCl/Cl
300	Willson	1635 1735	Rp, FM, FF	2		OV/HCl/Cl
301	Willson	163512 173512	Rp, FM, FF	2	HA	OV/HCl/Cl
306	Cesco	95RC50 95SMRC50	Rp, FM, ON	2	HRA	HCl/Cl
307	US Safety	150T41 150L41	Rp, FM, ON	2	HRA	HCl/Cl
308	Cesco	96RC50	Rp, FM, FF	2	HRA	HCl/Cl
309	US Safety	151T41	Rp, FM, FF	2	HRA	HCl/Cl

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
310	Cesco	95RC80 95SMRC80	Rp, FM, ON	2	HRA	OV/HCl/C1
311	US Safety	150T46 150L46	Rp, FM, ON	2	HRA	OV/HCl/C1
312	Cesco	96RC80	Rp, FM, FF	2	HRA	OV/HCl/C1
313	US Safety	151T46	Rp, FM, FF	2	HRA	OV/HCl/C1
318	USD	2203-00 2103-00 2303-00	Rp, FM, ON	2		OV/HCl/C1 formaldehyde
320	Pulmosan	10015 10189 10243 10276	Rp, FM, ON	1		OV/HCl/C1
324	Pulmosan	10030 10255 10204 10288	Rp, FM, ON	1	DM	OV/HCl/C1
339	AO	R4052A S4052A R5052A S5052A R6052A S6052A	Rp, Fm, ON	2		HCl/C1
340	AO	R7052A S7052A	Rp, Fm, FF	2		HCl/C1
341	AO	R4052AD R5052AD R6052AD S4052AD S5052AD S6052AD	Rp, Fm, ON	2	DM	HCl/C1

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
342	AO	R7052AD S7052AD	Rp, Fm, FF	2	DM	HCl/Cl
343	AO	R4053A S4053A R5053A S5053A R6053A S6053A	Rp, Fm, ON	2		OV/HCl/Cl ClO2
344	AO	R7053A S7053A	Rp, Bm, FF	2		OV/HCl/Cl ClO2
345	AO	R4053AD S4053AD R5053AD S5053AD R6053AD S6053AD	Rp, Fm, ON	2	DM	OV/HCl/Cl ClO2
346	AO	R7053AD S7053AD	Rp, Fm, FF	2	DM	OV/HCl/Cl ClO2
352	North	10003S 10003M	Su, ON	1		OV/HCl/Cl
353	North	10002S 10002M	Su, ON	1		HCl/Cl
356	North	10012S 10012M	Su, ON	1	DMA	HCl/Cl
357	North	10013S 10013M	Su, ON	1	DMA	OV/HCl/Cl
359	Cover	1482-G102 1482-S-G102 1482-L-G102	Rp, Fm, ON	2		HCl/Cl

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
368	Willson	3025 3025S S3025 3025R S3025R 3025SR S3025S 3025SSS S3025SS S305SSS 3025SS 3025SR	Rp, Bm, ON	2		OV/HCl/Cl
369	Willson	3125 3225	Rp, Bm, FF	2		OV/HCl/Cl
370	Willson	3035 3035S S3035 3035R S3035S 3035SR S3035R S3035SR S3035SS S3035SSS 3035SS 3035SSS	Rp, Bm, ON	2		OV/HCl/Cl
371	Willson	3135 3235	Rp, Bm, FF	2		OV/HCl/Cl
380	Willson	302510 S302510 302510R S302510S 302510S S302510R 302510SR S302510SR S302510SS S302510SSS 302510SS 302510SSS	Rp, Bm, ON	2	DM	OV/HCl/Cl



CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
381	Willson	312510 322510	Rp,Bm, FF	2	DM	OV/HCl/Cl
386	Willson	303512 303512R 303512S 303512SR 303512SS 303512SSS S303512 S303512S S303512R S303512SR S303512SS S303512SSS	Rp,Bm, ON	2	HA	OV/HCl/Cl
387	Willson	313512 323512	Rp,Bm, FF	2	HA	OV/HCl/Cl
393	USD	2133-00 2233-00 2333-00	Rp,Fm, ON	2	DFMR	OV/HCl/Cl
394	USD	3233-00	Rp,Fm, FF	2	DFMR	OV/HCl/Cl
395	USD	2192-00 2292-00 2392-00	Rp,Fm, ON	2	HA	HCl/Cl
396	USD	3292-00	Rp,Fm, FF	2	HA	HCl/Cl
407	Glendale	GR7022	Rp,Fm, FF	2		HCl/Cl
408	Glendale	GR7022-10	Rp,Fm, FF	2	DM	HCl/Cl
410	Glendale	GR7023	Rp,Fm, FF	2		OV/HCl/Cl
411	Glendale	GR7023-10	Rp,Fm, FF	2	DM	OV/HCl/Cl

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
415	AO	R4052HE S4052HE R5052HE S5052HE R6052HE S6052HE	Rp, Fm, ON	2	HRA	OV/HCl/Cl
416	AO	R7052HE S7052HE	Rp, Fm, FF	2	HRA	OV/HCl/Cl
417	AO	R4053HE S4053HE R5053HE S5053HE R6053HE S6053HE	Rp, Fm, ON	2	HRA	OV/HCl/Cl ClO2
418	AO	R7053HE S7053HE	Rp, Fm, FF	2	HRA	OV/HCl/Cl ClO2
421	Cover	1482-G104-G208 1482-S-G104-G208 1482-L-G104-G208	Rp, Fm, ON	2	HRA	OV/HCl/Cl
429	USD	3202-00	Rp, Fm, FF	2		HCl/Cl
430	USD	2102-00 2202-00 2302-00	Rp, Fm, ON	2		HCl/Cl
431	USD	2112-00 2212-00 2312-00	Rp, Fm, ON	2	DM	HCl/Cl
432	USD	3212-00	Rp, Fm, FF	2	DM	HCl/Cl
433	USD	2113-00 2213-00 2313-00	Rp, Fm, ON	2	DM	OV/HCl/Cl formaldehyde

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
434	USD	3213-00	Rp, Fm, ON	2	DM	OV/HCl/Cl formaldehyde
443	3M	7202	Rp, Fm, ON	2		HCl/Cl
444	3M	7208	Rp, Fm, ON	2	DMA	HCl/Cl
445	3M	7213	Rp, Fm, ON	2	HRA	HCl/Cl
446	3M	7203	Rp, Fm, ON	2		OV/HCl/Cl
447	3M	7209	Rp, Fm, ON	2	DMA	OV/HCl/Cl
448	3M	7214	Rp, Fm, ON	2	HRA	OV/HCl/Cl
449	North	7912	Es, M	1	DM	HCl/Cl
450	USD	2193-00 2293-00 2393-00	Rp, Fm, ON	2	HA	OV/HCl/Cl
451	USD	3293-00	Rp, Fm, FF	2	HA	OV/HCl/Cl
454	USD	3203-00	Rp, Fm, FF	2		OV/HCl/Cl formaldehyde
459	Cover	1482-G102-G208 1482-S-G102-G208 1482-L-G102-G208	Rp, Fm, ON	2	HRA	HCl/Cl
461	MSA	472749	Rp, Bm, ON	2	DM	HCl/Cl formaldehyde
462	MSA	472750	Rp, Bm, ON	2	DM	OV/HCl/Cl formaldehyde

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
466	MSA	472756	Rp,Bm, ON	2	HA	OV/HCl/Cl formaldehyde
467	MSA	472757	Rp,Bm, ON	2	DFMR	OV/HCl/Cl formaldehyde
470	MSA	472760	Rp,Bm, ON	2	HA	HCl/Cl formaldehyde
472	MSA	472764	Rp,Bm, ON	2	DM	OV/HCl/Cl formaldehyde
487	Sellstrom	315-G102-G208	Rp,FM, ON	2	HRA	HCl/Cl
496	Pulmosan	10411	Rp,FM, FF	1		HCl/Cl
497	Pulmosan	10414	Rp, FM, FF	1		OV/HCl/Cl
500	Pulmosan	10423	Rp, FM, FF	1	DM	HCl/Cl
501	Pulmosan	10426	Rp, FM, FF	1	DM	OV/HCl/Cl
511	MSA	469728	Rp,FM, ON	1	DM	OV/HCl/Cl formaldehyde
512	MSA	469729	Rp,FM, ON	1	DM	OV/HCl/Cl formaldehyde
514	MSA	471914 476337 476338	ES, MP	1	DM	HCl/Cl/H2S
516	Pirelli	4336.2023	Rp,FM, ON	2		HCl/Cl

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
517	Scott	64-AG-H 64E-AG-H 64M-AG-H 64ME-AG-H 64S-AG-H 64SE-AG-H	Rp,FM, ON	2	HRA	HCl/Cl formaldehyde
518	Scott	65-AG-H 65S-AG-H	Rp,FM, FF	2	HRA	HCl/Cl formaldehyde
521	Scott	64-OA-H 64E-OA-H 64M-OA-H 64ME-OA-H 64S-OA-H 64SE-OA-H	Rp,FM, ON	2	HRA	OV/HCl/Cl formaldehyde
522	Scott	65-OA-H 65S-OA-H	Rp,FM, FF	2	HRA	OV/HCl/Cl formaldehyde
527	Pirelli	4333.2033	Rp,FM, FF	2		HCl/Cl
532	USD	2143-00 2243-00 2343-00	Rp,FM, ON	2	DFMR	OV/HCl/Cl formaldehyde
533	USD	3243-00	Rp,FM, FF	2	DFMR	OV/HCl/Cl formaldehyde
536	Safety Supply	F-200-AG F-160-AG F-800-AG	Rp,FM, ON	2		HCl/Cl
537	Safety Supply	F-700-AG	Rp,FM, FF	2		HCl/Cl
542	Safety Supply	F-200-OA F-160-OA F-800-OA	Rp,FM, ON	2		OV/HCl/Cl

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
543	Safety Supply	F-700-OA	Rp,FM, FF	2		OV/HCl/Cl
550	Safety Supply	F-160-AG-F-P F-200-AG-F-P F-800-AG-F-P	Rp,FM, ON	2	DM	HCl/Cl
551	Safety Supply	F-700-AG-F-P	Rp,FM, FF	2	DM	HCl/Cl
552	Safety Supply	F-160-OA-F-P F-200-OA-F-P F-800-OA-F-P	Rp,FM, ON	2	DM	HCl/Cl
553	Safety Supply	F-700-OA-F-P	Rp,FM, FF	2	DM	OV/HCl/Cl
563	Willson	1525 1525R 1525SS	Rp,FM, ON	2		OV/HCl/Cl
564	Willson	3525 3525R 3525SS	Rp,FM, ON	2		OV/HCl/Cl
565	Willson	1535 1535R 1535SS	Rp,FM, ON	2		OV/HCl/Cl
566	Willson	3535 3535R 3535SS	Rp,FM, ON	2		OV/HCl/Cl
577	Willson	152510 152510R 152510SS	Rp,FM, ON	2	DM	OV/HCl/Cl

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
578	Willson	352510 352510R 352510SS	Rp,FM, ON	2	DM	OV/HCl/C1
583	Willson	153512 153512R 153512SS	Rp,FM, ON	2	HA	OV/HCl/C1
584	Willson	353512 353512R 353512SS	Rp,FM, ON	2	HA	OV/HCl/C1
587	AO	R4563A S4563A R5563A S5563A R6563A S6563A	Rp,FM, ON	2	DFM	OV/HCl/C1 ClO2/pest
588	AO	R7563A S7563A	Rp,FM, FF	2	DFM	OV/HCl/C1 ClO2/pest
593	Racal	BE1/E	PAPR, HH	3		HCl/C1
594	Racal	BE3/EC BE7/EC	PAPR, FF	3		HCl/C1
595	Racal	BE5/E	PAPR, HH	3		HCl/C1
596	Racal	BE6/E	PAPR, HH	3		HCl/C1
597	Racal	BE1/EP3	PAPR, HH	3	HRA	HCl/C1
598	Racal	BE3/EP3 BE7/EP3	PAPR, FF	3	HRA	HCl/C1
599	Racal	BE5/EP3	PAPR, HH	3	HRA	HCl/C1

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
600	Racal	BE6/EP3	PAPR, HH	1	HRA	HCl/Cl
601	AO	R9722A	ES, MP	1		HCl/Cl
603	Racal	BE17/P3	PAPR, HH	3	HRA	HCl/Cl
605	Racal	BE1/AE	PAPR, HH	3		OV/HCl/Cl
606	Racal	BE3/AE BE7/AE	PAPR, FF	3		OV/HCl/Cl
607	Racal	BE5/AE	PAPR, ON	3		OV/HCl/Cl
608	Racal	BE6/AE	PAPR, ON	3		OV/HCl/Cl
613	Racal	BE8/E	PAPR, ON	3		HCl/Cl
614	Racal	BE8/EP3	PAPR, ON	3	HRA	HCl/Cl
615	Racal	BE8/AE	PAPR, ON	3		OV/HCl/Cl
619	Glendale	GR-1622-50 GR-2022-50 GR-4022-50 GR-8022-50	Rp, FM, ON	2	HRA	Cl/HCl
620	Glendale	GR-7022-50	Rp, FM, FF	2	HRA	HCl/Cl
621	Glendale	GR-2023-50 GR-8023-50 GR-1623-50 GR-4023-50	Rp, FM, ON	2	HRA	OV/HCl/Cl
622	Glendale	GR-4023-50 GR-7023-50	Rp, Fm, FF	2	HRA	OV/HCl/Cl



CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
626	Neoterik	NP1562-7	PAPR	3		OV/HCl/Cl
627	Neoterik	NP1562-6	PAPR	3		HCl/Cl
634	Racal	BE4/E	PAPR, HH	3		HCl/Cl
635	Racal	BE4/EP3	PAPR, HH	3	HRA	HCl/Cl
636	Racal	BE4/AE	PAPR, HH	3		OV/HCl/Cl
638	Neoterik	NP1664-7 NP1564-7	PAPR, FF	3		OV/HCl/Cl
640	Neoterik	NP1664-6 NP1564-6	PAPR, FF	3		HCl/Cl
647	Racal	BE3/AEP3 BE7/AEP3	PAPR, FF	3	HRA	OV/HCl/Cl
648	Racal	BE8/AEP3	PAPR, ON	3	HRA	OV/HCl/Cl
652	North	7592S/M/L 7792S/M/L	Rp, Fm, ON	2	DFM	HCl/Cl formaldehyde
653	North	75BP92M 75BP92L	Rp, Bm, ON	2	DFM	HCl/Cl formaldehyde
654	North	7692 7692S	Rp, Fm, FF	2	DFM	HCl/Cl formaldehyde
655	North	7593S/M/L 7793S/M/L	Rp, Fm, ON	2	DFM	OV/HCl/Cl
656	North	75BP93M 75BP93L	Rp, Bm, ON	2	DFM	OV/HCl/Cl

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
657	North	7693 7693S	Rp, Fm, FF	2	DFM	OV/HCl/C1
664	Cover	1694-G104	Rp, Fm, FF	2		OV/HCl/C1
665	Cover	1694-G104-F100	Rp, Fm, FF	2	DMA	OV/HCl/C1
670	Cover	1694-G104-G208	Rp, Fm, FF	2	HRA	OV/HCl/C1
671	Cover	1694-G102	Rp, Fm, FF	2		HCl/C1
673	Cover	1694-G102-G208	Rp, Fm, FF	2	HRA	HCl/C1
678	Eastern	287	Rp, Fm, ON	2	HRA	OV/HCl/C1
679	AO	R7070A	Rp, Fm, FF	2		OV/HCl/C1 ClO2

## 6. Organic Vapor

### Approval

Approved as respiratory protection against not more than 1000 parts per million organic vapors by volume.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

Do not wear for protection against organic vapors with poor warning properties or those that generate high heats of reaction.

Maximum use concentrations will be lower than 1000 parts per million organic vapors where that concentration produces atmospheres immediately dangerous to life or health.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
40	MSA	459433 461005 460852	Rp, Fm, Bm, ON	2	DM	
49	North	7501* 7501S 7501M 7501L 7701S 7701M 7701L	Rp, Fm, ON	2		
50	Willson	1221 1221 1221R 1221S 1221SR 1221SS 1221SSS S1221 S1221R S1221S S1221SR S1221SS S1221SSS	Rp, Fm, ON	2		
51	Willson	122110 122110R 122110S 122110SR 122110SS 122110SSS S122110 S122110R S122110SSS S122110SS S122110S S122110SR	Rp, Fm, ON	2	DM	

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
52	Willson	122113 122113R 122113S 122113SR 122113SS 122113SSS S122113 S12213R S122113S S122113SR S122113SS S122113SSS	Rp, Fm, ON	2	DFM	
54	Willson	122115 122115R 122115S 122115SR 122115SS 122115SSS S122115 S122115R S122115S S122115SR S122115SS S122115SSS	Rp, Fm, ON	2	DM	ple/pest
56	AO	R4051* R5051* R6051*	Rp, Fm, ON	2		
59	DeVilbiss	MSE-502* MSE-502-1*	Rp, Fm, ON	2		
65	North	7503* 7503S 7503M 7503L 7703S 7703M 7703L	Rp, Fm, ON	2		SO2/HCl/Cl

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
66	North	7513* 7513S 7513M 7513L 7713S 7713M 7713L	Rp, Fm, ON	2	DMA	SO2/HCl/Cl
73	North	7511* 7511S 7511M 7511L 7711S 7711M 7711L	Rp, Fm, ON	2	DMA	
75	North	7531* 7531M 7531S 7531L 7731S 7731M 7731L	Rp, Fm, ON	2		ple
75	Acme	27*	Rp, Fm, ON	2		ple
76	Willson	1225 S1225 1225S S1225S 1225SR S1225SR S1225R S1225SS S1225SSS 1225SSS 1225R 1225SS	Rp, Fm, ON	2		SO2/HCl/Cl

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
77	Willson	122510 122510R 122510S 122510SS 122510SSS S122510 S122510R 122510SR S122510S S122510SS S122510SR S122510SSS	Rp, Fm, ON	2	DM	SO2/HCl/Cl
79	MSA	448848 461009	Rp, Fm, Bm, ON	2	DMA	ple/pest
80	MSA	448849 460853 462241 466249 466250 466251 466255 466528 466529 468015 468016 468017 468018 476726 476727 476728	Rp, Fm, Bm, ON	2	DM	ple
81	Pulmosan	C256* 10009 10183 10219 10270	Rp, Fm, ON	1		
82	AO	R4053* R5053* R6053*	Rp, Fm, ON	2		SO2/HCl/Cl

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
83	AO	R4055 S4055 R5055 S5055 R6055 S6055	Rp, Fm, ON	2	DM	
84	AO	R8151 S8151	Rp, Fm, ON	1		
85	AO	R8153 S8153	Rp, Fm, ON	1		SO2/HCl/Cl
86	Binks	40-129*	Rp, Fm, ON	2		
87	Binks	40-128 40-141 40-143 40-196 40-197 40-198	Rp, Fm, ON	2	DM	ple
88	Glendale	GR1621 GR2021 GR4021 GR8021	Rp, Fm, ON	2		
89	Glendale	GR1621-10 GR2021-10 GR4021-10 GR8021-20	Rp, Fm, ON	2	DM	
90	Glendale	GR1621-20* GR1621-60 GR2021-20* GR2021-60 GR4021-20* GR4021-60 GR8021-20* GR8021-60	Rp, Fm, ON	2		ple



CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
91	Pulmosan	C259* 10024 10198 10222 10282	Rp, Fm, ON	1	DM	
92	AO	R8191P S8191P	Rp, Fm, ON	1	DM	ple
93	AO	R8151P S8151P	Rp, Fm, ON	1	DM	ple
94	AO	R4051P* R5051P* R6051P*	Rp, Fm, ON	2	DM	ple
96	DeVilbiss	MSP-505* MSP-505-1*	Rp, Fm, ON	2	DM	ple
97	AO	R4091P S4091P R5091P S5091P R6091P S6091P	Rp, Fm, ON	2	DM	ple
99	Cesco	94R40*	Rp, Fm, ON	2		
100	Pulmosan	C-251* 10006 10180 10225 10267 11030	Rp, Fm, ON	1		ple
100	Fibre Metal	C-251* 10180*	Rp, Fm, ON	1		ple
100	Shoplyne	10006 10267 10180 10225	Rp, FM, ON	1		ple

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
101	North	7401L* 7401M*	Rp, Fm, ON	1		
102	North	75BP01* 75BP01M 75BP01L	Rp, Bm, ON	2		
103	North	75BP11* 75BP11M 75BP11L	Rp, Bm, ON	2	DMA	
104	North	75BP03* 75BP03M 75BP03L	Rp, Bm, ON	2		SO2/HCl/Cl
105	North	75BP13* 75BP13M 75BP13L	Rp, Bm, ON	2	DMA	SO2/HCl/Cl
106	AO	R4058 S4058 R5058 S5058 R6058 S6058	Rp, Fm, ON	2	DFM	pest
107	Cover	1482-G100 1482-L-G100 1482-S-G100	Rp, Fm, ON	2		
107	Sellstrom	315-G100	Rp, Fm, ON	2		
107	Eastern	E451	Rp, Fm, ON	2		
107	Safe-Tex	236-G100*	Rp, Fm, ON	2		
113	Scott	6411-0013* 6412-0013* 6413-0013* 6421-0013* 6422-0013* 6423-0013*	Rp, Fm, ON	2		

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Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
		64-OV 64E-OV 64M-OV 64ME-OV 64S-OV 64SE-OV				
114	Scott	6411-0113* 6412-0113* 6413-0113* 6421-0113* 6422-0113* 6423-0113* 64-OV-D 64E-OV-D 64M-OV-D 64ME-OV-D 64S-OV-D 64SE-OV-D	Rp, Fm, ON	2	DMA	
117	Scott	6412-0313* 6422-0313* 6411-0313* 6413-0313* 6421-0313* 6423-0313* 64-OV-D 64E-OV-D 64M-OV-D 64ME-OV-D 64S-OV-D 64SE-OV-D	Rp, Fm, ON	2	DFMAR	ple/pest
118	US Safety	150T20 150L20	Fm, ON	2		
119	Cesco	95RC25 95SMRC25	Fm, ON	2		
120	U.S. Safety	150T23 150L23	Rp, Fm, ON	2	DM	
121	Cesco	95RC45 95SMRC45	Rp, Fm, ON	2	DM	

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
123	3M	8712 8734 8741 8751	Su, ON	1	DM 8734, 8741, 8751 only	ple/pest
124	Cover	1482-G100-F102 1482-S-G100-F102 1482-L-G100-F102	Rp, Fm, ON	2		ple/pest
124	Eastern	E454	Rp, Fm, ON	2		ple
124	Sellstrom	315-G100-F102	Rp, Fm, ON	2		ple
124	Safe-Tex	236-G100-F102*	Rp, Fm, ON	2		ple
125	US Safety	150T24	Rp, Fm, ON	2		ple
126	Cesco	95RC35	Rp, Fm, ON	2		ple
127	Stewart- Warner	7931*	Rp, Fm, ON	2		ple
128	Northcott	70-450*	Rp, Fm, ON	2		ple
130	Willson	1621 1721	Rp, Fm, FF	2		
131	Willson	162113 172113	Rp, Fm, FF	2	DMF	
133	Willson	162115 172115	Rp, Fm, FF	2	DM	ple/pest
134	Willson	162110 172110	Rp, Fm, FF	2	DM	

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
141	Willson	1625 1725	Rp,Fm, FF	2		SO2/HCl/Cl
142	Willson	162510 172510	Rp,Fm, FF	2	DM	SO2/HCl/Cl
144	MSA	461848	Rp,Fm, FF	2	DM	
146	MSA	461850	Rp,Fm, FF	2	DM	SO2/HCl/Cl formaldehyde
149	MSA	461846 466256 466257 471726 471727	Rp,Fm, FF	2	DM	pest
151	MSA	461852	Rp,Fm, FF	2	DM	
153	MSA	461855	Rp,Fm, FF	2	HA	SO2/HCl/Cl formaldehyde
154	MSA	461856	Rp,Fm, FF	2	DFMR	SO2/HCl/Cl formaldehyde
155	MSA	461853	Rp,Fm, FF	2	HA	ple/pest
157	MSA	460965 462238	Rp,Fm,Bm, ON	2	DMA	
159	MSA	460847 461013	Rp,Fm,Bm, ON	2	HA	SO2/HCl/Cl formaldehyde
160	MSA	460848 461014	Rp,Fm,Bm, ON	2	DFMR	SO2/HCl/Cl formaldehyde
161	MSA	460846 461012	Rp,Fm,Bm, ON	2	HA	ple/pest

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Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
163	Cover	1482-G104 1482-S-G104 1482-L-G104 1482-G104-F100 1482-S-G104-F100 1482-L-G104-F100	Rp,Fm, ON	2	DMA  1482-G104-F100 only 1482-S-G104-F100 only 1482-L-G104-F100 only	SO2/HCl/Cl
163	Sellstrom	315-G104 315-G104-F100	Rp,Fm, ON	2	DMA	SO2/HCl/Cl
163	Eastern	E452	Rp,Fm, ON	2	DMA	SO2/HCl/Cl
166	Cesco	95RC85 95SMRC85	Fm, ON	2		SO2/HCl/Cl
167	Cesco	95RC105 95SMRC105	Rp,Fm, ON	2	DM	SO2/HCl/Cl
170	US Safety	150T26 150L26	Fm, ON	2		SO2/HCl/Cl
171	US Safety	150T28 150L28	Rp,Fm, ON	2	DM	SO2/HCl/Cl
172	Scott	6411-0015* 6412-0015* 6413-0015* 6421-0015* 6422-0015* 6423-0015* 64-OA 64E-OA 64M-OA 64ME-OA 64S-OA 64SE-OA 604032-15*	Fm, ON	2		SO2/HCl/Cl formaldehyde

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
174	Scott	6411-0115* 6412-0115* 6413-0115* 6421-0115* 6422-0115* 6423-0115* 64-OA-D 64E-OA-D 64M-OA-D 64ME-OA-D 64S-OA-D 64SE-OA-D	Fm, ON	2	DMA	SO2/HCl/Cl formaldehyde
175	North	75BP31* 75BP31M 75BP31L	Rp, Bm, ON	2		pest
180	North	7601 7601S 7601N* 7601SN*	Rp, Fm, FF	2		
181	North	7603 7603S 7603N* 7603SN*	Rp, Fm, FF	2		SO2/HCl/Cl
185	North	7611 7611S 7611N* 7611SN*	Rp, Fm, FF	2	DMA	
186	North	7613 7613S 7613N* 7613SN*	Rp, Fm, FF	2	DMA	SO2/HCl/Cl
188	North	7631 7631S 7631N* 7631SN*	Rp, Fm, FF	2		ple

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
196	3M	8723 8724	Su, ON	1	DM 8724 only	Cl
198	US Safety	150T30*	Fm, ON	2		pest
199	Cesco	95RC125*	Fm, ON	2		pest
201	MSA	465986 466239 466240 466241 466526 466527	Rp, Fm, ON	2	DM	ple
202	Cover	1482-G100-F104 1482-S-G100-F104 1482-L-G100-F104	Rp, Fm, ON	2	DM	ple
202	Eastern	E455	Rp, Fm, ON	2	DM	ple
202	Sellstrom	315-G100-F104	Rp, Fm, ON	2	DM	ple
204	North	7581M 7781M 7581S 7781S 7581L 7781L 7581*	Rp, Fm, ON	2	HA	ple
205	North	75BP81* 75BP81M 75BP81L	Rp, Bm, ON	2	HA	ple
206	North	7681 7681S	Rp, Fm, FF	2	HA	ple



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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
210	North	7583M 7783M 7583S 7783S 7583L 7783L 7583*	Rp, Fm, ON	2	HA	SO2/HCl/Cl
211	North	75BP83* 75BP83M 75BP83L	Rp, Bm, ON	2	HA	SO2/HCl/Cl
212	North	7683S 7683	Rp, Fm, FF	2	HA	SO2/HCl/Cl
216	3M	8725 8726	Su, ON	1	DM 8726 only	SO2/HCl/Cl
219	Scott	6470-0013* 6480-0013* 65-OV 65S-OV	Rp, Fm, FF	2		
220	Scott	6470-0113* 6480-0113* 65-OV-D 65S-OV-D	Rp, Fm, FF	2	DM	
221	Scott	6470-0015* 6480-0015* 65-OA 65S-OA	Rp, Fm, FF	2		SO2/HCl/Cl formaldehyde
222	Scott	6470-0115* 6480-0115* 65-OA-D 65S-OA-D	Rp, Fm, FF	2	DMA	SO2/HCl/Cl formaldehyde
224	Scott	6470-0313* 6480-0313* 65-OVP 65S-OVP	Rp, Fm, FF	2	DFMAR	ple/pest

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
234	AO	R7053*	Rp, Fm, FF	2		SO2/HCl/Cl
236	AO	R7051*	Rp, Fm, FF	2		
237	AO	R7055 S7055	Rp, Fm, FF	2	DM	
238	AO	R7058 S7058	Rp, Fm, FF	2	DMF	pest
239	AO	R7051P*	Rp, Fm, FF	2		ple
240	AO	R7091P S7091P	Rp, Fm, FF	2	DM	ple
241	Glendale	GR-1623 GR-2023 GR-4023 GR-8023	Rp, Fm, ON	2		SO2/HCl/Cl
242	Glendale	GR1623-10 GR2023-10 GR4023-10 GR8023-10	Rp, Fm, ON	2	DM	SO2/HCl/Cl
243	MSA	466165	Rp, Fm, ON	2	HA	
244	MSA	466163	Rp, Bm, ON	2	HA	
245	MSA	466164	Rp, Fm, FF	2	HA	
250	Scott	6411-0315* 6412-0315* 6413-0315* 6421-0315* 6422-0315* 6423-0315*	Rp, Fm, ON	2	DFMAR	SO2/HCl/Cl formaldehyde

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Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
250 Cont.		64-OA-F 64M-OA-F 64ME-OA-F 64E-OA-F 64S-OA-F 64SE-OA-F				
251	Scott	6470-0315* 6480-0315* 65-OA-F 65S-OA-F	Rp, Fm, FF	2	DFMAR	SO2/HCl/Cl formaldehyde
258	Willson	122116 122116R 122116S 122116SR 122116SS 122116SSS S122116 S122116R S122116S S122116SS S122116SSS S122116SR	Rp, Fm, ON	2	DM	ple
259	Willson	162116 172116	Rp, Fm, FF	2	DM	ple
260	MSA	466903	Rp, Fm, ON	2	DM	SO2/HCl/Cl formaldehyde
261	MSA	466902	Rp, Bm, ON	2	DM	SO2/HCl/Cl formaldehyde
262	MSA	466904	Rp, Fm, FF	2	DM	SO2/HCl/Cl formaldehyde
263	Cesco	96RC45	Rp, Fm, FF	2	DM	
264	US Safety	151T23	Rp, Fm, FF	2	DM	

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
267	Cesco	96RC105	Rp, Fm, FF	2	DM	SO2/HCl/Cl
268	US Safety	151T28	Rp, Fm, FF	2	DM	SO2/HCl/Cl
271	Cesco	96RC35*	Rp, Fm, FF	2		ple
272	US Safety	151T24*	Rp, Fm, FF	2		ple
275	Cover	1482-G100-F108 1482-S-G100-F108 1482-L-G100-F108	Rp, Fm, ON	2	DFM	
276	Cover	1482-G100-F100 1482-S-G100-F100 1482-L-G100-F100	Rp, Fm, ON	2	DM	
277	DeVilbiss	MSP-507	Rp, Fm, ON	1		
278	DeVilbiss	MSP-506	Rp, Fm, ON	1	DM	ple
281	AO	R4563 S4563 R5563 S5563 R6563 S6563	Rp, Fm, ON	2	DFM	SO2/HCl/Cl Cl02/pest
282	AO	R7563 S7563	Rp, Fm, FF	2	DFM	SO2/HCl/Cl Cl02/pest
285	MSA	468023 468024 468025 471728 471729	Rp, FM, FF	2	DM	ple

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
286	MSA	468026 468027 468028 468029 468030 468031	Rp, BM, ON	2	DM	ple
287	USD	2101-00 2301-00 2201-00	Rp, FM, ON	2		
293	Willson	1231 1231R 1231S 1231SR 1231SS 1231SSS S1231 S1231R S1231S S1231SR S1231SS S1231SSS	Rp, FM, ON	2		
294	Willson	123112 123112R 123112S 123112SR 123112SS 123112SSS S123112 S123112R S123112S S123112SR S123112SS S123112SSS	Rp, FM, ON	2	HA	
295	Willson	1631 1731	Rp, FM, FF	2		
296	Willson	163112 173112	Rp, FM, FF	2	HA	
297	3M	8729	SU, ON	1		

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
298	Willson	1235 1235R 1235S 1235SR 1235SSS 1235SS S1235 S1235R S1235S S1235SR S1235SS S1235SSS	Rp, Fm, ON	2		SO2/HCl/Cl
299	Willson	123512 123512R 123512S 123512SR 123512SS 123512SSS S123512 S123512R S123512S S123512SR S123512SS S123512SSS	Rp, FM, ON	2	HA	SO2/HCl/Cl
300	Willson	1635 1735	Rp, FM, FF	2		SO2/HCl/Cl
301	Willson	163512 173512	Rp, FM, FF	2	HA	SO2/HCl/Cl
302	Cesco	95RC20 95SMRC20	Rp, FM, ON	2	HRA	
303	US Safety	150T40 150L40	Rp, FM, ON	2	HRA	
304	Cesco	96RC20	Rp, FM, FF	2	HRA	
305	US Safety	151T40	Rp, FM, FF	2	HRA	

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
310	Cesco	95RC80 95SMRC80	Rp, FM, ON	2	HRA	SO2/HCl/Cl
311	US Safety	150T46 150L46	Rp, FM, ON	2	HRA	SO2/HCl/Cl
312	Cesco	96RC80	Rp, FM, FF	2	HRA	SO2/HCl/Cl
313	US Safety	151T46	Rp, FM, FF	2	HRA	SO2/HCl/Cl
318	USD	2203-00 2103-00 2303-00	Rp, FM, ON	2		SO2/HCl/Cl formaldehyde
320	Pulmosan	10015 10189 10243 10276	Rp, FM, ON	1		SO2/HCl/Cl
321	USD	2221-00 2121-00 2321-00	Rp, FM, ON	2	DM	ple
322	USD	2211-00 2111-00 2311-00	Rp, FM, ON	2	DM	
323	USD	2231-00 2131-00 2331-00	Rp, FM, ON	2	DFMR	pest
324	Pulmosan	10030 10255 10204 10288	Rp, FM, ON	1	DM	SO2/HCl/Cl

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
325	AO	R4051A S4051A R5051A S5061A R6051A S6051A	Rp, FM , ON	2		
326	AO	R7051A S7051A	Rp, FM , FF	2		
327	AO	R4051AD S4051AD R5051AD S5051AD R6051AD S6051AD	Rp, FM, ON	2	DM	
328	AO	R7051AD S7051AD	Rp, FM, FF	2	DM	
333	AO	R4051AP S4051AP R5051AP S5051AP R6051AP S6051AP	Rp, FM, ON	2	DM	ple
334	AO	R7051AP S7051AP	Rp, FM, FF	2	DM	ple
335	DeVilbiss	MSP-508 MSP-9508	Rp, FM, ON	2	DM	ple
336	US Safety	150T35 150L35	Rp, Fm, ON	2	DFMR	ple/pest
337	Cesco	95RC115 95SMRC115	Rp, Fm, ON	2	DFMR	ple/pest
338	US Safety	151T35	Rp, Fm, FF	2	DFMR	ple/pest



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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
343	AO	R4053A S4053A R5053A S5053A R6053A S6053A	Rp, Fm, ON	2		SO2/HCl/Cl ClO2
344	AO	R7053A S7053A	Rp, Bm, FF	2		SO2/HCl/Cl ClO2
345	AO	R4053AD S4053AD R5053AD S5053AD R6053AD S6053AD	Rp, Fm, ON	2	DM	SO2/HCl/Cl ClO2
346	AO	R7053AD S7053AD	Rp, Fm, FF	2	DM	SO2/HCl/Cl ClO2
348	Cesco	96RC115	Rp, Fm, FF	2	DFM	ple/pest
349	North	10001S 10001M	Su, ON	1		
351	USD	3201-00	Rp, Fm, FF	2		
352	North	10003S 10003M	Su, ON	1		SO2/HCl/Cl
354	North	10041S 10041M	Su, ON	1		ple/pest
355	North	10011S 10011M	Su, ON	1	DMA	
357	North	10013S 10013M	Su, ON	1	DMA	SO2/HCl/Cl

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Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
360	Willson	3021 3021R 3021S 3021SR 3021SS 3021SSS S3021 S3021S S3021R S3021SR S3021SS S3021SSS	Rp, Bm, ON	2		
361	Willson	3121 3221	Rp, Bm, FF	2		
362	Willson	3031 3031R 3031S 3031SR 3031SS 3031SSS S3031 S3031R S3031S S3031SR S3031SS S3031SSS	Rp, Bm, ON	2		
363	Willson	3131 3231	Rp, Bm, FF	2		
368	Willson	3025 3025R 3025S 3025SR 3025SS 3025SSS S3025 3025R S3025R S3025S S3025SS S305SSS	Rp, Bm, ON	2		SO2/HCl/Cl

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Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
369	Willson	3125 3225	Rp, Bm, FF	2		SO2/HCl/Cl
370	Willson	3035 3035R 3035S 3035SR 3035SS 3035SSS S3035 S3035S S3035R S3035SR S3035SS S3035SSS	Rp, Bm, ON	2		SO2/HCl/Cl
371	Willson	3135 3235	Rp, Bm, FF	2		SO2/HCl/Cl
373	Stewart Warner	7931+	Rp, Fm, ON	2	DFMR	ple/pest
374	Willson	302115 302115R 302115S 302115SR 302115SS 302115SSS S302115 S302115R S302115S S302115SR S302115SS S302115SSS	Rp, Bm, ON	2	DM	ple/pest
375	Willson	312115 322115	Rp, Bm, FF	2	DM	ple/pest
376	Willson	302116 302116R 302116S 302116SR 302116SS 302116SSS S302116	Rp, Bm, ON	2	DM	ple

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Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
376 Cont.		S302116R S302116S S302116SR S302116SS S302116SSS				
377	Willson	312116 322116	Rp, Bm, FF	2	DM	ple
380	Willson	302510 302510R 302510S 302510SR 302510SS 302510SSS S302510 S302510R S302510S S302510SR S302510SS S302510SSS	Rp, Bm, ON	2	DM	SO2/HCl/Cl
381	Willson	312510 322510	Rp, Bm, FF	2	DM	SO2/HCl/Cl
382	Willson	303112 S303112 303112R S303112R 303112S S303112S 303112SR S303112SR S303112SS S303112SSS 303112SS 303112SSS	Rp, Bm, ON	2	HA	
383	Willson	313112 323112	Rp, Bm, FF	2	HA	
386	Willson	303512 303512R 303512S 303512SR 303512SS	Rp, Bm, ON	2	HA	SO2/HCl/Cl

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
386 Cont.		303512SSS S303512 S303512S S303512R S303512SR S303512SS S303512SSS				
387	Willson	313512 323512	Rp, Bm, FF	2	HA	SO2/HCl/C1
388	Willson	312110 322110	Rp, Fm, FF	2	DM	
389	Willson	302110 302110R 302110S 302110SR 302110SS 302110SSS S302110 S302110R S302110S S302110SR S302110SS S302110SSS	Rp, Bm, ON	2	DM	
390	Willson	312113 322113	Rp, Bm, FF	2	DFM	
391	Willson	302113 302113R 302113S 302113SR 302113SS 302113SSS S302113 S302113S S302113R S302113SR S302113SS S302113SSS	Rp, Bm, ON	2	DFM	
392	Northcott	70-450+	Rp, Fm, ON	2	DFMR	ple/pest

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Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
393	USD	2133-00 2233-00 2333-00	Rp,Fm, ON	2	DFMR	SO2/HCl/Cl
394	USD	3233-00	Rp,Fm, FF	2	DFMR	SO2/HCl/Cl
404	Glendale	GR7021	Rp,Fm, FF	2		
405	Glendale	GR7021-10	Rp,Fm, FF	2	DM	
406	Glendale	GR7021-20 GR7021-60	Rp,Fm, FF	2		ple
410	Glendale	GR7023	Rp,Fm, FF	2		SO2/HCl/Cl
411	Glendale	GR7023-10	Rp,Fm, FF	2	DM	SO2/HCl/Cl
413	AO	R4051HE S4051HE R5051HE S5051HE R6051HE S6051HE	Rp,Fm, ON	2	HRA	ple
414	AO	R7051HE S7051HE	Rp,Fm, FF	2	HRA	ple
417	AO	R4053HE S4053HE R5053HE S5053HE R6053HE S6053HE	Rp,Fm, ON	2	HRA	SO2/HCl/Cl ClO2
418	AO	R7053HE S7053HE	Rp,Fm, FF	2	HRA	SO2/HCl/Cl ClO2

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
421	Cover	1482-G104-G208 1482-S-G104-G208 1482-L-G104-G208	Rp, Fm, ON	2	HRA	SO2/HCl/Cl
424	AO	R4051E R5051E R6051E	Rp, Fm, ON	2		
425	AO	R7051E	Rp, Fm, FF	2		
426	AO	R4051EP R5051EP R6051EP	Rp, Fm, ON	2	DMA	ple
427	AO	R7051EP	Rp, Fm, FF	2	DMA	ple
428	DeVilbiss	MSL-500	Rp, Fm, ON	2	DMA	ple
433	USD	2113-00 2213-00 2313-00	Rp, Fm, ON	2	DM	SO2/HCl/Cl formaldehyde
434	USD	3213-00	Rp, Fm, ON	2	DM	SO2/HCl/Cl formaldehyde
435	3M	7201	Rp, Fm, ON	2		
436	3M	7210	Rp, Fm, ON	2	DMA	ple
437	3M	7207	Rp, Fm, ON	2	DMA	
438	3M	7212	Rp, Fm, ON	2	HRA	
446	3M	7203	Rp, Fm, ON	2		SO2/HCl/Cl
447	3M	7209	Rp, Fm, ON	2	DMA	SO2/HCl/Cl

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
448	3M	7214	Rp, Fm, ON	2	HRA	SO2/HCl/Cl
450	USD	2193-00 2293-00 2393-00	Rp, Fm, ON	2	HA	SO2/HCl/Cl
451	USD	3293-00	Rp, Fm, FF	2	HA	SO2/HCl/Cl
452	USD	2191-00 2291-00 2391-00	Rp, Fm, ON	2	HA	
453	USD	3291-00	Rp, Fm, FF	2	HA	
454	USD	3203-00	Rp, Fm, FF	2		SO2/HCl/Cl formaldehyde
455	USD	3221-00	Rp, Fm, FF	2	DM	ple
456	USD	3231-00	Rp, Fm, FF	2	DFMR	pest
458	Cover	1482-G100-G208 1482-L-G100-G208 1482-S-G100-G208	Rp, Fm, ON	2	HRA	
460	MSA	472748	Rp, Bm, ON	2	DM	
462	MSA	472750	Rp, Bm, ON	2	DM	SO2/HCl/Cl formaldehyde
464	MSA	472752	Rp, Bm, ON	2	DM	pest
465	MSA	472755	Rp, Bm, ON	2	HA	ple/pest
466	MSA	472756	Rp, Bm, ON	2	HA	SO2/HCl/Cl formaldehyde



CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
467	MSA	472757	Rp, Bm, ON	2	DFMR	SO2/HCl/Cl formaldehyde
469	MSA	472759	Rp, Bm, ON	2	DM	
471	MSA	472761	Rp, Bm, ON	2	HA	
472	MSA	472764	Rp, Bm, ON	2	DM	SO2/HCl/Cl formaldehyde
473	MSA	472736 472737 472738	Rp, Bm, ON	2	DM	ple
474	MSA	472739 472740 472741	Rp, Bm, ON	2	DM	ple
476	Racal	BE1/A	PAPR, H/H	3		
477	Racal	BE5/A	PAPR, H/H	3		
478	Racal	BE6/A	PAPR, H/H	3		
482	Racal	BE1/A-P3	PAPR, H/H	3	HRA	pest
483	Racal	BE3/A-P3 BE7/A-P3	PAPR, FF	3	HRA	pest
484	Racal	BE5/A-P3	PAPR, HH	3	HRA	pest
485	Racal	BE6/A-P3	PAPR, HH	3	HRA	pest
488	AO	R4055A S4055A R5055A S5055A	Rp, FM, ON	2	DM	

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
488	Cont.	R6055A S6055A				
489	AO	R7055A S7055A	Rp,FM, FF	2	DM	
490	AO	R4091AP S4091AP R5091AP S5091AP R6091AP S6091AP	Rp,FM, ON	2	DM	ple
491	AO	R7091AP S7091AP	Rp,FM, FF	2	DM	ple
494	Pulmosan	10405	Rp,FM, FF	1		ple
495	Pulmosan	10408	Rp,FM, FF	1		
497	Pulmosan	10414	Rp, FM, FF	1		SO2/HCl/Cl
499	Pulmosan	10420	Rp,FM, FF	1	DM	
501	Pulmosan	10426	Rp, FM, FF	1	DM	SO2/HCl/Cl
504	Pirelli	4336.2021	Rp,FM, ON	2		
509	MSA	469727	Rp,FM, ON	1		
510	MSA	470200	Rp,FM, ON	1	DM	ple
512	MSA	469729	Rp,FM, ON	1	DM	SO2/HCl/Cl formaldehyde

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
521	Scott	64-OA-H 64E-OA-H 64M-OA-H 64ME-OA-H 64S-OA-H 64SE-OA-H	Rp,FM, ON	2	HRA	SO2/HCl/Cl formaldehyde
522	Scott	65-OA-H 65S-OA-H	Rp,FM, FF	2	HRA	SO2/HCl/Cl formaldehyde
523	Scott	64-OV-H 64E-OV-H 64M-OV-H 64ME-OV-H 64S-OV-H 64SE-OV-H	Rp,FM, ON	2	HRA	ple/pest
524	Scott	65-OV-H 65S-OV-H	Rp,FM, FF	2	HRA	ple/pest
529	Pirelli	4333.2021	Rp,FM, FF	2		
530	USD	2141-00 2241-00 2341-00	Rp,FM, ON	2	DFMR	pest
531	USD	3241-00	Rp,FM, FF	2	DFMR	pest
532	USD	2143-00 2243-00 2343-00	Rp,FM, ON	2	DFMR	SO2/HCl/Cl formaldehyde
535	Racal	BE3/AC BE7/AC	PAPR, FF	3		
538	Safety	F-160-OV F-200-OV F-800-OV	Rp,FM, ON	2		
539	Safety	F-700-OV	Rp,FM, FF	2		

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
540	Safety	F-160-OV-F-SP F-200-OV-F-SP F-800-OV-F-SP	Rp, FM, ON	2		ple
541	Safety	F-700-OV-F-SP	Rp, FM, FF	2		ple
542	Safety Supply	F-200-OA F-160-OA F-800-OA	Rp, FM, ON	2		SO2/HCl/Cl
543	Safety Supply	F-700-OA	Rp, FM, FF	2		SO2/HCl/Cl
548	Safety	F-160-OV-F-P F-200-OV-F-P F-800-OV-F-P	Rp, FM, ON	2	DM	
549	Safety Supply	F-700-OV-F-P	Rp, FM, FF	2	DM	
552	Safety Supply	F-160-OA-F-P F-200-OA-F-P F-800-OA-F-P	Rp, FM, ON	2	DM	HCl/Cl/SO2
553	Safety Supply	F-700-OA-F-P	Rp, FM, FF	2	DM	SO2/HCl/Cl
554	Pulmosan	10438 10441 11060	Rp, FM, ON	2	DM	ple
555	Willson	1521 1521R 1521SS	Rp, FM, ON	2		

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
556	Willson	3521 3521R 3521SS	Rp,FM, ON	2		
557	Willson	1531 1531R 1531SS	Rp,FM, ON	2		
558	Willson	3531 3531R 3531SS	Rp,FM, ON	2		
563	Willson	1525 1525R 1525SS	Rp,FM, ON	2		SO2/HCl/Cl
564	Willson	3525 3525R 3525SS	Rp,FM, ON	2		SO2/HCl/Cl
565	Willson	1535 1535R 1535SS	Rp,FM, ON	2		SO2/HCl/Cl
566	Willson	3535 3535R 3535SS	Rp,FM, ON	2		SO2/HCl/Cl
567	Willson	152110 152110R 152110SS	Rp,FM, ON	2	DM	
568	Willson	352110 352110OR 352110SS	Rp,FM, ON	2	DM	
569	Willson	152113 152113R 153113SS	Rp,FM, ON	2	DFM	

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
570	Willson	352113 352113R 352113SS	Rp,FM, ON	2	DFM	
571	Willson	152115 152115R 152115SS	Rp,FM, ON	2	DM	ple/pest
572	Willson	352115 352115R 352115SS	Rp,FM, ON	2	DM	ple/pest
573	Willson	152116 152116R 152116SS	Rp,FM, ON	2	DM	ple
574	Willson	352116 352116R 352116SS	Rp,FM, ON	2	DM	ple
577	Willson	152510 152510R 152510SS	Rp,FM, ON	2	DM	SO2/HCl/Cl
578	Willson	352510 352510R 352510SS	Rp,FM, ON	2	DM	SO2/HCl/Cl
579	Willson	153112 153112R 153112SS	Rp,FM, ON	2	HA	
580	Willson	353112 353112R 353112SS	Rp,FM, ON	2	HA	
583	Willson	153512 153512R 153512SS	Rp,FM, ON	2	HA	SO2/HCl/Cl

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
584	Willson	353512 353512R 353512SS	Rp, FM, ON	2	HA	SO2/HCl/Cl
585	AO	R4058A S4058A R5058A S5058A R6058A S6058A	Rp, FM, ON	2	DFM	pest
586	AO	R7058A S7058A	Rp, FM, ON	2	DFM	pest
587	AO	R4563A S4563A R5563A S5563A	Rp, FM, ON	2	DFM	SO2/HCl/Cl ClO2/pest
588	AO	R6563A S6563A R7563A S7563A	Rp, FM, FF	2	DFM	SO2/HCl/Cl ClO2/pest
602	Racal	BE17/AP3	PAPR, HH	3	HRA	pest
605	Racal	BE1/AE	PAPR, HH	3		SO2/HCl/Cl
606	Racal	BE3/AE BE7/AE	PAPR, FF	3		SO2/HCl/Cl
607	Racal	BE5/AE	PAPR, HH	3		SO2/HCl/Cl
608	Racal	BE6/AE	PAPR, HH	3		SO2/HCl/Cl
609	Racal	BE8/A	PAPR, ON	3		
611	Racal	BE8/AP3	PAPR, ON	3	HRA	pest

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
615	Racal	BE8/AE	PAPR, ON	3		SO2/HCl/Cl
616	Shoplyne	11060 10441	Rp,FM, ON	2	DM	ple
617	Glendale	GR-1621-50 GR-2021-50 GR-8021-50	Rp,FM, ON	2	HRA	
618	Glendale	GR-7021-50	Rp,FM, FF	2	HRA	
621	Glendale	GR-2023-50 GR-8023-50 GR-1623-50 GR-4023-50	Rp,FM, ON	2	HRA	SO2/HCl/Cl
622	Glendale	GR-7023-50	Rp, Fm, FF	2	HRA	SO2/HCl/Cl
625	Neoterik	NP1562-5	PAPR, ON	3		
626	Neoterik	NP1562-7	PAPR, ON	3		SO2/HCl/Cl
630	Racal	BE4/A	PAPR, HH	3		
632	Racal	BE4/AP3	PAPR, HH	3	HRA	Pest
636	Racal	BE4/AE	PAPR, HH	3		SO2/HCl/Cl
637	Neoterik	NP1664-5 NP1564-5	PAPR, FF	3		
638	Neoterik	NP1664-7 NP1564-7	PAPR, FF	3		SO2/HCl/Cl
647	Racal	BE3/AEP3 BE7/AEP3	PAPR, ON	2	HRA	SO2/HCl/Cl



CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
648	Racal	BE8/AEP3	PAPR, ON	3	HRA	SO2/HCl/Cl
649	North	7591S/M/L 7791S/M/L	Rp, Fm, ON	2	DFM	
650	North	75BP91M 75BP91L	Rp, Bm, ON	2	DFM	
651	North	7691 7691S	Rp, Fm, FF	2	DFM	
655	North	7593S/M/L 7793S/M/L	Rp, Fm, ON	2	DFM	SO2/HCl/Cl
656	North	75BP93M 75BP93L	Rp, Bm, ON	2	DFM	SO2/HCl/Cl
657	North	7693 7693S	Rp, Fm, FF	2	DFM	SO2/HCl/Cl
661	Cover	1694-G100	Rp, Fm, FF	2		
662	Cover	1694-G100-F100	Rp, Fm, FF	2	DM	
663	Cover	1694-G100-F108	Rp, Fm, FF	2	DFM	
664	Cover	1694-G104	Rp, Fm, FF	2		SO2/HCl/Cl
665	Cover	1694-G104-F100	Rp, Fm, FF	2	DMA	SO2/HCl/Cl
668	Cover	1694-G100-F102	Rp, Fm, FF	2		ple

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
669	Cover	1694-G100-F104	Rp, Fm, FF	2	DM	pest
670	Cover	1694-G104-G208	Rp, Fm, FF	2	HRA	SO2/HCl/Cl
672	Cover	1694-G100-G208	Rp, Fm, FF	2		
675	Binks	40-411 40-412 40-413 40-414 40-415 40-416	Rp, Fm, ON	2	HA	ple
676	AO	R8151A S8151A	Rp, Fm, ON	1		
677	AO	R8151AP S8151AP	Rp, Fm, ON	1	DM	ple
678	Eastern	287	Rp, Fm, ON	2	HRA	SO2/HCl/Cl
679	AO	R7070A S7070A	Rp, Fm, FF	2		SO2/HCl/Cl ClO2

## 7. Paints, Lacquers and Enamels

### Approval

Approved as respiratory protection against (1) mists of paints, lacquers and enamels; (2) not more than 1000 parts per millions organic vapors by volume.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges and filters or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

Do not wear for protection against organic vapors with poor warning properties or those that generate high heats of reaction.

Maximum use concentrations will be lower than 1000 parts per million organic vapors where that concentration produces atmospheres immediately dangerous to life or health.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
54	Willson	122115 S122115SS 122115S 122115SS 122115SR S122115 122115R S122115R S122115SR 122115SSS S122115SSS S122115S	Rp, Fm, ON	2	DM	OV/pest
75	North	7531* 7531M 7731M 7531S 7731S 7531L 7731L	Rp, Fm, ON	2		OV
75	Acme	27*	Rp, Fm, ON	2		OV
79	MSA	448848 461009	Rp, Fm, Bm, ON	2	DMA	OV/pest
80	MSA	448849 462241 460853 466249 466250 466251 466255 466528 466529 468015 468016 468017 468018 476726 476727 476728	Rp, Fm, Bm, ON	2	DM	OV

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
87	Binks	40-128 40-141 40-196 40-197 40-198	Rp, Fm, ON	2	DM	OV 40-143
90	Glendale	GR1621-20* GR1621-60 GR2021-20* GR2021-60 GR4021-20* GR4021-60 GR8021-20* GR8021-60	Rp, Fm, ON	2		OV
92	AO	R8191P S8191P	Rp, Fm, ON	1	DM	OV
93	AO	R8151P S8151P	Rp, Fm, ON	1	DM	OV
94	AO	R4051P* R5051P* R6051P*	Rp, Fm, ON	2	DM	OV
96	DeVilbiss	MSP-505* MSP-505-1*	Rp, Fm, ON	2	DM	OV
97	AO	R4091P S4091P R5091P S5091P R6091P S6091P	Rp, Fm, ON	2	DM	OV
100	Pulmosan	C-251* 10006 10180 10225 10267 11030	Rp, Fm, ON	1		OV
100	Fibre Metal	C-251* 10180*	Rp, Fm, ON	1		OV

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
100	Shopyne	10006 10267 10180 10225	Rp, Fm, ON	1		OV
117	Scott	6412-0313* 6422-0313* 6411-0313* 6413-0313* 6421-0313* 6423-0313* 64-OV-D 64E-OV-D 64M-OV-D 64ME-OV-D 64S-OV-D 64SE-OV-D	Rp, Fm, ON	2	DFMAR	OV/pest
123	3M	8712 8734 8741 8751	Su, ON	1	DM	OV/pest
124	Cover	1482-G100-F102 1482-S-G100-F102 1482-L-G100-F102	Rp, Fm, ON	2		OV/pest
124	Eastern	E454	Rp, Fm, ON	2		OV
124	Sellstrom	315-G100-F102	Rp, Fm, ON	2		OV
124	Safe-Tex	236-G100-F102*	Rp, Fm, ON	2		OV
125	US Safety	150T24	Rp, Fm, ON	2		OV
126	Cesco	95RC35	Rp, Fm, ON	2		OV
127	Stewart- Warner	7931*	Rp, Fm, ON	2		OV

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
128	Northcott	70-450*	Rp, Fm, ON	2		OV
133	Willson	162115 172115	Rp, Fm, FF	2	DM	OV/pest
149	MSA	461846 466256 466257 471726 471727	Rp, Fm, FF	2	DM	pest
155	MSA	461853	Rp, Fm, FF	2	HA	OV/pest
161	MSA	460846 461012	Rp, Fm, Bm, ON	2	HA	OV/pest
188	North	7631 7631S 7631N* 7631SN*	Rp, Fm, FF	2		OV
201	MSA	465986 466239 466240 466241 466526 466527	Rp, Fm, ON	2	DM	OV
204	North	7581M 7781M 7581S 7781S 7581L 7781L 7581*	Rp, Fm, ON	2	HA	OV
205	North	75BP81* 75BP81M 75BP81L	Rp, Bm, ON	2	HA	OV
206	North	7681 7681S	Rp, Fm, FF	2	HA	OV

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
224	Scott	6470-0313* 6480-0313* 65-OVAP 65S-OVAP	Rp, Fm, FF	2	DFMAR	OV/pest
239	AO	R7051P*	Rp, Fm, FF	2		OV
240	AO	R7091P S7091P	Rp, Fm, FF	2	DM	OV
258	Willson	122116 S122116 122116S S122116R 122116SR S122116S S122116SS S122116SSS 122116SSS S122116SR 122116R 122116SS	Rp, Fm, ON	2	DM	OV
259	Willson	162116 172116	Rp, Fm, FF	2	DM	OV
271	Cesco	96RC35*	Rp, Fm, FF	2		OV
272	US Safety	151T24*	Rp, Fm, FF	2		OV
278	DeVilbiss	MSP-506	Rp, Fm, ON	1	DM	OV
285	MSA	468023 468024 468025 471728 471729	Rp, FM, FF	2	DM	OV



CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
286	MSA	468026 468027 468028 468029 468030 468031	Rp, BM, ON	2	DM	OV
321	USD	2221-00 2121-00 2321-00	Rp, FM, ON	2	DM	OV
333	AO	R4051AP S4051AP R5051AP S5051AP R6051AP S6051AP	Rp, FM, ON	2	DM	OV
334	AO	R7051AP S7051AP	Rp, FM, FF	2	DM	OV
335	DeVilbiss	MSP-508 MSP-9508	Rp, FM, ON	2	DM	OV
336	US Safety	150T35 150L35	Rp, Fm, ON	2	DFMR	OV/pest
337	Cesco	95RC115 95SMRC115	Rp, Fm, ON	2	DFMR	OV/pest
338	US Safety	151T35	Rp, Fm, FF	2	DFMR	OV/pest
348	Cesco	96RC115	Rp, Fm, FF	2	DFM	OV/pest
354	North	10041S 10041M	Su, ON	1		OV/pest

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
373	Stewart Warner	7931+	Rp, Fm, ON	2	DFMR	OV/pest
374	Willson	302115 302115R 302115S 302115SR 302115SS 302115SSS S302115 S302115R S302115S S302115SR S302115SS S302115SSS	Rp, Bm, ON	2	DM	OV/pest
375	Willson	312115 322115	Rp, Bm, FF	2	DM	OV/pest
376	Willson	302116 302116R 302116S 302116SR 302116SS 302116SSS S302116 S302116R S302116S S302116SR S302116SS S302116SSS	Rp, Bm, ON	2	DM	OV
377	Willson	312116 322116	Rp, Bm, FF	2	DM	OV
392	Northcott	70-450+	Rp, Fm, ON	2	DFMR	OV/pest
406	Glendale	GR7021-20 GR7021-60	Rp, Fm, FF	2		OV

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
413	AO	R4051HE S4051HE R5051HE S5051HE R6051HE S6051HE	Rp,Fm, ON	2	HRA	OV
414	AO	R7051HE S7051HE	Rp,Fm, FF	2	HRA	OV
426	AO	R4051EP R5051EP R6051EP	Rp,Fm, ON	2	DMA	OV
427	AO	R7051EP	Rp,Fm, FF	2	DMA	OV
428	DeVilbiss	MSL-500	Rp,Fm, ON	2	DMA	OV
436	3M	7210	Rp,Fm, ON	2	DMA	OV
455	USD	3221-00	Rp,Fm, FF	2	DM	OV
465	MSA	472755	Rp,Bm, ON	2	HA	OV/pest
473	MSA	472736 472737 472738	Rp,Bm, ON	2	DM	OV
474	MSA	472739 472740 472741	Rp,Bm, ON	2	DM	OV
490	AO	R4091AP S4091AP R5091AP S5091AP R6091AP S6091AP	Rp,FM, ON	2	DM	OV

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
491	AO	R7091AP S7091AP	Rp,FM, FF	2	DM	OV
494	Pulmosan	10405	Rp,FM, FF	1		OV
510	MSA	470200	Rp,FM, ON	1	DM	OV
523	Scott	64-OV-H 64E-OV-H 64M-OV-H 64ME-OV-H 64S-OV-H 64SE-OV-H	Rp,FM, ON	2	HRA	OV/pest
524	Scott	65-OV-H 65S-OV-H	Rp,FM, FF	2	HRA	OV/pest
571	Willson	152115 152115R 152115SS	Rp,FM, ON	2	DM	OV/pest
572	Willson	352115 352115R 352115SS	Rp,FM, ON	2	DM	OV/pest
573	Willson	152116 152116R 152116SS	Rp,FM, ON	2	DM	OV
574	Willson	352116 352116R 352116SS	Rp,FM, ON	2	DM	OV
616	Shoplyne	11060 10441	Rp,FM, ON	2	DM	OV

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
668	Cover	1694-G100-F102	Rp, Fm, FF	2		OV
675	Binks	40-411 40-412 40-413 40-414 40-415 40-416	Rp, Fm, ON	2	HA	OV
677	AO	R8151AP S8151AP	Rp, Fm, ON	1	DM	OV

## 8. Pesticides

### Approval

Approved as respiratory protection against pesticides.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

Do not wear for protection against organic vapors with poor warning properties or those that generate high heats of reaction.

Maximum use concentrations will be lower than 1000 parts per million organic vapors where that concentration produces atmospheres immediately dangerous to life or health.

Not approved for fumigants.

Refer to pesticide label for limitations on respirator use.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - PESTICIDES

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
54	Willson	122115 S122115SS 122115S 122115SS 122115SR S122115 122115R S122115R S122115SR 122115SSS S122115SSS S122115S	Rp, Fm, ON	2	DM	OV/Ple
74	North	7549* 7549M 7749M 7549S 7749S 7549L 7749L	Rp, Fm, ON	2		
78	3M	W-262-12 W-262-24* W-263-12-L/M/S* W-264-12 W-279-12 W-279-24* W-291-12 W-291-24* W-296-12 W-296-24* W-351-12 W-351-24*	Pw	H/H	1	
106	AO	R4058 S4058 R5058 S5058 R6058 S6058	Rp, Fm, ON	2	DFM	OV

CHEMICAL CARTRIDGES - PESTICIDES

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
110	Pulmosan	C-241* 10264 10177 10228 10003 11051	Rp,Fm, ON	1		
110	Fibre Metal	C-241* 10177* 10228* 10003* 10264*	Rp,Fm, ON	1		
110	Shoplyne	10003 10177 10228 10264	Rp,FM, ON	1		
117	Scott	6412-0313* 6422-0313* 6411-0313* 6413-0313* 6421-0313* 6423-0313* 64-OV-D 64E-OV-D 64M-OV-D 64ME-OV-D 64S-OV-D 64SE-OV-D	Rp,Fm, ON	2	DFMAR	OV/ple
123	3M	8712 8734 8741 8751	Su, ON	1	DM 8734, 8712, 8741 only	OV/ple
133	Willson	162115 172115	Rp,Fm, FF	2	DM	OV/ple
148	MSA	461858	Rp,Fm, FF	2		



CHEMICAL CARTRIDGES - PESTICIDES

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
161	MSA	460846 461012	Rp, Fm, Bm, ON	2	HA	OV/ple
175	North	75BP31* 75BP31M 75BP31L	Rp, Bm, ON	2		OV
178	North	75BP49* 75BP49M 75BP49L	Rp, Bm, ON	2		
190	North	7649 7649S 7649N* 7649SN*	Rp, Fm, FF	2		
197	Glendale	GR-1625 GR-2025 GR-4025 GR-8025	Rp, Fm, ON	2		
198	US Safety	150T30*	Fm, ON	2		OV
199	Cesco	95RC125*	Fm, ON	2		OV
202	Cover	1482-G100-F104 1482-S-G100-F104 1482-L-G100-F104	Rp, Fm, ON	2	DM	OV
202	Eastern	E455	Rp, Fm, ON	2	DM	OV
202	Sellstrom	315-G100-F104	Rp, Fm, ON	2	DM	OV
224	Scott	6470-0313* 6480-0313* 65-OVP 65S-OVP	Rp, Fm, FF	2	DFMAR	OV/ple

CHEMICAL CARTRIDGES - PESTICIDES

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
238	AO	R7058 S7058	Rp, Fm, FF	2	DMF	OV
273	Cesco	96RC125*	Rp, Fm, FF	2		
274	US Safety	151T30*	Rp, Fm, FF	2		
281	AO	R4563 S4563 R5563 S5563 R6563 S6563	Rp, Fm, ON	2	DFM	SO2/HCl/Cl OV/ClO2
282	AO	R7563 S7563	Rp, Fm, FF	2	DFM	SO2/HCl/Cl OV/ClO2
323	USD	2231-00 2131-00 2331-00	Rp, FM, ON	2	DFMR	OV
336	US Safety	150T35 150L35	Rp, Fm, ON	2	DFMR	OV/ple
337	Cesco	95RC115 95SMRC115	Rp, Fm, ON	2	DFMR	OV/ple
338	US Safety	151T35	Rp, Fm, FF	2	DFMR	OV/ple
348	Cesco	96RC115	Rp, Fm, FF	2	DFM	OV/ple
354	North	10041S 10041M	Su, ON	1		OV/ple
373	Stewart Warner	7931+	Rp, Fm, ON	2	DFMR	OV/ple

CHEMICAL CARTRIDGES - PESTICIDES

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
374	Willson	302115 302115R 302115S 302115SR 302115SS 302115SSS S302115 S302115R S302115S S302115SR S302115SS S302115SSS	Rp, Bm, ON	2	DM	OV/ple
375	Willson	312115 322115	Rp, Bm, FF	2	DM	OV/ple
392	Northcott	70-450+	Rp, Fm, ON	2	DFMR	OV/ple
409	Glendale	GR7025	Rp, Fm, FF	2		
439	3M	7205	Rp, Fm, ON	2		
456	USD	3231-00	Rp, Fm, FF	2	DFMR	OV
464	MSA	472752	Rp, Bm, ON	2	DM	OV
465	MSA	472755	Rp, Bm, ON	2	HA	OV/ple
482	Racal	BE 1/A-P3	PAPR, H/H	3	HRA	OV
483	Racal	BE 3/A-P3 BE 7/A-P3	PAPR, FF	3	HRA	OV
484	Racal	BE 5/A-P3	PAPR, HH	3	HRA	OV
485	Racal	BE 6/A-P3	PAPR, HH	3	HRA	OV
493	Pulmosan	10402	Rp, FM, FF	1		

CHEMICAL CARTRIDGES - PESTICIDES

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
523	Scott	64-OV-H 64E-OV-H 64M-OV-H 64ME-OV-H 64S-OV-H 64SE-OV-H	Rp,FM, ON	2	HRA	OV/ple
524	Scott	65-OV-H 65S-OV-H	Rp,FM, FF	2	HRA	OV/ple
530	USD	2141-00 2241-00 2341-00	Rp,FM, ON	2	DFMR	OV
531	USD	3241-00	Rp,FM, FF	2	DFMR	OV
546	Safety	F-160-PT F-200-PT F-800-PT	Rp,FM, ON	2		
547	Safety	F-700-PT	Rp,FM, FF	2		
571	Willson	152115 152115R 152115SS	Rp,FM, ON	2	DM	OV/ple
572	Willson	352115 352115R 352115SS	Rp,FM, ON	2	DM	OV/ple
585	AO	R4058A S4058A R5058A S5058A R6058A S6058A	Rp,FM, ON	2	DFM	OV
586	AO	R7058A S7058A	Rp,FM, ON	2	DFM	OV

CHEMICAL CARTRIDGES - PESTICIDES

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
587	AO	R4563A S4563A R5563A S5563A R6563A S6563A	Rp,FM, ON	2	DFM	SO2/HCl/Cl OV
588	AO	R7563A S7563A	Rp,FM, FF	2	DFM	SO2/HCl/Cl OV
602	Racal	BE17/AP3	PAPR, HH	3	HRA	OV
611	Racal	BE8/AP3	PAPR, ON	3	HRA	OV
632	Racal	BE4/AP3	PAPR, HH	3	HRA	OV
669	Cover	1694-G100-F104	Rp,Fm, FF	2	DM	OV

## 9. Vinyl Chloride

### Approval

Approved as respiratory protection against 10 parts per million vinyl chloride or until indicator change.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be carefully fitted to the wearer's face before use, in accordance with the manufacturer's facepiece fitting instructions.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - VINYL CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
200	3M	8716	Su, ON	1		

## 10. Other Gases and Vapors

### Approval

See approval labels for approved maximum use concentration and for specific limitations.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be carefully fitted to the wearer's face before use, in accordance with the manufacturer's facepiece fitting instructions.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.



CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - MERCURY

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
629	MSA	472959	Rp, BM, ON	2		Cl

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - HYDROGEN SULFIDE

Approval Number	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
492	Scott	70-AG	ES, MP	1		Cl/HCl
514	MSA	471914 476337 476338	ES, MP	1	DM	SO2/HCl/Cl

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - CHLORINE DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
343	AO	R4053A S4053A R5053A S5053A R6053A S6053A	Rp, Fm, ON	2		OV/SO2/HCl Cl
344	AO	R7053A S7053A	Rp, Bm, FF	2		OV/SO2/HCl Cl
345	AO	R4053AD S4053AD R5053AD S5053AD R6053AD S6053AD	Rp, Fm, ON	2	DM	OV/SO2/HCl Cl
346	AO	R7053AD S7053AD	Rp, Fm, FF	2	DM	OV/SO2/HCl Cl
417	AO	R4053HE S4054HE R5053HE S5053HE R6053HE S6053HE	Rp, Fm, ON	2	HRA	OV/SO2/HCl Cl
418	AO	R7053HE S7053HE	Rp, Fm, FF	2	HRA	OV/SO2/HCl Cl
587	AO	R4563A S4563A R5563A S5563A R6563A S6563A	Rp, FM, ON	2	DFM	OV/SO2/HCl Cl/pest
588	AO	R7563A S7563A	Rp, FM, FF	2	DFM	OV/SO2/HCl Cl/pest
679	AO	R7070A S7070A	Rp, Fm, FF	2		OV/SO2/HCl Cl

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
41	MSA	459434 461006	Rp, Fm, Bm, ON	2	DM	SO2/C1/HCl
47	MSA	459435 461007	Rp, Fm, Bm, ON	2	DM	OV/SO2/HCl Cl
115	Scott	6411-0001* 6412-0001* 6413-0001* 6421-0001* 6422-0001* 6423-0001* 64-AG 64E-AG 64M-AG 64ME-AG 64S-AG 64SE-AG	Rp, Fm, ON	2		SO2/HCl/Cl
116	Scott	6411-0101* 6413-0101* 6421-0101* 6423-0101* 6412-0101* 6422-0101* 64-AG-D 64E-AG-D 64M-AG-D 64ME-AG-D 64S-AG-D 64SE-AG-D	Rp, Fm, ON	2	DMA	SO2/HCl/Cl
145	MSA	461849	Rp, Fm, FF	2	DM	SO2/HCl/Cl
146	MSA	461850	Rp, Fm, FF	2	DM	OV/SO2/HCl /Cl
150	MSA	461854	Rp, Fm, FF	2	HA	SO2/HCl/Cl
153	MSA	461855	Rp, Fm, FF	2	HA	OV/SO2/HCl Cl

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
154	MSA	461856	Rp, Fm, FF	2	DFMR	OV/SO2/HCl Cl
156	MSA	461835 462239	Rp, Fm, Bm, ON	2	HA	SO2/HCl/Cl
159	MSA	460847 461013	Rp, Fm, Bm, ON	2	HA	OV/SO2/HCl Cl
160	MSA	460848 461014	Rp, Fm, Bm, ON	2	DFMR	OV/SO2/HCl Cl
172	Scott	6411-0015* 64-OA 6413-0015* 64E-OA 6421-0015* 64M-OA 6423-0015* 64ME-OA 6412-0015* 64S-OA 6422-0015* 64SE-OA	Fm, ON	2		OV/SO2/HCl Cl
174	Scott	6411-0115* 6412-0115* 6413-0115* 6421-0115* 6422-0115* 6423-0115* 64-OA-D 64E-OA-D 64M-OA-D 64ME-OA-D 64S-OA-D 64SE-OA-D 604032-15*	Fm, ON	2	DMA	OV/SO2/HCl Cl
218	Scott	6470-0101* 6480-0101* 65-AG-D 65S-AG-D	Rp, Fm, FF	2	DMA	SO2/HCl/Cl

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
221	Scott	6470-0015* 6480-0015* 65-OA 65S-OA	Rp, Fm, FF	2		OV/SO2/HC1 C1
222	Scott	6470-0115* 6480-0115* 65-OA-D 65S-OA-D	Rp, Fm, FF	2	DMA	OV/SO2/HC1 C1
225	Scott	6470-0001 6480-0001 65-AG 65S-AG	Rp, Fm, FF	2		SO2/HC1/C1
226	North	7502* 7502S 7702S 7502M 7702L 7502L 7702M	Rp, Fm, ON	2		SO2/HC1/C1
227	North	75BP02* 75BP02M 75BP02L	Rp, Bm, ON	2		SO2/HC1/C1
228	North	7602 7602S 7602N* 7602SN*	Rp, Fm, FF	2		SO2/HC1/C1
229	North	7512* 7512S 7512M 7512L 7712S 7712M 7712L	Rp, Fm, ON	2	DMA	SO2/HC1/C1

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
230	North	75BP12* 75BP12M 75BP12L	Rp, Bm, ON	2	DMA	SO2/HCl/Cl
231	North	7612 7612S 7612N* 7612SN*	Rp, Fm, FF	2	DMA	SO2/HCl/Cl
246	Scott	6411-0301* 64-AG-F 6413-0301* 64E-AG-F 6421-0301* 64M-AG-F 6423-0301* 64ME-AG-F 6412-0301* 64S-AG-F 6422-0301* 64SE-AG-F	Rp, Fm, ON	2	DFMAR	SO2/HCl/Cl
247	Scott	6470-0301* 6480-0301* 65-AG-F 65S-AG-F	Rp, Fm, FF	2	DFMAR	SO2/HCl/Cl
250	Scott	6411-0315* 64-OA-F 6413-0315* 64M-OA-F 6421-0315* 64ME-OA-F 6423-0315* 64E-OA-F 6412-0315* 64S-OA-F 6422-0315* 64SE-OA-F	Rp, Fm, ON	2	DFMAR	OV/SO2/HCl Cl
251	Scott	6470-0315* 6480-0315* 65-OA-F 65S-OA-F	Rp, Fm, FF	2	DFMAR	OV/SO2/HCl Cl

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
260	MSA	466903	Rp, Fm, ON	2	DM	OV/SO2/HCl Cl
261	MSA	466902	Rp, Bm, ON	2	DM	OV/SO2/HCl Cl
318	USD	2203-00 2103-00 2303-00	Rp, FM, ON	2		OV/SO2/HCl Cl
372	3M	8754	Su, ON	1		
397	North	7505S* 7505M* 7505L*	Rp, Fm, ON	2		
398	North	7515S* 7515M* 7515L*	Rp, Fm, ON	2	DM	
399	North	75BP05M* 75BP05L*	Rp, Fm, ON	2		
400	North	75BP15M* 75BP15L*	Rp, Fm, ON	2	DM	
401	North	7605* 7605S*	Rp, Fm, FF	2		
402	North	7615* 7615S*	Rp, Fm, FF	2	DM	
433	USD	2113-00 2213-00 2313-00	Rp, Fm, ON	2	DM	OV/SO2/HCl Cl
434	USD	3213-00	Rp, Fm, ON	2	DM	OV/SO2/HCl Cl

CHEMICAL CARTRIDGES -- OTHER GASES AND VAPORS -- FORMALDEHYDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
454	USD	3203-00	Rp, Fm, FF	2		OV/SO2/HCl Cl
461	MSA	472749	Rp, Bm, ON	2	DM	SO2/HCl/Cl
462	MSA	472750	Rp, Bm, ON	2	DM	OV/SO2/HCl Cl
466	MSA	472756	Rp, Bm, ON	2	HA	OV/SO2/HCl Cl
467	MSA	472757	Rp, Bm, ON	2	DFMR	OV/SO2/HCl Cl
470	MSA	472760	Rp, Bm, ON	2	HA	SO2/HCl/Cl
472	MSA	472764	Rp, Bm, ON	2	DM	OV/SO2/HCl Cl
475	3M	7216	Rp, Fm, ON	2		
486	3M	8775	SU, ON	1	DM	
503	3M	7217	Rp, FM, ON	2	DM	
505	AO	R4060A S4060A R5060A S5060A R6060A S6060A	Rp, FM, ON	2		
506	AO	R7060A S7060A	Rp, FM, FF	1		



CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
507	AO	R4060AD S4060AD R5060AD S5060AD R6060AD S6060AD	Rp,FM, ON	2	DM	
508	AO	R7060AD S7060AD	Rp,FM, FF	2	DM	
511	MSA	469728	Rp,FM, ON	1	DM	OV/SO2/HCl Cl
512	MSA	469729	Rp,FM, ON	1	DM	OV/SO2/HCl Cl
517	Scott	64-AG-H 64E-AG-H 64M-AG-H 64ME-AG-H 64S-AG-H 64SE-AG-H	Rp,FM, ON	2	HRA	SO2/HCl/Cl
518	Scott	65-AG-H 65S-AG-H	Rp,FM, FF	2	HRA	SO2/HCl/Cl
521	Scott	64-OA-H 64E-OA-H 64M-OA-H 64ME-OA-H 64S-OA-H 64SE-OA-H	Rp,FM, ON	2	HRA	OV/SO2/HCl Cl
522	Scott	65-OA-H 65S-OA-H	Rp,FM, FF	2	HRA	OV/SO2/HCl Cl
532	USD	2143-00 2243-00 2343-00	Rp,FM, ON	2	DFMR	OV/SO2/HCl Cl

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
533	USD	3243-00	Rp,FM, FF	2	DFMR	OV/SO2/HCl Cl
652	North	7592S,M,L 7792S,M,L	Rp,Fm, ON	2	DFM	SO2/HCl Cl
653	North	75BP92M 75BP92L	Rp,BM, ON	2	DFM	SO2/HCl/Cl
654	North	7692 7692S	Rp,Fm, FF	2	DFM	SO2/HCl Cl



POWERED AIR PURIFYING RESPIRATORS

## F. Powered Air Purifiers

### 1. Gas Masks

#### Approval

See approval label for specific approval information and limitations.

#### Limitations

For respirators evaluated and approved by MSHA under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH, except evaluated under Part 18 for use in methane air atmospheres.

For respirators not approved under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Not for use in atmospheres immediately dangerous to life or health.

(Tight Fitting Facepiece). Do not use if airflow is less than four cubic feet per minute.

(Loose Fitting Hoods or Helmets). Do not use if airflow is less than six cubic feet per minute.

In making renewal and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instructions and maintenance manual for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

POWERED AIR PURIFYING GAS MASKS - OV

Approval Number	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
TC-14G-122	Racal	BE 3/A BE 7/A	PAPR	FF		

POWERED AIR PURIFYING GAS MASKS - CHLORINE

Approval Number	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
TC-14G-123	Racal	BE 3/B BE 7/B	PAPR	FF		HCl

POWERED AIR PURIFYING GAS MASKS - AMMONIA

Approval Number	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
TC-14G-132	Racal	BE 3/K BE 7/K	PAPR	FF		MA

POWERED AIR PURIFYING GAS MASKS - METHYLAMINE

Approval Number	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
TC-14G-132	Racal	BE 3/K BE 7/K	PAPR	FF		NH3

POWERED AIR PURIFYING GAS MASKS - AMMONIA

Approval Number	Approval Issued to	Model Number(s)	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
TC-14G-133	Racal	BE 3/E BE 7/E	PAPR	FF		

## 2. Particulate

### Approval

See approval label for specific approval information and limitations.

### Limitations

For respirators evaluated and approved by MSHA under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH, except evaluated under Part 18 for use in methane air atmospheres.

For respirators not approved under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Not for use in atmospheres immediately dangerous to life or health.

(Tight Fitting Facepiece). Do not use if airflow is less than four cubic feet per minute.

(Loose Fitting Hoods or Helmets). Do not use if airflow is less than six cubic feet per minute.

In making renewal and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instructions and maintenance manual for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing filters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

POWERED AIR PURIFYING PARTICULATE RESPIRATORS - DUSTS AND MISTS

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
197	Racal	AH5	PAPR, HH	1	A
211	Racal	AH21 AH15	PAPR, HH	1	A
235	3M	W-325*	PAPR, HH	1	A, AB
294	Neoterik	AB5 HH5	PAPR, HH	1	
295	Neoterik	AB6 VB6 VH6 HH6 SH6 SB6	PAPR, HH	1	
298	Racal	DM1 BR DM1 WR DM1 BL DM1 WL DM1 BRU DM1 WRU DM1 BLU DM1 WLU	PAPR, HH	1	A
299	Racal	DM3-S DM3-U	PAPR, HH	1	A
318	3M	W425	PAPR, HH	1	A, AB



POWERED AIR PURIFYING PARTICULATE RESPIRATORS - HIGH EFFICIENCY

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
136A	3M	W-250* W-252* W-254* W-260-12 W-260-24* W-261-12 S*/M/L W-261-24 S*/M*/L* W-266-12 W-266-24* W-267* W-278-12 W-278-24* W-350* W-349-12 W-289-12 W-289-24* W-290* W-295-12* W-295-24* W-297* W-349-24*	PAPR, HH	1	R
137	3M	W-251* W-252 W-265-12 W-265-24*	PAPR, HH	1	AB
186	MSA	463353 467963 463354 463355 466607 466608 467964	PAPR, FF	2	A
212	Racal	AH3 AH3-1 AH3B AH3B-1 AH17 AH17-1	PAPR, HH	2	R, A

POWERED AIR PURIFYING PARTICULATE RESPIRATORS - HIGH EFFICIENCY

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
237	Racal	AC3	PAPR, HH	2	R, A
246	3M	W-344	PAPR, HH	1	A
263	Neoterik	AB4 HH4 VH4 VB4 SB4 SH4	PAPR, HH	1	
269	Neoterik	GET GEE GVT GVE GST GSE	PAPR, HH	1	A, R
270	Neoterik	AB10 HH10 SB10 VB10 VH10 SH10	PAPR, HH	1	A, R
275	Racal	BE 1/P3	PAPR, HH	3	A, R
276	Racal	BE 3/P3 BE 7/P3	PAPR, FF	3	A, R
277	Racal	BE 5/P3	PAPR, HH	3	A, R
278	Racal	BE 6/P3	PAPR, HH	3	A, R
285	Neoterik	AB8 HH8 VB8 VH8 SB8 SH8	PAPR, HH	1	A, R

POWERED AIR PURIFYING PARTICULATE RESPIRATORS - HIGH EFFICIENCY

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
321	Racal	BE17/P3	PAPR, HH	3	A, R
324	Racal	BE8/P3	PAPR, ON	3	A, R
327	Neoterik	NP1562-1	PAPR, ON	3	A, R
329	Racal	BE4/P3	PAPR, HH	3	A, R
330	Neoterik	NP1664-1 NP1564-2	PAPR, FF	3	A, R

### 3. Chemical Cartridges

#### Approval

See approval label for specific approval information and limitations.

#### Limitations

For respirators evaluated and approved by MSHA under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH, except evaluated under Part 18 for use in methane air atmospheres.

For respirators not approved under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Not for use in atmospheres immediately dangerous to life or health.

(Tight Fitting Facepiece). Do not use if airflow is less than four cubic feet per minute.

(Loose Fitting Hoods or Helmets). Do not use if airflow is less than six cubic feet per minute.

In making renewal and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instructions and maintenance manual for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
589	Racal	BE 1/K	PAPR, HH	3		MA
590	Racal	BE 3/KC BE 7/KC	PAPR, FF	3		MA
591	Racal	BE 5/K	PAPR, HH	3		MA
592	Racal	BE 6/K	PAPR, HH	3		MA
612	Racal	BE8/K	PAPR, ON	3		MA
628	Neoterik	NP1562-8	PAPR, ON	3		MA
633	Racal	BE4/K	PAPR, HH	3		MA
639	Neoterik	NP1664-8 NP1564-8	PAPR, FF	3		MA
641	Racal	BE1/KP3	PAPR, HH	3	HRA	MA
642	Racal	BE3/KP3 BE7/KP3	PAPR, FF	3	HRA	MA
643	Racal	BE4/KP3	PAPR, HH	3	HRA	MA
644	Racal	BE5/KP3	PAPR, HH	3	HRA	MA
645	Racal	BE6/KP3	PAPR, HH	3	HRA	MA
646	Racal	BE8/KP3	PAPR, ON	3	HRA	MA

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - METHYL AMINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
589	Racal	BE 1/K	PAPR, HH	3		NH3
590	Racal	BE 3/KC BE 7/KC	PAPR, FF	3		NH3
591	Racal	BE 5/K	PAPR, HH	3		NH3
592	Racal	BE 6/K	PAPR, HH	3		NH3
612	Racal	BE8/K	PAPR, ON	3		NH3
628	Neoterik	NP1562-8	PAPR, ON	3		NH3
633	Racal	BE4/K	PAPR, HH	3		NH3
639	Neoterik	NP1664-8 NP1564-8	PAPR, FF	3		NH3
641	Racal	BE1/KP3	PAPR, HH	3	HRA	NH3
642	Racal	BE3/KP3 BE7/KP3	PAPR, FF	3	HRA	NH3
643	Racal	BE4/KP3	PAPR, HH	3	HRA	NH3
644	Racal	BE5/KP3	PAPR, HH	3	HRA	NH3
645	Racal	BE6/KP3	PAPR, HH	3	HRA	NH3
646	Racal	BE8/KP3	PAPR, ON	3	HRA	NH3

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
479	Racal	BE 1/B	PAPR,HH	3		HCl
480	Racal	BE 5/B	PAPR,HH	3		HCl
481	Racal	BE 6/B	PAPR,HH	3		HCl
534	Racal	BE3/BC BE7/BC	PAPR, FF	3		HCl
593	Racal	BE 1/E	PAPR, HH	3		SO2/HCl
594	Racal	BE 3/EC BE 7/EC	PAPR, FF	3		SO2/HCl
595	Racal	BE 5/E	PAPR, HH	3		SO2/HCl
596	Racal	BE 6/E	PAPR, HH	3		SO2/HCl
597	Racal	BE 1/EP3	PAPR, HH	3	HRA	SO2/HCl
598	Racal	BE 3/EP3 BE 7/EP3	PAPR, FF	3	HRA	SO2/HCl
599	Racal	BE 5/EP3	PAPR, HH	3	HRA	SO2/HCl
600	Racal	BE6/EP3	PAPR, HH	3	HRA	SO2/HCl
603	Racal	BE17/P3	PAPR, HH	3	HRA	SO2/HCl
605	Racal	BE1/AE	PAPR, HH	3		OV/SO2/HCl
606	Racal	BE3/AE BE7/AE	PAPR, FF	3		OV/SO2/HCl
607	Racal	BE5/AE	PAPR, HH	3		OV/SO2/HCl

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
608	Racal	BE6/AE	PAPR, HH	3		OV/SO2/HCl
610	Racal	BE8/B	PAPR, ON	3		HCl
613	Racal	BE8/E	PAPR, ON	3		SO2/HCl
614	Racal	BE8/EP3	PAPR, ON	3	HRA	SO2/HCl
615	Racal	BE8/AE	PAPR, ON	3		OV/SO2/HCl
626	Neoterik	NP1562-7	PAPR, ON	3		OV/SO2/HCl
627	Neoterik	NP1562-6	PAPR, ON	3		SO2/HCl
631	Racal	BE4/B	PAPR, HH	3		HCl
634	Racal	BE4/E	PAPR, HH	3		SO2/HCl
635	Racal	BE4/EP3	PAPR, HH	3	HRA	SO2/HCl
636	Racal	BE4/AE	PAPR, HH	3		OV/SO2/HCl
638	Neoterik	NP1664-7 NP1564-7	PAPR, FF	3		OV/SO2/HCl
640	Neoterik	NP1664-6 NP1564-6	PAPR, FF	3		SO2/HCl
647	Racal	BE3/AEP3 BE7/AEP3	PAPR, FF	3	HRA	OV/SO2/HCl
648	Racal	BE8/AEP3	PAPR, ON	3	HRA	OV/SO2/HCl



POWERED AIR PURIFYING CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
479	Racal	BE 1/B	PAPR,HH	3		C1
480	Racal	BE 5/B	PAPR,HH	3		C1
481	Racal	BE 6/B	PAPR,HH	3		C1
534	Racal	BE3/BC BE7/BC	PAPR, FF	3		C1
593	Racal	BE 1/E	PAPR, HH	3		SO2/C1
594	Racal	BE 3/EC BE 7/EC	PAPR, FF	3		SO2/C1
595	Racal	BE 5/E	PAPR, HH	3		SO2/C1
596	Racal	BE 6/E	PAPR, HH	3		SO2/C1
597	Racal	BE 1/EP3	PAPR, HH	3	HRA	SO2/C1
598	Racal	BE 3/EP3 BE 7/EP3	PAPR, FF	3	HRA	SO2/C1
599	Racal	BE 5/EP3	PAPR, HH	3	HRA	SO2/C1
600	Racal	BE6/EP3	PAPR, HH	3	HRA	SO2/C1
603	Racal	BE17/P3	PAPR, HH	3	HRA	SO2/C1
605	Racal	BE1/AE	PAPR, HH	3		OV/SO2/C1
606	Racal	BE3/AE BE7/AE	PAPR, FF	3		OV/SO2/C1
607	Racal	BE5/AE	PAPR, HH	3		OV/SO2/C1

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
608	Racal	BE6/AE	PAPR, HH	3		OV/SO2/Cl
613	Racal	BE8/E	PAPR, ON	3		SO2/Cl
614	Racal	BE8/EP3	PAPR, ON	3	HRA	SO2/Cl
615	Racal	BE8/AE	PAPR, ON	3		OV/SO2/Cl
626	Neoterik	NP1562-7	PAPR, ON	3		OV/SO2/Cl
627	Neoterik	NP1562-6	PAPR, ON	3		SO2/Cl
631	Racal	BE4/B	PAPR, HH	3		Cl
634	Racal	BE4/E	PAPR, HH	3		SO2/Cl
635	Racal	BE4/EP3	PAPR, HH	3	HRA	SO2/Cl
636	Racal	BE4/AE	PAPR, HH	3		OV/SO2/Cl
638	Neoterik	NP1664-7 NP1564-7	PAPR, FF	3		OV/SO2/Cl
640	Neoterik	NP1664-6 NP1564-6	PAPR, FF	3		SO2/Cl
647	Racal	BE3/AEP3 BE7/AEP3	PAPR, FF	3	HRA	OV/SO2/Cl
648	Racal	BE8/AEP3	PAPR, ON	3	HRA	OV/SO2/Cl

## POWERED AIR PURIFYING CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
593	Racal	BE 1/E	PAPR, HH	3		HC1/C1
594	Racal	BE 3/EC BE 7/EC	PAPR, FF	3		HC1/C1
595	Racal	BE 5/E	PAPR, HH	3		HC1/C1
596	Racal	BE 6/E	PAPR, HH	3		HC1/C1
597	Racal	BE 1/EP3	PAPR, HH	3	HRA	HC1/C1
598	Racal	BE 3/EP3 BE 7/EP3	PAPR, FF	3	HRA	HC1/C1
599	Racal	BE 5/EP3	PAPR, HH	3	HRA	HC1/C1
600	Racal	BE6/EP3	PAPR, HH	3	HRA	HC1/C1
603	Racal	BE17/EP3	PAPR, HH	3	HRA	HC1/C1
605	Racal	BE1/AE	PAPR, HH	3		OV/HC1/C1
606	Racal	BE3/AE BE7/AE	PAPR, FF	3		OV/HC1/C1
607	Racal	BE5/AE	PAPR, ON	3		OV/HC1/C1
608	Racal	BE6/AE	PAPR, ON	3		OV/HC1/C1
613	Racal	BE8/E	PAPR, ON	3		HC1/C1
614	Racal	BE8/EP3	PAPR, ON	3	HRA	HC1/C1
615	Racal	BE8/AE	PAPR, ON	3		OV/HC1/C1

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
626	Neoterik	NP1562-7	PAPR, ON	3		OV/HCl/Cl
627	Neoterik	NP1562-6	PAPR, ON	3		HCl/Cl
634	Racal	BE4/E	PAPR, HH	3		HCl/Cl
635	Racal	BE4/EP3	PAPR, HH	3	HRA	HCl/Cl
636	Racal	BE4/AE	PAPR, HH	3		OV/HCl/Cl
638	Neotcrik	NP1664-7 NP1564-7	PAPR, FF	3		OV/HCl/Cl
640	Neoterik	NP1664-6 NP1564-6	PAPR, FF	3		HCl/Cl
647	Racal	BE3/AEP3 BE7/AEP3	PAPR, FF	3	HRA	OV/HCl/Cl
648	Racal	BE8/AEP3	PAPR, ON	3	HRA	OV/HCl/Cl

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - ORGANIC VAPORS

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
476	Racal	BE 1/A	PAPR, H/H	3		
477	Racal	BE 5/A	PAPR, H/H	3		
478	Racal	BE 6/A	PAPR, H/H	3		
482	Racal	BE 1/AP3	PAPR, H/H	3	HRA	pest
483	Racal	BE 3/AP3 BE 7/AP3	PAPR, FF	3	HRA	pest
484	Racal	BE 5/AP3	PAPR, HH	3	HRA	pest
485	Racal	BE 6/AP3	PAPR, HH	3	HRA	pest
535	Racal	BE3/AC BE7/AC	PAPR, FF	3		
602	Racal	BE17/AP3	PAPR, HH	3	HRA	pest
605	Racal	BE1/AE	PAPR, HH	3		SO2/HCl/Cl
606	Racal	BE3/AE BE7/AE	PAPR, FF	3		SO2/HCl/Cl
607	Racal	BE5/AE	PAPR, HH	3		SO2/HCl/Cl
608	Racal	BE6/AE	PAPR, HH	3		SO2/HCl/Cl
611	Racal	BE8/AP3	PAPR, ON	3	HRA	pest
615	Racal	BE8/AE	PAPR, ON	3		SO2/HCl/Cl
625	Neoterik	NP1562-5	PAPR, ON	3		

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - ORGANIC VAPORS

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
626	Neoterik	NP1562-7	PAPR, ON	3		SO2/HCl/Cl
630	Racal	BE4/A	PAPR, HH	3		
632	Racal	BE4/AP3	PAPR, HH	3	HRA	Pest
636	Racal	BE4/AE	PAPR, HH	3		SO2/HCl/Cl
637	Neoterik	NP1664-5 NP1564-5	PAPR, FF	3		
638	Neoterik	NP1664-7 NP1564-7	PAPR, FF	3		SO2/HCl/Cl
647	Racal	BE3/AEP3 BE7/AEP3	PAPR, ON	3	HRA	SO2/HCl/Cl
648	Racal	BE8/AEP3	PAPR, ON	3	HRA	SO2/HCl/Cl

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - PESTICIDES

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
482	Racal	BE 1/AP3	PAPR, H/H	3	HRA	OV
483	Racal	BE 3/AP3 BE 7/AP3	PAPR, FF	3	HRA	OV
484	Racal	BE 5/AP3	PAPR, HH	3	HRA	OV
485	Racal	BE 6/AP3	PAPR, HH	3	HRA	OV
602	Racal	BE17/AP3	PAPR, HH	3	HRA	OV
611	Racal	BE8/AP3	PAPR, ON	3	HRA	OV
632	Racal	BE4/AP3	PAPR, HH	3	HRA	OV

VINYL CHLORIDE RESPIRATORS (11)



## G. Vinyl Chloride

### Approval

Approved as respiratory protection against 10 parts per million vinyl chloride.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instruction for changing sorbent element.

This respirator shall be carefully fitted to the wearer's face before use, in accordance with the manufacturer's facepiece fitting instructions.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

VINYL CHLORIDE RESPIRATORS APPROVED BY MSHA/NIOSH

Approval number TC-11-	Approval issued to	Model number(s)	Respirator type	Face- piece type
1	Scott	601460-01 601460-03 601460-11 601460-13	Bm	ON

NAMES AND ADDRESSES OF MANUFACTURERS AND DISTRIBUTORS

A-BEC Industries 1864 Vanderhorn Drive Memphis, TN 38134	Bowen Tools, Inc. P.O. Box 3186 Houston, TX 77001
Ace Enterprises 820 Northwest 144th St. Miami, FL 33168	Bullard, E. D., Co. 2680 Bridgeway Sausalito, CA 94965
Acme Automotive Finishes 101 Prospect Ave. Cleveland, OH 44115	CSE Corporation 600 Seco Road Monroeville, PA 15146
AGA Corporation 550 County Avenue Secaucus, NJ 07094	Canadian Technical Tape 455 Cote Vertu Rd. Montreal H4N 1EB, CANADA
AGA Spiro, AB S-181 81 Lidingo Sweden	Cesco Safety Products Parmelee Industries, Inc. P.O. Box 1237 Kansas City, MO 64141
Air Components and Equipment, Inc. P.O. Box 16988 Tampa, FL 33687	Clark Sand Company, Inc. P.O. Box 4267 No. Erhmann Street Pensacola, FL 32507
Air-Tek, Co. 10205 Crosstown Circle Eden Prairie, MN 55344	Clemco Industries 1950 Elkhorn Court San Mateo, CA 94120
American Optical Corp. Safety Products Div. 14 Mechanic Street Southbridge, MA 01550	Clemco Industries 3938 Swinnea Road Memphis, TN 38118
Anderson Manufacturing Co. 1014 Fox Chase Road Rockledge, PA 19111	Clemtex, Ltd. 248 McCarthy Drive Houston, TX 77020
Auergesellschaft GMBH 1000 Berlin 65 (West) Friedrich - Krause - Ufer 24	Clifton Precision Division of Litton Ind. P.O. Box 303, Rt. 113 Frederica, DE 19946
Binks Manufacturing Co. 9201 W. Belmont Ave. Franklin Park, IL 60131	Clifton Precision 5100 State Road Drexel Hill, PA 19026-4693
Biosystems, Inc. Pistol Shop Road Rockfall, CT 06481	

Cover, H.S. Co.  
107 East Alexander St.  
P.O. Box 192  
Buchanan, MI 49107

Defense Apparel  
285 Murphy Road  
Hartford, CT 06114

DeVilbiss Company  
300 Phillips Ave.  
P.O. Box 913  
Toledo, OH 43692

Dragerwerk, AG  
D-24 Luebeck 1  
Postfach 1339  
2400 Luebeck 1  
West Germany

Dual Safe Life Support Systems, Inc.  
P.O. Box 873  
2315 West Main Street  
Baytown, Texas 77520

Eastern Safety Equipment Co.  
45-17 Pearson St.  
Long Island City, NY 11101

Empire Abrasive Equipment Corp.  
990 Gantry Road  
Philadelphia, PA 19115

Encon Manufacturing Co.  
13333 Northwest Freeway  
P.O. Box 3826  
Houston, TX 77007

Fiber-Metal, P.O. Box 248  
Concordville, PA 19331

Gerson, Louis  
15 Sproat Street  
Middleboro, MA 02346

Glendale Protective Technologies Inc.  
130 Crossways Park Drive  
Woodbury, NY 11797

Globe Safety Products, Inc.  
125 Sunrise Place  
P.O. Box 7248  
Dayton, OH 45407

Inco, Willson Division  
2nd & Washington Sts.  
P.O. Box 622  
Reading, PA 19603

International Safety Devices  
16717 Smoketree Street  
Hesperia, CA 92345

International Safety Instruments  
Inc.  
480 Perry Street  
P.O. Box 846  
Lawrenceville, GA 30246

Interspiro AB  
S-181  
81 Lidings  
Sweden

Kelco Sales & Engineering Co.  
P.O. Box 422  
Norwalk, CA 90650

Key Houston, Inc.  
13911 Atlanta Blvd.  
Jacksonville, FL 32225

Lancs Industries, Inc.  
12704 NE 124th St.  
Kirkland, WA 98003-4091

Mafter Inc.  
8111 Edison  
Ville d'Anjou MTI  
Quebec, Canada H1J LS9

Mohawk Industrial Supply Company  
P.O. Box 945  
Manchester, CT 06040

Moldex-Metric Inc.  
4671 Leahy Street  
Culver City, CA 90230

Mine Safety Appliances Co.  
600 Penn Center Blvd.  
Pittsburgh, PA 15235

3M Company  
3M Center  
Building 230-B  
St. Paul, MN 55144-1000

National Draeger, Inc.  
101 Technology Drive  
P.O. Box 120  
Pittsburgh, PA 15230

National Mine Service  
4900/600 Grant Street  
Pittsburgh, PA 15219

Neoterik Health Technologies, Inc.  
P.O. Box 78  
Mt. Airy, MD 21771

North Safety Equipment  
2000 Plainfield Pike  
Cranston, RI 02920

Northcott Products Co.  
1826 W. Diversey Parkway  
Chicago, IL 60614

Nuclear Power Outfitters  
P.O. Box 737  
Crystal Lake, Illinois 60014

Ocenco, Inc.  
P.O. Box 8  
Route 22, East  
Blairsville, PA 15717

Parmelee Industries, Inc.  
1535 Walnut Street  
Kansas City, MO 64141

Pauli & Griffin  
137 Utah Ave.  
South San Francisco, CA 94080

Industrie Pirelli  
Azienda Articolli Vari Roma  
Via di Torrespaccata 140, 00169  
Rome, Italy

Portable Air Supply Systems Corp.  
3500 Carnegie Avenue  
Cleveland, OH 44115

Porter Warner Industries  
3819 Dorris Street  
P.O. Box 2158  
Chattanooga, TN 37409

Pulmosan Safety Equipment Corp.  
30-48 Linden Place  
P.O. Box 869  
Flushing, NY 11354

Racal Airstream, Inc.  
7209A Grove Road  
Frederick, MD 21701

Respiratory Systems  
18102 Sky Park South J  
Irvine, CA 92714

Rexnord Electronic Products, Inc.  
45 Great Valley Center  
Malvern, PA 19355-9990

Romiro Technology  
3500 Carnegie Avenue  
Cleveland, OH 44115

Safe-Tex  
Toronto, Ontario  
CANADA

Safety and Supply Co.  
5510 East Marginal Way South  
Seattle, WA 98134

Safety Supply Co.  
Toronto, Ontario  
Canada

Schmidt Manufacturing Inc.  
14400 Alameda Road  
P.O. Box 45857  
Houston, TX 77045

Scott Aviation  
A Figgie International Company  
225 Erie Street  
Lancaster, NY 14086

Sellstrom Manufacturing Co.  
59 E. Van Buren St.  
Chicago, IL 60605

Shoplyne Safety Products  
Cleveland, Ohio 44107

Siebe-Norton Safety Products  
2000 Plainfield Pike  
Cranston, RI 02920

Siebe Gorman, Ltd.  
Avondale Way  
Cwmbran, Gwent, Wales  
NP4, 1YR, Chessington Surrey  
Great Britain

Standard Safety Equipment Corp.  
431 N. Quentin Road  
P.O. Box 188  
Palatine, IL 60067

Stewart-Warner  
Chicago, IL

Sulliblast  
Division of Sullair, Inc.  
105 Lauren Drive  
Belle Chase, LA 70037

USD Corp.  
3323 W. Warner Ave.  
Santa Ana, CA 92702

The Marthens Company  
1044 S. Dittmer Street  
Davenport, IA 52802

Titan Abrasive Systems, Inc.  
P.O. Box 3  
Furlong, PA 18925

United States Safety Service  
Parmelee Industries, Inc.  
P.O. Box 1237  
Kansas City, MO 64141

Zee Medical Products Co.  
Irvine, CA 92714

Appendix I: NIOSH Policy Statement on Approval of  
Air-Purifying Respirators with End-of-Service Life Indicators

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Centers for Disease Control

National Institute for Occupational Safety and Health

NIOSH/MSHA TESTING AND CERTIFICATION OF AIR-PURIFYING RESPIRATORS WITH  
END-OF-SERVICE-LIFE-INDICATORS

Agency: National Institute for Occupational Safety and Health (NIOSH)

Action: Notice of Acceptance of Applications for Approval of Air-Purifying  
Respirators with End of Service Life Indicators

Summary: 30 CFR 11; Sec. 11.150 states that NIOSH and MSHA may, after a review of the effects on wearer's health and safety, approve respirators for gases and vapors not specifically listed in that Section. The current regulations also permit the use of "window indicators" for gas masks to warn the wearer when the canister will no longer remove a contaminants.[11.102-5(c)(2)]. Although indicators are not mentioned in Subpart L, Chemical Cartridge Respirators, there is nothing in the regulations which explicitly prohibit their use. A NIOSH policy to allow ESLI on air-purifying respirators for gases and vapors with adequate warning

properties has already been established (Letter to All Respirator Manufacturers from Dr. Elliott Harris, June 18, 1975).

Use of ESLI on chemical cartridge respirators for use against gases and vapors with poor warning properties could also be approved since Subpart L states:

"Not for use against gases or vapors with poor warning properties (except where MSHA or Occupational Safety and Health Administration standards may permit such use for a specific gas or vapor). . ."  
[11.150 footnote (1)]. Thus air-purifying respirators with ESLI could be approved for substances such as acrylonitrile since the OSHA acrylonitrile standard permits the use of chemical cartridge respirators.

Under the present regulations, NIOSH can also require "any additional requirements deemed necessary to establish the quality, effectiveness, and safety of any respirator used as protection against hazardous atmospheres" [11.63(c)]. NIOSH must notify the applicants in writing of these additional requirements [11.63(d)].

The purpose of this notice is to notify respirator manufacturers and respirator users of the NIOSH requirements for approving air-purifying respirators with either effective passive or active ESLI for use against gases and vapors with adequate warning properties or for use against gases and vapors with inadequate warning properties whenever there is a regulatory standard already permitting the use of air-purifying respirators.



For Further Information Contact: Chief, Certification Branch, 944 Chestnut Ridge Road, Morgantown, WV 26505, (304)/291-4331.

### Supplemental Information

Because human senses are not foolproof in detecting gases and vapors and because many gases and vapors found in the workplace do not have adequate warning properties, NIOSH has been investigating alternate means of wearer detection. In 1976, NIOSH adopted its current policy which allows acceptance of applications for certification of air-purifying respirators for use against gases and vapors with poor warning properties not specifically listed in 30 CFR 11 only if the respirator is equipped with an active ESLI.

An active ESLI is defined as an indicator which invokes a spontaneous warning signal (e.g., flashing lights, ringing bells, etc.) which is automatic. An active indicator was required because the initiation of the warning device does not depend on any initiative of the respirator user. On the other hand, passive indicators, normally color change indicators, require monitoring by the wearer.

During the past several years, NIOSH has received expressions of concern from respirator manufacturers, regulatory agencies, and general industry regarding the Institute's policy of accepting only active ESLI for

certification. In 1983, the issue has arisen twice. OSHA has requested that NIOSH start a certification program for mercury vapor respirators. Since mercury vapor does not have adequate warning properties, either an ESLI or appropriate administrative controls are necessary to ensure safe use of the respirator. More recently, a respirator manufacturer has submitted data on a respirator with a passive ESLI to the OSHA docket on ethylene oxide.

At the October 1983 Mine Health Research Advisory (MHRAC) meeting, NIOSH presented a briefing document, "Consideration of Use of End-of-Service-Life Indicators in Respiratory Protective Devices" and requested that MHRAC provide recommendations to the Institute with regard to the appropriateness of the use of both active and passive ESLI. MHRAC asked their Respirator Subcommittee to review the issue.

The Respirator Subcommittee held a public meeting in Washington, DC on December 19, 1983, to solicit comments from interested parties. The Subcommittee reviewed the comments and then reported back to the full committee at the February 2, 1984, MHRAC meeting.

In addition, based on the public comments, the Subcommittee also suggested a few additions or modifications be made to the NIOSH proposed evaluation criteria. NIOSH incorporated the recommendations. MHRAC also recommended that active and passive ESLI's are appropriate for use with respiratory protective devices so long as criteria are established for their

certification and use which ensures that the user is not exposed to increase risk as a consequence of relying upon such ESLI's.

In order for NIOSH to determine the potential effects on user safety and health, it would be required that all applications for approval of gas and vapor respirators with ESLI contain the following information:

## CRITERIA FOR CERTIFICATION OF END-OF-SERVICE-LIFE INDICATORS

An applicant for certification of an ESLI for use against substances with poor warning properties must provide NIOSH with the following information:

1. Data demonstrating that the ESLI is a reliable indicator of sorbent depletion ( $\leq$  90% of service life). These shall include a flow-temperature study at low and high temperatures, humidities, and contaminant concentrations which are representative of actual workplace conditions where a given respirator will be used. A minimum of 2 contaminant levels must be utilized, the limit level (PEL, TLV, etc.) and the limit times the assigned protection factor for the respirator type.
2. Data on desorption of any impregnating agents used in the indicator, including a flow-temperature study at low and high temperatures and humidities which are representative of actual workplace conditions where a given respirator will be used. Data shall be sufficient to demonstrate safe levels of desorbed agents.
3. Data on the effects of industrial interferences which are commonly found in workplaces where a given respirator will be used. Data should be sufficient to show which interferences could impair the effectiveness of the indicator and the degree of impairment and which substances will not affect the indicator.

4. Data on any reaction products produced in the reaction between the sorbent and the contaminant gases and vapors, including the concentrations and toxicities of such products.
5. Data which predicts the storage life of the indicator. (Simulated aging tests will be acceptable).

In addition to the foregoing, all passive ESLI shall meet the following criteria:

1. A passive ESLI shall be placed on the respirator that it is visible to the wearer.
2. If the passive indicator utilizes color change, the change shall be such that it is detectable to people with physical impairments such as color blindness.
3. If the passive indicator utilizes color change, reference colors for the initial color of the indicator and the final (end point) color of the indicator shall be placed adjacent to the indicator.

All ESLI shall meet the following criteria:

1. The ESLI shall not interfere with the effectiveness of the face seal.

2. The ESLI shall not change the weight distribution of the respirator to the detriment of the facepiece fit.
3. The ESLI shall not interfere with required lines of sight.
4. Any ESLI that is permanently installed in the respirator facepiece shall be capable of withstanding cleaning and a drop from a 6-foot height. Replaceable ESLI must be capable of being easily removed and shall also be capable of withstanding a drop from a 6-foot height.
5. A respirator with an ESLI shall still meet all other applicable requirements set forth in 30 CFR 11.
6. If the ESLI uses any electrical components they shall conform to the provisions of the National Electrical Code and be "intrinsically safe." Where permissibility is required, the respirator shall meet the requirements for permissibility and intrinsic safety set forth in 30 CFR 18, Subpart D. Also, the electrical system shall include an automatic warning mechanism that indicates a loss of power.
7. Effects of industrial interferences which are commonly found where a given respirator will be used and which hinder ESLI performance shall be identified. Substances which are commonly found where the respirator is to be used must be investigated. Data sufficient to

indicate whether the performance is affected must be submitted to NIOSH. The user shall be made aware of use conditions that could cause false positive and negative ESLI responses.

8. The ESLI shall not create any hazard to the wearer's health or safety.
9. Consideration shall be given to the potential impact of common human physical impairments on the effectiveness of the ESLI.

Appendix II: NIOSH Policy Statement on Use of Respirators  
for Protection Against Asbestos.

[Excerpt from NIOSH Testimony at OSHA Asbestos Hearing]

Under Title 30, Code of Federal Regulations, Part 11 (30 CFR 11), NIOSH is required to test and certify respirators within the categories specified therein when such devices are submitted to NIOSH by applicants. Currently, 30 CFR 11, Subpart K defines a number of dust, fume, and mist respirators which may be used for protection against certain hazardous particulate atmospheres. Among the respirators defined in Subpart K are single-use dust respirators designed as respiratory protection against pneumoconiosis-producing and fibrosis-producing dusts, or dusts and mists. The Subpart goes on to list asbestos as one of the dusts against which the single-use dust respirator is designed to protect [Subpart K, Sec. 11.130(H)]. Though at the time of the promulgation of Subpart K, it may have been assumed appropriate to list asbestos as a fibrosis-producing particulate against which the single-use disposable respirator could be reasonably expected to provide adequate protection, NIOSH is no longer confident that such an assumption is reasonable because asbestos is also potent carcinogen. The current requirements of 30 CFR 11 for approval of a single-use dust respirator or dust and mist respirator do not include any tests with fibrous challenge. NIOSH is currently in the process of undertaking a comprehensive revision of 30 CFR 11 and intends to address the issue of appropriate respiratory protection for use against asbestos and to require that any respirator for which such approval is sought be proven to provide effective protection against asbestos. NIOSH may change the regulations included in 30 CFR 11 only in accordance with procedures set forth in the Administrative



Procedures Act. In the interim, NIOSH will continue to approve single-use and replaceable dust/mist respirators for use against asbestos when such approvals are applied for only because of the legal requirement in the current approval regulations. However, NIOSH does not recommend the use of such respirators where exposures to asbestos may occur on the basis that such is not a prudent occupational health risk.

Later in the testimony NIOSH further stated:

Since asbestos is a recognized carcinogen, NIOSH does not recommend the use of air purifying respirators for protection against asbestos.

The position OSHA is considering of permitting only the use of high efficiency air-purifying respirators, although an improvement over the old standard, may not adequately protect exposed workers."

This policy position is contained in

"The Statement of the National Institute for Occupational Safety and Health - The Public Hearings on Occupational Exposure to Asbestos. June 21, 1984, OSHA Public Hearings".

## NIOSH RESPIRATOR PROBLEM INVESTIGATION

Since July 1, 1982, NIOSH has been investigating reports of problems with MSHA/NIOSH-certified respirators that are received from NIOSH audits, regulatory agencies, and users and manufacturers of respirators. As of October 1, 1985, a total of 137 reports were received. Through the cooperative efforts of reporters, NIOSH, and the respirator manufacturers, a number of serious respirator problems have been resolved, improvements have been made in respirator design and performance, and respirator users have been advised where incorrect respirator use has been found.

The goals of the program are to maintain an effective problem reporting and resolution system, to increasingly justify the user's reliance on the MSHA/NIOSH respirator approval program, and to indicate to respirator manufacturers that NIOSH is sincere in its desire to increase the safety and reliability of certified respirators. The following is an up-to-date list of the names and addresses of persons who are responsible for investigation of problems with MSHA/NIOSH-certified respirators:

Mr. William Washburn  
AGA Corporation  
550 County Avenue  
Secaucus, NJ 07094

Mr. W. F. Moon  
H. S. Cover Co.  
107 East Alexander St.  
Buchanan, MI 49107

Mr. Mark Theno  
Air-Tek Company  
6472 Flying Cloud Drive  
Eden Prairie, MN 55344

Mr. S. B. Shearer  
CSE Corporation  
600 Seco Road  
Monroeville, PA 15146

Mr. Joseph Zdrok  
American Optical Corp.  
14 Mechanic Street  
Southbridge, MA 01550

Mr. Carl M. Fink  
Defense Apparel  
285 Murphy Road  
Hartford, CT 06114

Mr. Raymond O. Day  
Mr. Robert Meyer  
Binks Manufacturing Co.  
9201 W. Belmont Ave.  
Franklin Park, IL 60131

Dr. Helmut Sieber  
Draegerwerk AG Lubeck  
Postfach 1339  
2400 Lubeck 1  
Federal Republic of Germany

Mr. Steve Boro  
E. D. Bullard Company  
2680 Bridgeway  
Sausalito, CA 94965

Mr. Willie Yung  
Louis M. Gerson Company  
15 Sproat Street  
Middleboro, MA 02346

Mr. Marc Cooper  
Cesco Safety Prod./Parmelee Ind.  
U. S. Safety Service Co.  
P.O. Box 1237  
Kansas City, MO 64141

Mr. Joel Kaufman  
Glendale Optical Co.  
130 Crossways Park Drive  
Woodbury, NY 11797

Mr. Martin Ziegler  
Mr. Ronald J. DeMeo  
Clifton Precision  
Division of Litton Ind.  
P. O. Box 305  
Frederica, DE 19946

Mr. Stephen H. Bates  
Globe Safety Equipment, Inc.  
PO Box 7248  
Dayton, OH 45407

Mr. Donald M. Dawson  
International Safety Instruments, Inc.  
PO Box 846  
Lawrenceville, GA 30246

Mr. Earl B. Jacobson  
Nuclear Power Outfitters  
PO Box 84  
Crystal Lake, IL 60014

Mr. Bengt Sjard  
Interspiro AB  
S-181 81 LIDINGO  
SWEDEN

Mr. Pat Droppleman  
Ocenco, Incorporated  
400 Academy Drive  
Northbrook, IL 60062

Mr. Ron Therrin  
Lancs Industries  
12704 N. E. 124th Street  
Kirkland, WA 98033-4091

Mr. F. Levi-Senlgaglia  
Pirelli Industrial Products  
6 Ram Ridge Road  
Spring Valley, NY 10977

Mr. Robert E. Arroyo  
Masprot Safety Products Corp.  
2655 Le Jeune Road Suite 302  
Coral Gables, FL 33134

Mr. Ing G. Cappa  
Sekur S.P.A. - Pirelli Group  
Via di Torrespaccata, 140  
00169 Roma, ITALY

Mr. T. D. McConnell  
Mine Safety Appliances Company  
600 Penn Center Boulevard  
Pittsburgh, Pennsylvania 15235

Mr. M. D. Shroff  
Pradeep Raja Bahadur Motilai Mansion  
1st Floor 11/43 Tamarind Street  
Fort Bombay - 400023, INDIA

Mr. Donald P. Wilmes  
3M Company 3M Center  
Building 230-B-06  
St. Paul, MN 55144

Mr. Jay Parker  
Pulmosan Safety Equipment Corp.  
30-48 Linden Place  
Flushing, NY 11354

Mr. Albert Mintz  
Moldex/Metrics, Incorporated  
4671 Leahy Street  
Culver City, California 90230

Mr. Donald Burd  
Racal Airstream, Inc.  
7309A Grove Road  
Frederick, MD 21701

Mr. Les Boord  
Mr. Wes Kenneweg  
National Draeger, Inc.  
P. O. Box 120  
Pittsburgh, Pennsylvania 15230

Mr. Justin Mills  
Rexnord Safety Products  
45 Great Valley Parkway  
Malvaern, PA 19355

Mr. Stephen C. Smith  
National Mine Service Company  
600 N. Bell Ave., Bldg. 2, Ste 110  
Carnegie, Pennsylvania 15106

Mr. Walter Anderson  
Robertshaw Controls Co.  
333 North Euclid Way  
Anaheim, CA 92803

Mr. Ken Vaughn  
Neoterik Health Tech., Inc.  
P.O. Box 78  
Mt. Airy, MD 21771

Mr. Gerald S. Gilbert  
Romiro Technology  
3500 Carnegie Avenue  
Cleveland, OH 44115

Ms. C. E. Chappron  
North Safety Equipment  
2000 Plainfield Pike  
Cranston, RI 02920

Mr. Ian V. Maxwell  
Sabre Safety, Ltd.  
Ash Road, Aldershot  
Hampshire, GU12 4DD  
England

Ms Antonette Bonfiglio  
(Air-purifying respirators)  
U.S.D. Corp.  
3323 West Warner Ave.  
Santa Ana, CA 92702

Mr. Paul McConnaughey  
Safety and Supply Co.  
5510 East Marginal Way South  
Seattle, WA 98134

Dr. Richard Stein  
(Atmosphere-supplying respirators)  
U.S.D. Corp.  
3323 West Warner Ave.  
Santa Ana, CA 92702

Mr. Robert Brennan  
Scott Aviation  
225 Erie Street  
Lancaster, NY 14086

Mr. David Koch  
Willson Safety Products  
PO Box 622  
Reading, PA 19603

Mr. Simon Kugler  
Siebe Gorman, Ltd.  
Avondale Way, Cwmbran, Gwent, Wales  
NP4 1 YR, Great Britain

Mr. Larry Schaefer  
Standard Safety Equipment Corp.  
P.O. Box 188  
Palatine, IL 60067

Mine Safety and Health Administration

Mr. Kenneth P. Klouse  
MSHA Approval and Certification Center  
PO Box 251, Route 1  
Triadelphia, WV 26059

National Institute for Occupational Safety and Health

Respirator Problem Coordinator  
Division of Safety Research  
NIOSH, CDC, PHS, HHS  
944 Chestnut Ridge Road  
Morgantown, WV 26505

THE FOLLOWING USERS' NOTICES HAVE BEEN ISSUED BY NIOSH SINCE OCTOBER 1, 1984:



Centers for Disease Control  
National Institute for Occupational  
Safety and Health – ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505-2888

November 6, 1984

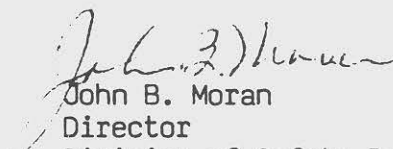
## RESPIRATOR USERS' NOTICE

### USE OF UNAPPROVED SUBASSEMBLIES

The National Institute for Occupational Safety and Health (NIOSH) has received many questions and complaints in regard to interchangeability of respirator subassemblies and unapproved modifications to MSHA/NIOSH certified respirators. Further, some problems reported to NIOSH have, upon investigation, been found to have been caused by user's modifying certified respirators which have resulted in the modified respirator failing to perform as anticipated, thus jeopardizing the respirator user.

MSHA/NIOSH respirator certification regulations, Title 30 Code of Federal Regulations Part 11 (30 CFR 11), state that approved respirators are ones that "are maintained in an approved condition and are the same in all respects as those respirators for which a certificate has been issued." [30 CFR 11, 11.2(b)] In addition, the regulations permit NIOSH/MSHA to only approve complete respirator assemblies and prohibit the approval of respirator subassemblies such as cylinders or air supply hoses. These requirements are intended to insure that one manufacturer has overall control and responsibility for the integrity of the approved respirator.

In some cases even minor modifications to respirators may make significant changes in the performance of the respirator. Manufacturers who modify certified respirators must test the modification to determine if the respirator continues to meet the minimum requirements of 30 CFR 11, and must submit the modifications to NIOSH. A user who modifies a certified respirator may not be able to determine whether a change will decrease respiratory protection. Several cases have been reported to NIOSH where unapproved modifications or use of an unapproved subassembly have resulted in respirator failures. Therefore, users of NIOSH/MSHA approved respirators are cautioned against interchanging subassemblies or making unapproved modifications to their respiratory protective devices.

  
John B. Moran  
Director  
Division of Safety Research



Centers for Disease Control  
National Institute for Occupational  
Safety and Health – ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505-2888

November 20, 1984

#### RESPIRATOR USERS NOTICE

#### 4500-psi Hoop-wrapped Aluminum Cylinders Manufactured by Luxfer USA Ltd., 1995 Third Street, Riverside, CA 92507

The National Institute for Occupational Safety and Health (NIOSH) issued a Respirator Users Warning on July 21, 1983, and a Respirator Users Notice on February 29, 1984, concerning reported ruptures of certain 4500-psi/DOT-E 7235 hoop-wrapped aluminum cylinders manufactured by Luxfer USA Ltd. Users were advised by NIOSH of a reduction in service pressure to 4000 psi, announced by the Department of Transportation (DOT), to prevent further ruptures. Users were also advised that the reduced pressure necessitated a temporary reduction in service time of Mine Safety and Health Administration (MSHA)/NIOSH-certified breathing apparatus incorporating those cylinders, from 30 minutes to not more than 25 minutes. A recall for examination of all such cylinders manufactured prior to May, 1981, was announced by Luxfer. NIOSH advised manufacturers of breathing apparatus incorporating those cylinders, of the status of corrective action by Luxfer, on April 16, and August 6, 1984.

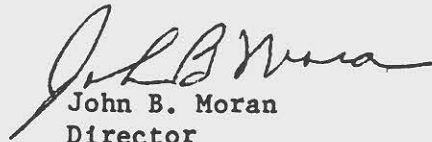
DOT announced in the Federal Register of November 1, 1984, that Luxfer will retrofit each 4500-psi/DOT-E 7235 hoop-wrapped aluminum cylinder, with a steel neck ring, designed to prevent cylinder rupture. DOT has accepted this ring as a corrective action and will permit cylinders fitted with this ring to be pressurized to 4500 psi.

Luxfer has advised NIOSH that retrofit facilities have been established which have been identified to DOT and to which users need to return Luxfer 4500-psi/DOT-E 7235 hoop-wrapped aluminum cylinders for addition of the steel neck ring.

These facilities will accept cylinders for retrofitting, without charge to the user, until June 1, 1985. After that date, cylinders must be returned to Luxfer USA Ltd., at Riverside, CA, and a charge will be made for retrofitting cylinders with the steel neck ring. Luxfer is contacting cylinder users with scheduling information for the retrofit of their 4500-psi/DOT-E 7235 hoop-wrapped aluminum cylinders. Users who are not contacted by December 31, 1984, are urged to write or call Luxfer USA Ltd., 1995 Third Street, Riverside, CA 92507 (714-684-5110), and arrange for cylinder retrofitting.

Page 2-Users Notice

Until cylinders are retrofitted, the maximum pressure of 4,000 psi and the temporary rated service time of not more than 25 minutes will remain in effect. After September 1, 1985, only those self-contained breathing apparatus incorporating 4500-psi/DOT-E7235 hoop-wrapped aluminum cylinders, which have such cylinders retrofitted with a steel neck ring by an authorized retrofit facility, will be considered to be certified by MSHA/NIOSH. After cylinder retrofiting, the rated service time for these MSHA/NIOSH-approved self-contained breathing apparatus will return to the original 30 minutes.



John B. Moran  
Director  
Division of Safety Research

Changes and corrections in  
NAMES AND ADDRESSES OF PERSONS WHO ARE RESPONSIBLE  
FOR INVESTIGATION OF PROBLEMS WITH MSHA/NIOSH-APPROVED RESPIRATORS

Page One: Change Glendale Opeical Co. to Glendale Optical Co.

Page Two: Delete Mr. Ben Huey, Rexnord Safety Products, 45 Great Valley Parkway, Malvern, PA 19355.

Add Mr. John Moffa, Rexnord, 45 Great Valley Parkway, Malvern, PA 19355.





Centers for Disease Control  
National Institute for Occupational  
Safety and Health – ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505-2888

May 7, 1985

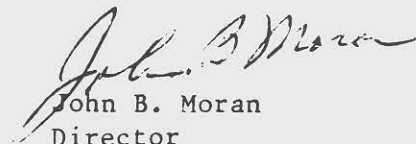
#### RESPIRATOR USERS NOTICE

##### Addition of Steel Neck Ring to 4500-psi Hoop-wrapped Aluminum Cylinders Manufactured by Luxfer USA Ltd.

The National Institute for Occupational Safety and Health (NIOSH) issued a Respirator Users Notice on November 20, 1984, advising users of self-contained breathing apparatus which incorporate 4500-psi/DOT-E 7235 hoop-wrapped aluminum cylinders, of the need to return those cylinders to Luxfer for installation of a steel neck ring. That ring is designed to prevent the possibility of sudden rupture of the cylinder when it is pressurized to 4500 psi.

It is urgent, to prevent such rupture from occurring, that every 4500-psi/ DOT-E 7235 cylinder in use or being stored for future use, be fitted with this ring. Hydrostatic test stations may not accept unfitted cylinders for hydrostatic testing. The cylinder without a neck ring cannot be used as part of an MSHA/NIOSH-approved self-contained breathing apparatus after September 1, 1985. Do not pressurize a 4500-psi/ DOT-E 7235 cylinder above 4000 psi until after the neck ring is installed.

If you have, or are aware of, the location of any 4500-psi/ DOT-E 7235 hoop wrapped aluminum cylinders, manufactured by Luxfer USA Ltd., that have not been fitted with a steel neck ring, you should immediately contact Luxfer and obtain information on installation of that ring. Write or call Luxfer USA, Ltd., 1995 Third Street, Riverside, CA 92507, (714) 684-5110.



John B. Moran  
Director

Division of Safety Research

May 8, 1985

NIOSH has been advised that a Luxfer 4500-psi DOT-E 7235 cylinder ruptured on May 6, 1985, while being charged to 2,000 psi. The cylinder was being charged in a water bath. No one was injured, but the cylinder head was found 6 blocks away and the cylinder body was found 2 blocks away from the charging station. This cylinder was one of those recalled by Luxfer in July, 1983 (Serial Nos. WA 43160 to WA 50178 and WF 20312 to WF 21548). It was not returned for replacement, nor was it fitted with a steel neck ring.

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John B. Moran



June 28, 1985

Centers for Disease Control  
National Institute for Occupational  
Safety and Health – ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505-2888

## RESPIRATOR USERS NOTICE

Use and Maintenance of Pressure-demand  
Self-contained Breathing Apparatus

Since July 1, 1983, the Occupational Safety and Health Administration (OSHA) Fire Brigade Standard, Title 29, Code of Federal Regulations, Part 1910.156, has required that pressure-demand or other positive pressure self-contained breathing apparatus be worn by fire brigade members performing interior structural fire fighting. Although this standard is only applicable to all industrial fire brigades and to municipal fire departments in states with state-OSHA plans, other fire service organizations and industrial users of self-contained breathing apparatus (SCBA) have also recognized the superior protective capabilities of positive-pressure SCBA. As a result, there has been a steady change from demand to pressure-demand SCBA in the United States.

To provide the increased respiratory protection afforded by pressure-demand SCBA, it is generally necessary to increase the static pressure within the facepiece. The complex mechanics necessary to maintain this increased pressure and to control air flow when the facepiece is removed, together with the wearer's physiological response to the pressure-demand system, have presented problems to SCBA users.

Pressure demand SCBA requires more careful maintenance and different training, than is required for demand SCBA. Manufacturers have been providing maintenance and use instructions and training for purchasers of pressure-demand SCBA. The National Institute for Occupational Safety and Health (NIOSH) recommends that users of pressure-demand SCBA read those instructions, follow them carefully in apparatus use and maintenance, and take advantage of the manufacturer's training assistance. In addition to the manufacturers, training courses are offered by Fire Service organizations and by private organizations.

In the area of pressure-demand SCBA maintenance and repair, NIOSH strongly recommends that users have this service performed by a manufacturer-trained representative. This service is required to assure continued safe performance of pressure-demand SCBA.

Please advise NIOSH of any problems encountered in maintenance and use of pressure-demand self-contained breathing apparatus. Call the NIOSH Respirator Problem Coordinator, (304) 291-4595 (FTS 923-4595).

Use and Maintenance of Pressure-Demand SCBA/Page 2

To assist you, NIOSH has prepared the following list of manufacturer's and fire service organization personnel who can provide further information on pressure-demand breathing apparatus training:

Clifton Precision  
5100 State Road  
Drexel Hill, PA 19026  
Mr. Robert Gray (215) 622-1718

North Safety Equipment  
2000 Plainfield Pike  
Cranston, RI 02920  
Mr. Richard T. Flynn (401) 943-4400

Globe Safety Equipment, Inc.  
P.O. Box 7248  
Dayton, OH 45407  
Mr. Steven Bates (513) 224-7468

Rexnord  
45 Great Valley Parkway  
Malvern, PA 19355  
Mr. Justin Mills (215) 647-7200 \*

International Safety Instruments, Inc.  
P.O. Box 846  
Lawrenceville, GA 30246  
Mr. Donald Dawson (404) 962-2552

Scott Aviation  
225 Erie Street  
Lancaster, NY 14086  
Mr. Dennis Browner (716) 683-5100

MSA  
600 Penn Center Boulevard  
Pittsburgh, PA 15235  
Mr. Jay Mears (412) 273-5145

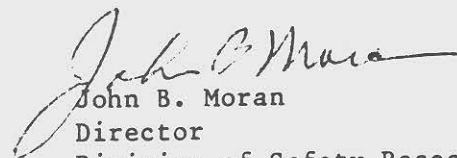
U.S.D.  
3323 West Warner Avenue  
Santa Ana, CA 92702  
Mr. Brian Miller (714) 241-4601

National Draeger, Inc.  
P.O. Box 120  
Pittsburgh, PA 15230  
Mr. Les Boord/Ms. Karen Cox/Mr. Richard Weaver (412) 787-8383

International Association of Fire Chiefs  
1329 18th Street, NW  
Washington, DC 20036  
Mr. Jan Thomas (202) 833-3420

International Association of Fire Fighters  
1750 New York Avenue, NW  
Washington, DC 20006  
Mr. Richard Duffy (202) 737-8484

International Society of Fire Service Instructors  
20 Main Street  
Ashland, MA 01721  
Mr. Ed McCormack (617) 881-5800

  
John B. Moran  
Director  
Division of Safety Research

\* New contact for reporting respirator problems (replaced Mr. John Moffa)



August 28, 1985

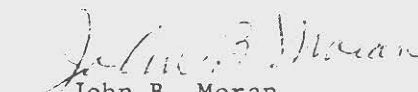
Centers for Disease Control  
National Institute for Occupational  
Safety and Health - ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505TERMINATION OF MSHA/NIOSH APPROVAL OF SELF-CONTAINED  
BREATHING APPARATUS INCORPORATING LUXFER DOT-E 7235 4500  
CYLINDERS WITHOUT NECK RINGS

The Materials Transportation Bureau (MTB), Research and Special Programs Administration, Department of Transportation (DOT), issued a Notice on August 15, 1985 (50 FR 32944), concerning Luxfer cylinders. The Notice required that all specified cylinders manufactured under DOT-E 7235 that are marked DOT-E 7235 4500 and not equipped with neck rings installed under the supervision of Luxfer, be removed from service before October 1, 1985. This action was taken because MTB believes continued use of these cylinders without neck rings may pose a safety problem. In addition, the DOT Notice specifies that such cylinders not equipped with neck rings may present a safety problem even when the filling pressure is limited to 4000 psi.

On November 20, 1984, the National Institute for Occupational Safety and Health (NIOSH) issued a Users Notice on this subject. NIOSH advised users of self-contained breathing apparatus incorporating Luxfer DOT-E 7235 4500 cylinders and approved as auxiliary respiratory equipment for use in mines and mining, that the Mine Safety and Health Administration (MSHA)/NIOSH approval on such apparatus will terminate on September 1, 1985, unless the cylinder is retrofitted with a neck ring as prescribed in that Notice.

Users of apparatus incorporating Luxfer DOT-E 7235 4500 cylinders have been reporting some delay in having their cylinders retrofitted with neck rings. In view of this and the MTB Notice, NIOSH hereby extends the approval of apparatus incorporating such cylinders without neck rings, to October 1, 1985. Respirator assemblies utilizing Luxfer DOT-E 7235 4500 cylinders without neck rings will no longer be considered approved devices after this date.

Since MTB states that prolonged usage of DOT-E 7235 4500 cylinders without neck rings may present a safety problem even when the filling pressure is limited to 4000 psi, no further extension of approval time will be considered. Furthermore, NIOSH cautions all users of apparatus incorporating these cylinders to USE EXTREME CAUTION WHEN FILLING ANY DOT-E 7235 4500 CYLINDER NOT EQUIPPED WITH A NECK RING.



John B. Moran  
Director, Division of Safety Research

## REVISED LIST OF MANUFACTURERS CONTACTS

The person at Parmalee Industries (Cesco, U. S. Safety, Stewart Warner and Northcott) who will respond to reports of problems with MSHA/NIOSH-approved respirators, is Mr. Marc Cooper. The address of Parmalee Industries is P. O. Box 1237, Kansas City, Missouri 64141.



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PUBLIC HEALTH SERVICE  
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