RESPIRATORY PROTECTIVE DEVICES
APPROVED BY THE BUREAU OF MINES
AS OF DECEMBER 31, 1968

A Revision of Information Circular 8281

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1969
RESPIRATORY PROTECTIVE DEVICES
APPROVED BY THE BUREAU OF MINES
AS OF DECEMBER 31, 1968

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By R. H. Schutz and E. J. Kloos

* * * * * * * * * * * * * * information circular 8436

UNITED STATES DEPARTMENT OF THE INTERIOR
Walter J. Hickel, Secretary

BUREAU OF MINES
John F. O'Leary, Director
Schutz, Robert H


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RESPIRATORY PROTECTIVE DEVICES APPROVED BY THE BUREAU
OF MINES AS OF DECEMBER 31, 1968

A Revision of Information Circular 8281

by

R. H. Schutz\(^1\) and E. J. Kloos\(^2\)

ABSTRACT

This publication lists the respiratory protective devices approved by the
Bureau of Mines as of December 31, 1968, and the names and addresses of their
manufacturers. The purpose of this publication is to inform the public about
approved equipment for safe use in mines and mineral and allied industries.

INTRODUCTION

The Federal Bureau of Mines was established in July 1910 to conduct
research and to establish standards for mining equipment and practices which
would conserve human life, natural resources, and property in the mineral
industries. Because of its expert knowledge in the mine safety field, the
Bureau was selected in 1918 to test and approve oxygen breathing apparatus for
mine rescue operations.

Approval schedule 13, for self-contained breathing apparatus, was issued
in 1919. Subsequently, schedule 14 for gas masks, schedule 19 for supplied-air respirators, schedule 21 for dust, fume, and mist respirators, and sched-
ule 23 for chemical-cartridge respirators were issued. A complete list of
these schedules, their revisions, and their effective dates appears in the
Bibliography of this publication. The Bureau is currently preparing a new
schedule for pesticide respirators and is broadening the above schedules to
cover approval of other new respiratory protective devices.

Each respirator listed in this publication is described by type, manufac-
turer's model or catalog number, approval number, and date of approval or
extension of approval. The approval numbers of those devices approved since
1959 include a letter after the schedule number, such as 13E. This identifies
the schedule under which the respirator was approved. Current schedules are
13E, 14F, 19B, 21B, and 23B. The schedules under which respirators were
approved prior to 1959 are identified in the text of each listing.

\(^1\)Supervisory research chemist, Approval and Testing, Safety Research Center,
Pittsburgh, Pa.

\(^2\)Research chemist, Approval and Testing, Safety Research Center, Pittsburgh,
Pa.
Approvals are listed by schedule in chronological order and are numbered consecutively. An appendix, with names and addresses of manufacturers of devices listed in this publication, is also included.

Some inactive respiratory protective devices are also noted in this publication. A list of other inactive approvals appears in Bureau of Mines Information Circular 8281, which this publication replaces.

To enable the public to remain informed about respirator approvals issued subsequent to the appearance of this publication, the Bureau will furnish lists of newly approved devices each month to the publishers of Coal Age Magazine and to other publications at their request. A serial list of new approvals will also be available, upon request, from the Bureau of Mines, Safety Research Center, Attention: Approval and Testing.

**SELF-CONTAINED BREATHING APPARATUS**

The following apparatus are approved for respiratory protection during entry into and escape from oxygen-deficient atmospheres, gases, and vapors.


3c. Scott Air-Pak model No. 6000A2MS (1/2-hour compressed-air demand-type self-contained breathing apparatus). Extension of approval BM-1308, issued to Scott Air-Pak, Ltd., October 14, 1963, under schedule 13C (inactive).

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3d. Scott Air-Pak model No. 6000A2MSP (1/2-hour compressed-air pressure-demand-type self-contained breathing apparatus). Extension of approval BM-1308, issued to Scott Air-Pak, Ltd., October 14, 1963, under schedule 13C (inactive).

3e. Scott Air-Pak II model No. 900000 (1/2-hour compressed-air demand-type self-contained breathing apparatus). Extension of approval BM-1308, issued to Scott Air-Pak, Ltd., September 22, 1964, under schedule 13C (inactive).


3g. Scott Air-Pak II model 9000014 (1/2-hour compressed-air pressure-demand-type self-contained breathing apparatus). Extension of approval BM-13D-08, issued to Scott Air-Pak, Ltd., December 28, 1965 (inactive).


GAS MASKS

The following gas masks are approved for entry into and escape from gases and vapors (not exceeding the concentrations stated on the approval label). Do not use in oxygen-deficient atmospheres. A summary list of approved gas masks appears in table 1.
<table>
<thead>
<tr>
<th>Gas masks</th>
<th>Approval number</th>
<th>Acid gases</th>
<th>Chlorine</th>
<th>Hydrocyanic acid</th>
<th>Hydrogen sulfide</th>
<th>Organic vapors</th>
<th>Petroleum vapors</th>
<th>Ammonia</th>
<th>Phosphine</th>
<th>Particulate matter</th>
<th>High-efficiency filter</th>
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1"A" after approval number indicates canister is equipped with window indicator for carbon monoxide.
Type A: Acid-Gas Masks

1. Acme 678-1 and 678-1-P chlorine-gas masks (with 184-CL canister). Approval BM-1421, issued to Acme Protection Equipment Co., Inc., April 21, 1939, under schedule 14D.

2. Davis stock Nos. 4107 and 4107P hydrocyanic acid-gas masks (with C-7 canister). Approval BM-1424, issued to Davis Emergency Equipment Co., December 11, 1939, under schedule 14D (inactive).


4. Willson WIG, WIGW, and TIGW hydrocyanic acid-gas masks (with G7 canister). Approval BM-1428, issued to Willson Products, Inc., August 30, 1940, under schedule 14D.


Type AE: Acid-Gas and Particulate-Matter Masks


Type B: Organic-Vapor Masks


3. Willson WIG, WIGW, and TIGW organic-vapor masks (with G1 canister). Approval BM-1423, issued to Willson Products, Inc., October 6, 1939, under schedule 14D.
4. Willson WLG, WLGW, and TLGW organic-vapor masks (with LG1 canister). Approval BM-1437, issued to Willson Products, Inc., August 5, 1944, under schedule 14E.


Type BE: Organic-Vapor and Particulate-Matter Masks

1. Willson WLG, WLGW, and TLGW organic-vapor, toxic dust, fog, fume, and mist masks (with LG1G canister). Approval BM-1446, issued to Willson Products, Inc., April 7, 1950, under schedule 14E.


Type AB: Acid-Gas and Organic-Vapor Masks


Type ABE: Acid-Gas, Organic-Vapor, and Particulate-Matter Masks


Type C: Ammonia-Gas Masks


2. Willson WLG, WLGW, and TLGW ammonia-gas masks (with LG4 canister). Approval BM-1438, issued to Willson Products, Inc., September 22, 1944, under schedule 14E.


Type CE: Ammonia-Gas and Particulate-Matter Masks


Type D: Carbon Monoxide Self-Rescue Respirators


Type N: Acid-Gas, Ammonia-Gas, Carbon Monoxide, Organic-Vapor, and Particulate-Matter Masks (With Limited-Efficiency Filter)

L. Acme 694-1 and 698-1 Type N gas masks (with 084-N-L canister). Approval BM-1435, issued to Acme Protection Equipment Co., Inc., September 30, 1942, under schedule 14E.

2. Willson WUG, WUGW, and TUGW Type N gas masks (with N1 canister). Approval BM-1443, issued to Willson Products, Inc., May 25, 1948, under schedule 14E.

3. Willson WUG, WUGW, and TUGW Type N gas masks (with N1W canister). Approval BM-1443A, issued to Willson Products, Inc., June 9, 1958, under schedule 14E.


Type N: Acid-Gas, Ammonia-Gas, Carbon Monoxide, Organic-Vapor, and Particulate-Matter Masks (With High-Efficiency Filter)

1. Acme 695-1 and 699-1 Type N gas masks (with 084-FD-F canister). Approval BM-1436, issued to Acme Protection Equipment Co., Inc., October 27, 1943, under schedule 14E.

2. Willson WUG, WUGW, and TUGW Type N gas masks (with N2 canister). Approval BM-1445, issued to Willson Products, Inc., June 29, 1949, under schedule 14E.


5. Willson WUG, WUGW, and TUGW Type N gas masks (with N2W canister). Approval BM-1445A, issued to Willson Products, Inc., October 16, 1958, under schedule 14E.


**Type BF: Organic-Vapor and Special-Gas Masks**


**Type BFE: Organic-Vapor, Special-Gas, and Particulate-Matter Masks**


**Type ABFE: Acid-Gas, Organic-Vapor, Special-Gas, and Particulate-Matter Masks**


**SUPPLIED-AIR RESPIRATORS**

**Type A: Hose Masks With Blower**

The following type A supplied-air respirators (hose mask with blower) are approved for respiratory protection in any atmosphere provided that enough respirable air is supplied to the wearer by means of the blower.


Type B: Hose Masks Without Blower

The following type B supplied-air respirators (hose mask without blower) are approved for respiratory protection in atmospheres that are not immediately dangerous to life or health or from which the wearer can escape without the aid of the respirator.


2. Bullard No. 36HM hose mask without blower. Approval BM-1916, issued to E. D. Bullard Co., October 14, 1939, under schedule 19A.

Type C: Air-Line Respirators

The following type C supplied-air respirators (air-line respirators) are approved for respiratory protection in atmospheres that are not immediately dangerous to life or health or from which the wearer can escape without the aid of the respirator.

Continuous-Flow-Class Air-Line Respirators That Supply Air to Interior of Facepiece Continuously at a Set Rate


Demand-Class Air-Line Respirators That Supply Air to Interior of Facepiece Only When Wearer Inhales and at a Rate Governed by His Breathing


Pressure-Demand-Class Air-Line Respirators That Provide a Positive Pressure Inside the Facepiece and Then Supply Air Only When Wearer Inhalles and at a Rate Governed by His Breathing

1. Scott model 6380DP air-line respirator. Extension of approval BM-1924, issued to Scott Aviation Corp., April 22, 1964, under the amendments to schedule 19B.


3. Firewel air-line respirator. Approval BM-19B-45, issued to The Firewel Co., Inc., October 9, 1964, under the amendments to schedule 19B.


Type CE: Abrasive-Blasting Helmets, Hoods, or Masks

The following type CE supplied-air respirators (abrasive-blasting) are approved for respiratory protection during abrasive blasting in atmospheres that are not immediately dangerous to life or health or from which the wearer can escape without the aid of the respirator.

1. Pangborn type DD-4 helmet. Approval BM-1908, issued to Pangborn Corp., July 15, 1938, under schedule 19A.


3. Willson Nos. 31 and 33 helmets. Approval BM-1914, issued to Willson Products, Inc., March 10, 1939, under schedule 19A.


5. METCO air-line respirator. Extension of approval BM-1920, issued to Metallizing Engineering Co., Inc., December 8, 1948, under schedule 19A.


**DUST, FUME, AND MIST (PARTICULATE-MATTER) RESPIRATORS**

For the purpose of these approvals, the following definitions are used.

**Pneumoconiosis-Producing Dust.**--Particulate matter, formed when solid materials are disintegrated by crushing, grinding, and abrading, which produces nodulation or fibrosis in the lungs or other discomfort or minor irritation. TLV (threshold limit value) of material is not less than 2.4 mppcf.

**Toxic Dust.**--Chemical irritants or systemic poisons formed as above, which irritate, inflame, or produce other pathologic reactions in the body. TLV of material is not less than 0.1 mg/M³.

**Dusts.**--Including both pneumoconiosis-producing and toxic dusts.

**Pneumoconiosis-Producing Mist.**--Liquid particulate matter, formed when liquid is disintegrated, which produces nodulation or fibrosis in the lung or other discomfort or minor irritation. TLV of material is not less than 2.4 mppcf.

**Toxic Mist.**--Liquid particulate matter, formed as above, which irritates, inflames, or produces other pathologic reactions in the body. TLV of material is not less than 0.1 mg/M³.

**Toxic Fume.**--Solid particulate matter, formed when vapors are condensed from metals and other substances. TLV of material is not less than 0.1 mg/M³.

**Highly Toxic Dust, Fume, and Mist.**--Formed as above. TLV of material is less than 0.1 mg/M³.

**Radionuclide.**--Radioactive particulate matter.

A summary list of approved dust, fume, and mist respirators appears in table 2.
<table>
<thead>
<tr>
<th>Respirator</th>
<th>Approval number</th>
<th>Approved for respiratory protection against:</th>
</tr>
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<tr>
<td></td>
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<tr>
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<td>Cover 24</td>
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<td>X</td>
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<td>Cover 40</td>
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</tbody>
</table>
Respirators for Pneumoconiosis-Producing Dusts

The following respirators are approved for protection against the inhalation of pneumoconiosis-producing dusts and nuisance dusts, having a TLV not less than 2.4 mppcf, such as silica, asbestos, coal, aluminum, cellulose, cement, charcoal, coke, flour, gypsum, iron ore, limestone, and wood.

Other approved protection afforded by the following respirators appears in parentheses after the individual listing; for example, (pneumoconiosis-producing and toxic mists) indicates the respirator is also approved for protection against the inhalation of those materials.

All devices listed under "Dust Respirators" and "Dust and Fume Respirators" are also approved for protection against the inhalation of dusts having a TLV not less than 2.4 mppcf.

1. Cover No. 24 respirator. Approval BM-2111, issued to H. S. Cover, September 15, 1936, under schedule 21.


3. Cover No. 40 respirator. Approval BM-2129, issued to H. S. Cover, July 5, 1939, under schedule 21.


Toxic-Dust Respirators

The following respirators are approved for protection against the inhalation of toxic dusts having a TLV not less than 0.1 mg/M³, such as arsenic, cadmium, chromium, lead, manganese, selenium, vanadium, and their compounds.

All devices listed under "Dust Respirators" and "Dust and Fume Respirators" are also approved for protection against the inhalation of dusts having a TLV not less than 0.1 mg/M³.


**Dust Respirators**

The following respirators are approved for protection against the inhalation of dusts having a TLV not less than 2.4 mppcf or 0.1 mg/M³.

Other approved protection afforded by the following respirators appears in parentheses after the individual listing; for example, (pneumoconiosis-producing and toxic mists) indicates the respirator is also approved for protection against the inhalation of those materials.

All devices listed under "Respirators for Pneumoconiosis-Producing Dust" and "Dust and Fume Respirators" are also approved for protection against the inhalation of dusts having a TLV not less than 2.4 mppcf.

All devices listed under "Toxic Dust Respirators" and "Dust and Fume Respirators" are also approved for protection against the inhalation of dusts having a TLV not less than 0.1 mg/M³.

1. Cover No. 46 respirator. Approval BM-2124, issued to H. S. Cover, October 3, 1938, under schedule 21.


**Dust and Fume Respirators**

The following respirators are approved for protection against the inhalation of fumes of metals having a TLV not less than 0.1 mg/M³ and dusts having a TLV not less than 0.1 mg/M³ or 2.4 mppcf.

Other approved protection afforded by the following respirators appears in parentheses after the individual listing; for example, (pneumoconiosis-producing and toxic mists) indicates the respirator is also approved for protection against the inhalation of those materials.


---


**Fume Respirators**

The following respirators are approved for protection against inhalation of fumes of metals having a TLV not less than 0.1 mg/M³.


**Mist Respirators**

No respirators have been approved for protection against mists only, but several have been approved for mists in combination with other materials. Refer to individual listings or tables 1, 2, and 3 for lists of respirators approved for protection against inhalation of mists.

**Radionuclide and Highly Toxic Dust, Fume, and Mist Respirators**

The following respirators are approved for protection against the inhalation of radionuclides and highly toxic dusts, fumes, and mists having a TLV less than 0.1 mg/M³ or 2.4 mppcf, where the contaminant concentration is known not to exceed the concentration limit for the radionuclide or the TLV by the indicated amount.

Other approved protection afforded by the following respirators appears in parentheses after the individual listing; for example, (pneumoconiosis-producing and toxic dusts and mists) indicates the respirator is also approved for protection against the inhalation of those materials.

Approved For Respiratory Protection Where Contaminant Concentration Is Known Not to Exceed 10 Times the Concentration Limit of the Radionuclide or 10 Times the TLV


Approved For Respiratory Protection Where Contaminant Concentration Is Known Not to Exceed 100 Times the Concentration Limit of the Radionuclide or 100 Times the TLV


CHEMICAL-CARTRIDGE RESPIRATORS

Type B: Organic-Vapor Respirators

The following respirators are approved for protection against the inhalation of atmospheres that are not immediately dangerous to life or health and that contain not more than 0.1 volume-percent of organic vapors.


5. DeVilbiss MSE-502 chemical-cartridge respirator (with MSE-506 cartridges). Extension of approval BM-2304, issued to The DeVilbiss Co., October 19, 1950, under schedule 23A. (Respirator is inactive but DeVilbiss MSE-506 cartridges are available for use with DeVilbiss 47736-010 respirator.)


8. Willson Nos. 741C and 841C chemical-cartridge respirators (with No. 41 cartridges). Approval BM-2308, issued to Willson Products, Inc., September 3, 1954, under schedule 23A.\(^5\)


10. Welsh No. 7501 chemical-cartridge respirator (with 7500-1 cartridges). Approval BM-23B-17, issued to Welsh Manufacturing Co., September 9, 1963.\(^5\)

11. Safeline 5211 chemical-cartridge respirator (with 5961 cartridges). Extension of approval BM-2304, issued to Safeline Products, January 24, 1964, under schedule 23A.


\(^5\)A type BE: Organic-Vapor and Particulate-Matter Respirator is covered by the same approval number.


Type BE: Organic-Vapor and Particulate-Matter Respirators

The following respirators are approved for protection against the inhalation of atmospheres that are not immediately dangerous to life or health and that contain (1) particulate matter of the type stated in parentheses after each listing, or (2) not more than 0.1 volume-percent of organic vapors, or (3) both. Particulate-Matter references are the same as those previously defined under "Dust, Fume, and Mist Respirators."

A summary list of approved organic-vapor and particulate-matter respirators appears in table 3.


4. Willson Nos. 741CD and 841CD chemical-cartridge respirators (with No. 41 cartridges and R415 filters). Approval BM-2308, issued to Willson Products, Inc., November 24, 1952, under schedule 23 (pneumoconiosis-producing and toxic dusts).\textsuperscript{6}

5. M-S-A\textsuperscript{6} cat. No. 10-85556 chemical-cartridge respirator (with GMA-10-44135 cartridges and 10-73654 filters). Extension of approval BM-2301, issued to Mine Safety Appliances Co., June 24, 1953, under schedule 23 (toxic dusts).\textsuperscript{6}

\textsuperscript{6}A type B: Organic-Vapor Respirator is covered by the same approval number.
<table>
<thead>
<tr>
<th>Respirator</th>
<th>Approval number</th>
<th>Approved for protection against inhalation of organic vapors and--</th>
</tr>
</thead>
<tbody>
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<td>Pneumoconiosis-producing dusts</td>
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<td>A. O. R9561.</td>
<td>23B-23</td>
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<td>Safeline 5714.</td>
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<td>Glendale GR-2021-10.</td>
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<td>Bausch &amp; Lomb 5R2110.</td>
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<td>A. O. R8155.</td>
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<td>Glendale GR-2021-20.</td>
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<td>Bausch &amp; Lomb 5R2120.</td>
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<td>Safeline 5560.</td>
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<td>A. O. R8191P.</td>
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<td>Safeline 5521.</td>
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<td>A. O. R8175P.</td>
<td>23B-34</td>
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</table>


A type B: Organic-Vapor Respirator is covered by the same approval number.

17. Devilbiss MSP-502 chemical-cartridge respirator (with No. 43652-00 filter cartridges). Extension of approval BM-23B-15, issued to The Devilbiss Co., January 4, 1961 (pneumoconiosis-producing and toxic dusts and mists, and paint, lacquer, and enamel mists). Respirator is inactive, but cartridges and filters are available for use with Devilbiss 47736-010 respirator.


27. Safeline 5719 chemical-cartridge respirator (with 5961 cartridge and 5919 filter). Extension of approval BM-23B-20, issued to Safeline Products, December 10, 1965 (pneumoconiosis-producing and toxic dusts and mists and paint, lacquer, and enamel mists).


31. Glendale GR-2021-10 chemical-cartridge respirator (with C-21 cartridges and F-10 filters). Extension of approval BM-23B-25, issued to Glendale Optical Co., Inc., January 20, 1966 (pneumoconiosis-producing and toxic dusts and mists).\(^8\)


\(^8\)A type B: Organic-Vapor Respirator is covered by the same approval number.
37. Safeline 5560 chemical-cartridge respirator (with 5451 cartridge and 5960 filter). Extension of approval BM-23B-32, issued to Safeline Products, April 24, 1968 (pneumoconiosis-producing and toxic dusts and mists and paint, lacquer, and enamel mists).


39. Safeline 5521 chemical-cartridge respirator (with 5921 filter cartridge). Extension of approval BM-23B-33, issued to Safeline Products, April 24, 1968 (pneumoconiosis-producing and toxic dusts and mists and paint, lacquer, and enamel mists).

BIBLIOGRAPHY


APPENDIX.--NAMES AND ADDRESSES OF COMPANIES TO WHICH APPROVALS ON CURRENTLY ACTIVE RESPIRATORY PROTECTIVE DEVICES HAVE BEEN GRANTED

Acme Products, Scott Aviation, Division of "Automatic" Sprinkler Corp. of America, 1201 Kalamazoo St., South Haven, Mich. 49090
American Optical Corp., Southbridge, Mass. 01550
Aro Corp. (formerly The Firewel Co.), 400 Enterprise St., Bryan, Ohio 43506
Bausch & Lomb, Inc., P.O. Box 478, Rochester, N.Y. 14602
Binks Manufacturing Co., 3114 Carroll Ave., Chicago, Ill. 60612
E. D. Bullard Co., 2680 Bridgeway, Sausalito, Calif. 94965
Cesco Safety Products, 2727 West Roscoe St., Chicago, Ill. 60018
H. S. Cover, Station A, South Bend, Ind. 46614
Davis Emergency Equipment Division of "Automatic" Sprinkler Corp. of America, 45 Halleck St., Newark, N.J. 07104
The DeVilbiss Co., Toledo, Ohio 43601
Glendale Optical Co., 130 Crossways Park Drive, Woodbury, N.Y. 11797
Globe Safety Products, Inc., 125 Sunrise Place, Dayton, Ohio 45407
Metallizing Engineering Co., Inc., 1101 Prospect Ave., Westbury, N.Y. 11590
Mine Safety Appliances Co., 201 North Braddock Ave., Pittsburgh, Pa. 15208
Mine Safety Appliances Co., Ltd., Queenslie Industrial Estates, Glasgow E. 3, Scotland
Minnesota Mining and Manufacturing Co., 2501 Hudson Rd., St. Paul, Minn. 55101
Norris Industries (formerly The Fyr-Fyter Co.) Fire and Safety Equipment Div., P.O. Box 2750, Newark, N.J. 07114
Pangborn Corp., Hagerstown, Md. 21740
Protector Pty., Ltd., P.O. Box 76, Sydney Mail Exchange, N.S.W., Australia
Pulmosan Safety Equipment Corp., 30-48 Linden Pl., Flushing, N.Y. 11354
Rite Hardware Manufacturing Co., 4429 San Fernando Rd., Glendale, Calif. 91209
Safeline Products, P.O. Box 550, Putnam, Conn. 06260
Scott Aviation, Division of "Automatic" Sprinkler Corp. of America, Lancaster, N.Y. 14086
U.S. Divers Co., 3323 West Warner Ave., Santa Ana, Calif. 92700
W. W. Sly Manufacturing Co., 4735 Train Ave., Cleveland, Ohio 44102
Welsh Manufacturing Co., 9 Magnolia St., Providence, R.I. 02909
Willson Products Div., ESB Incorporated, P.O. Box 622, Reading, Pa. 19603
NEW APPROVALS

The following respirators have been approved by the United States Department of the Interior, Bureau of Mines, in addition to those published in Information Circular 8436 (of December 31, 1968).

Self-Contained Breathing Apparatus


M-S-A® part numbers 95066 and 96363 (demand) and 95069 and 96338 (pressure-demand) 1/2-hour compressed-air self-contained breathing apparatus. Approval BM-13E-10, issued to Mine Safety Appliances Co., January 17, 1969.

Scott model numbers 900000 and 900014 (demand/pressure-demand) 1/2-hour compressed-air self-contained breathing apparatus. Approval BM-13E-08, issued to Scott Aviation, February 11, 1969.


Combination Self-Contained and Supplied-Air Respirator

Gas Masks


Scott/Acme #678-1W and #678-1-PW chlorine-gas masks (with 184-C1-W canister including end-of-service-life indicator window). Approval BM-14F-77, issued to Scott Aviation, November 19, 1969.


Supplied-Air Respirators

Rite Hardware system numbers 810, 850, and 870 supplied-air respirators (types C and CE). Approval BM-19B-56, issued to Rite Hardware Manufacturing Co., August 26, 1969.


Dust and Mist Respirators

The following respirators have been upgraded to meet the requirements of schedule 21B for respiratory protection against dusts and mists having a Threshold Limit Value not less than 0.1 milligram per cubic meter or 2.4 million particles per cubic foot.


Cesco 90-F respirator (with 90-1 or 90-1A filter). Approval BM-21B-77, issued to Cesco Safety Products, June 11, 1969.


The following respirator has been upgraded to meet the requirements of schedule 21B for respiratory protection against dusts have a Threshold Limit Value not less than 0.1 milligram per cubic meter or 2.4 million particles per cubic foot and mists having a Threshold Limit Value not less than 0.1 milligram per cubic meter.


Dust, Fume, and Mist Respirator

The following respirator is approved for respiratory protection against dusts, fumes, and mists having a Threshold Limit Value not less than 0.1 milligram per cubic meter or 2.4 million particles per cubic foot.

**Dust, Mist, and Organic-Vapor Respirators**

The following respirators have been upgraded to meet the requirements of schedule 23B for respiratory protection against dusts and mists having a Threshold Limit Value not less than 0.1 milligram per cubic meter or 2.4 million particles per cubic foot and up to 1,000 parts per million organic vapor.


**Names and Addresses of Respirator Manufacturers**

Acme/Scott Aviation, 1201 Kalamazoo St., South Haven, Mich. 49090
American Optical Corp., Southbridge, Mass. 01551
E. D. Bullard Co., 2680 Bridgeway, Sausalito, Calif. 94965
Cesco Safety Products, Inc., 2727 West Roscoe St., Chicago, Ill. 60618
Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh, Pa. 15208
Pulmosan Safety Equip. Corp., 30-48 Linden Pl., Flushing, N.Y. 11354
Rite Hardware Mfg. Co., 4429 San Fernando Rd., Glendale, Calif. 91204
Safeline Products, P.O. Box 550, Putnam, Conn. 06260
Scott Aviation, Lancaster, N.Y. 14086
Welsh Mfg. Co., 9 Magnolia St., Providence, R.I. 02909
Willson Products Div., ESB Inc., P.O. Box 622, Reading, Pa. 19603