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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

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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 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

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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 schedule 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, manufacturer'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.

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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,[3] which this publication replaces.

To enable the public to remain informed about respirator approvals 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.

1. M-S-A® cat. No. 01-70001 McCaa (2-hour compressed-oxygen closed-circuit self-contained breathing apparatus). Approval BM-1303, issued to Mine Safety Appliances Co., August 31, 1925, under schedule 13.

2. M-S-A® cat. No. 01-14004 (1-hour compressed-oxygen closed-circuit self-contained breathing apparatus). Approval BM-1306, issued to Mine Safety Appliances Co., July 28, 1937, under schedule 13B.

3. Scott Air-Pak model No. 6000A2MS (1/2-hour compressed-air demand-type self-contained breathing apparatus). Approval BM-1308, issued to Scott Aviation Corp., October 3, 1946, under schedule 13C. Approval BM-13D-08, issued to Scott Aviation, October 20, 1966.

3a. 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 Aviation Corp., July 24, 1962, under schedule 13C. Extension of approval BM-13D-08, issued to Scott Aviation, October 20, 1966.

3b. Scott Air-Pak II model No. 900000 (1/2-hour compressed-air demand-type self-contained breathing apparatus). Extension of approval BM-13C8, issued to Scott Aviation Corp., September 22, 1964, under schedule 13C. Extension of approval BM-13D-08, issued to Scott Aviation, October 20, 1966.

3c. Scott Air-Pak model No. 6000A2MS (1/2-hour compressed-air demand-type self-contained breathing apparatus). Extension of approval BM-13C8, issued to Scott Air-Pak, Ltd., October 14, 1963, under schedule 13C (inactive).

[3] Schutz, R. H., B. I. Ferber, and E. J. Kloos. Respiratory Protective Devices Approved by the Bureau of Mines as of October 1, 1965. BuMines Inf. Circ. 8281, 1966, 22 pp.

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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).

3f. Scott Air-Pak II model No. 900014 (1/2-hour compressed-air pressure-demand-type self-contained breathing apparatus). Extension of approval BM-13D-08, issued to Scott Aviation Corp., December 28, 1965.

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).

4. M-S-A® cat. No. 01-93160 (1/2-hour compressed-oxygen demand-type self-contained breathing apparatus). Approval BM-1309, issued to Mine Safety Appliances Co., October 3, 1946, under schedule 13 C.

4a. M-S-A® cat. No. 01-93180 (1/2-hour compressed-oxygen pressure-demand-type self-contained breathing apparatus). Extension of approval BM-1309, issued to Mine Safety Appliances Co., July 24, 1962, under schedule 13C.

5. M-S-A® cat. Nos. 01-93200 and 01-95766 and model No. 401 (1/2-hour compressed-air demand-type self-contained breathing apparatus). Approval BM-1310, issued to Mine Safety Appliances Co., November 26, 1946, under schedule 13C. Approval BM-13D-10, issued to Mine Safety Appliances Co., October 20, 1966 and December 20, 1966.

5a. M-S-A® cat. Nos. 01-93181 and 01-95767 and model No. 401 (1/2-hour compressed-air pressure-demand-type self-contained breathing apparatus). Extension of approval BM-1310, issued to Mine Safety Appliances Co., July 24, 1962, under schedule 13C. Extension of approval BM-13D-10, issued to Mine Safety Appliances Co., October 20, 1966 and December 20, 1966.

6. M-S-A® cat. No. 01-48439 McCaa with full facepiece (2-hour compressed-oxygen closed-circuit self-contained breathing apparatus). Approval BM-13D36, issued to Mine Safety Appliances Co., November 20, 1956, under schedule 13D.

7. Globe Guardsman part Nos. 1795-2GA, 2259-2GA, 2269-2GA, 2270-2GA, 2271-2GA, 2275-2GA, 2276-2GA, and 2295-2GA (1/2-hour compressed-air demand-type self-contained breathing apparatus). Approval BM-13D-11, issued to Globe Industries, Inc., June 30, 1959.

8. Pyr-Pyter Guardsman part Nos. AM-220, AM-220N, AM-220N-W, AM-220-2901-1, AM-1065, and AM-1065-W (1/2-hour compressed-air demand-type self-contained breathing apparatus). Extension of approval BM-13D-11, issued to the Pyr-Pyter Co., August 6, 1963.

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9. U.S. Divers SurvivAir model No. 9030 (1/2-hour compressed-air demand-type self-contained breathing apparatus). Approval BM-13D-12, issued to U.S. Divers Co., September 11, 1961.

9a. U.S. Divers SurvivAir model No. 9030-20 (1/2-hour compressed-air pressure-demand-type self-contained breathing apparatus). Extension of approval BM-13D-12, issued to U.S. Divers Co., June 3, 1963.

10. M-S-A® Chemox cat. No. 01-87500 (with 01-45151 or 01-92900 canister) (1-hour oxygen-generating self-contained breathing apparatus). Extension of approval BM-1307, issued to Mine Safety Appliances Co., January 25, 1962, under schedule 13C.

11. M-S-A® Chemox cat. No. 01-84600 (with 01-84860 canister) (1/2-hour oxygen-generating self-contained breathing apparatus). Approval BM-13D-13 issued to Mine Safety Appliances Co., May 2, 1962.

12. Firesol models LP-1-A and LPA (2-hour liquid-air pressure-demand-type self-contained breathing apparatus). Approval BM-13D-14, issued to The Firesol Co., Inc., February 18, 1965. Extension of approval BM-13D-14, issued to The Firesol Co., Inc., March 17, 1966.

13. Firesol models LP-1-O and LPO (2-hour liquid-oxygen pressure-demand-type self-contained breathing apparatus). Approval BM-13D-15, issued to The Firesol Co., Inc., February 23, 1965. Extension of approval BM-13D-15, issued to The Firesol Co., Inc., March 17, 1966.

14. Scott/Dreager modified BG-174 (with part No. Ch. 32.5801 alkali cartridge) (2-hour compressed-oxygen closed-circuit self-contained breathing apparatus). Approval BM-13D-16, issued to Scott Aviation Corp., January [illegible] 1966.

15. M-S-A® part numbers 96500, 96507, and 96564 (2-hour liquid-oxygen demand-type self-contained breathing apparatus). Approval BM-13D-17, issued to Mines Safety Appliances Co., May 10, 1967.

16. Willson/Siebe Gorman "Minox" (1-hour compressed-oxygen closed-circuit self-contained breathing apparatus). Approval BM-13S-18, issued to Willson Products Div., July 23, 1968.

17. Willson/Siebe Gorman "Proto Tam" (2-hour compressed-oxygen closed-circuit self-contained breathing apparatus). Approval BM-13S-19, issued to Willson Products Div., July 23, 1968.

GAS MASKS

The following gas masks are approved for entry into and escape from [illegible] 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.

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TABLE 1. - Gas masks approved as of December 31, 1968

Gas mask	Approval number	Approved for respiratory protection against--										
		Acid gases	Chlorine	Hydrocyanic acid	Hydrogen sulfide	Inorganic vapors	Petroleum vapors	Organic vapors	Phosphine	Particulate matter: Dust, fume, mist, radioactive materials, and biological aerosols	Particulate matter: Smoke, dust, mist, radioactive materials, and biological aerosols	Carbon monoxide
Avon 679-1 and 679-1-P	1418	X	-	-	-	X	-	-	-	-	-	-
Avon 678-1 and 678-1-P	1421	-	-	-	-	-	-	-	-	-	-	-
Willson WIC, WICH, and TICH (C1)	1423	-	-	X	-	-	-	-	-	-	-	-
Willson WIC, WICH, and TICH (C7)	1428	-	-	-	-	-	-	-	-	-	-	-
Avon 694-1 and 698-1	1435	X	X	X	X	X	X	X	X	X	X	X
Avon 694-IN and 698-IN	[2]1435A	X	X	X	X	X	X	X	X	X	X	X
Avon 695-1 and 699-1	1436	X	X	X	X	X	X	X	X	X	X	X
Avon 695-IN and 699-IN	[2]1436A	X	X	X	X	X	X	X	X	X	X	X
Willson WLC, WLCH, and TLCH (LC1)	1437	-	-	-	-	X	-	-	-	X	-	-
Willson WLC, WLCH, and TLCH (LC4)	1438	-	-	-	-	X	-	-	-	X	-	-
Willson WIC, WICH, and TICH (C1)	1443	X	-	-	-	X	-	-	-	X	-	-
Willson WIC, WICH, and TICH (C1)	[2]1443A	X	-	-	-	X	-	-	-	X	-	-
Willson WIC, WICH, and TICH (L09)	1444	-	-	-	X	X	-	-	-	X	-	-
Willson WIC, WICH, and TICH (C2)	1445	X	-	-	-	X	-	-	-	X	-	-
Willson WIC, WICH, and TICH (C2)	[2]1445A	X	-	-	-	X	-	-	-	X	-	-
Willson WLC, WLCH, and TLCH (LC16)	1446	-	-	-	-	X	-	-	-	X	-	-
M-S-A[3] Self-Rescuer[3] 10-48391	1447	-	-	-	-	-	-	-	-	-	-	X
Willson WLC, WLCH, and TLCH (LC3)	1450	X	-	-	-	X	-	-	-	X	-	-
Willson WLC, WLCH, and TLCH (LC3C)	1451	X	-	-	-	X	-	-	-	X	-	-
Willson WIC, WICH, and TICH (C8)	1453	-	X	-	-	-	-	-	-	-	-	-
Willson WIC, WICH, and TICH (CA)	1454	-	-	-	-	-	-	-	-	-	-	-
Avon 677-1 and 677-1-P	14F-55	-	-	-	-	-	-	X	-	-	-	-
M-S-A 65-83867, 65-86197, and 65-86198	14F-56	-	-	-	-	X	-	-	-	X	-	-
M-S-A 65-86175, 65-84891, and 65-84883	14F-57	-	-	-	-	X	-	-	-	X	-	-
M-S-A 65-84869, 65-86199, and 65-86200	14F-58	-	-	-	-	-	-	-	-	X	-	-
M-S-A 65-86177, 65-84889, and 65-84881	14F-59	-	-	-	-	-	-	-	-	X	-	-
M-S-A 65-84871, 65-86201, and 65-86202	14F-60	-	X	-	-	-	-	-	-	X	-	-
M-S-A 65-84879, 65-84893, and 65-84885	14F-61	-	-	-	-	X	-	-	X	X	-	-
M-S-A 65-84873, 65-86203, and 65-86204	14F-62	-	-	X	-	-	-	-	-	X	-	-
M-S-A 65-86178, 65-86113, and 65-86115	14F-63	-	-	X	-	-	-	-	-	X	-	-
M-S-A 65-86176, 65-86109, and 65-86111	14F-64	X	-	-	-	X	-	-	-	X	-	-
M-S-A 65-84877, 65-86207, and 65-86208	14F-65	X	-	-	-	X	-	-	-	X	-	X
M-S-A "All-Service"	[2]14F-65A	X	-	-	-	X	-	-	-	X	-	X
M-S-A 65-86217, 65-86209, and 65-86210	14F-66	X	-	-	-	X	-	-	-	X	-	X
M-S-A 65-86218, 65-86211, and 65-86212	[2]14F-66A	X	-	-	-	X	-	-	-	X	-	X
Willson WLC, WLCH, and TLCH (LC10)	14F-68	-	-	-	-	X	-	-	-	X	-	-
Willson WLC, WLCH, and TLCH (LC10C)	14F-69	-	-	-	-	X	-	-	-	X	-	-
Avon 688-1	14F-70	-	-	-	-	X	-	-	-	X	-	-
Pulmosan 1868	14B-72	-	X	-	-	-	-	-	-	-	-	-
Pulmosan 1863	14E-73	-	-	-	-	-	-	-	-	-	-	-
Pulmosan 1868	14F-74	-	-	-	-	X	-	-	-	X	-	-
Scott/Avon 698-1 and 698-2	14F-75	X	-	-	-	X	-	-	-	-	-	-
M-S-A Self-Rescuer W-63	14F-76	-	-	-	-	-	-	-	-	-	-	X

[1] "A" after approval number indicates canister is equipped with window indicator for carbon monoxide.

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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 [illegible], 1939, under schedule 14D.

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

3. Davis stock Nos. 4115 and 4115P chlorine-gas masks (with C-6 canister). Approval BM-1427, issued to Davis Emergency Equipment Co., Inc., June 26, 1940, under schedule 14D (inactive).

4. Willson WIG, WIGW, and TIGW hydrocyanic acid-gas masks (with G[illegible] ister). Approval BM-1428, issued to Willson Products, Inc., August 30, [illegible] under schedule 14D.

5. Willson WIG, WIGW, and TIGW chlorine-gas masks (with G8 canister). Approval BM-1453, issued to Willson Products, Inc., January 20, 1953, under schedule 14E.

6. Pulmosan 1806 chlorine-gas mask (with C-18-6 canister). Approval BM-14B-72, issued to Pulmosan Safety Equipment Corp., January 29, 1968.

Type AR: Acid-Gas and Particulate-Matter Masks

1. M-S-A® cat. Nos. 05-84871, 05-86201, and 05-86202 chlorine-gas and dust, mist, and fog masks (with GMC-05-77711 canister). Approval BM-14F-61, issued to Mine Safety Appliances Co., March 29, 1961.

2. M-S-A® cat. Nos. 05-84873, 05-86203, and 05-86204 hydrocyanic acid-gas and dust, mist, and fog masks (with GMK-05-77709 canister). Approval BM-14F-62, issued to Mine Safety Appliances Co., April 7, 1961.

3. M-S-A® cat. Nos. 05-86113, 05-86115, and 05-86178 hydrocyanic acid-gas and dust, mist, and fog masks (with GMK-SS-05-84499 canister). Approval BM-14F-63, issued to Mine Safety Appliances Co., April 18, 1961.

Type B: Organic-Vapor Masks

1. Davis stock Nos. 4101 and 4101P organic-vapor masks (with C-1 canister). Approval BM-1417, issued to Davis Emergency Equipment Co., May 3, 1939, under schedule 14D (inactive).

2. Acme 679-1 and 679-1-P organic-vapor masks (with 184-OV canister). Approval BM-1418, issued to Acme Protection Equipment Co., Inc., May 13, 1939, under schedule 14D.

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.

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4. Willson WLG, WLGV, and TLGV organic-vapor masks (with LG1 canister). Approval BM-1437, issued to Willson Products, Inc., August 5, 1944, under schedule 14E.

5. Davis stock Nos. 4131 and 4131P organic-vapor masks (with C-1 canister). Extension of approval BM-1417, issued to Davis Emergency Equipment Co., Inc., September 22, 1938, under schedule 14D (inactive).

Type BE: Organic-Vapor and Particulate-Matter Masks

1. Willson WLE, WLGV, and TLGV organic-vapor, toxic dust, fog, fume, and mist masks (with LG1C canister). Approval BM-1446, issued to Willson Products, Inc., April 7, 1939, under schedule 14E.

2. M-S-A® cat. Nos. 65-85867, 65-86197, and 65-86198 organic-vapor and dust, mist, and fog masks (with GMA-65-77705 canister). Approval BM-14F-56, issued to Mine Safety Appliances Co., February 24, 1961.

3. M-S-A® cat. Nos. 65-84891, 65-84883, and 65-86175 organic-vapor and dust, mist, and fog masks (with GMA-65-65-77706 canister). Approval BM-14F-57, issued to Mine Safety Appliances Co., March 10, 1961.

4. Davis stock Nos. 4101 and 4101P organic-vapor, dust, and mist masks (with 3226 canister). Approval BM-14F-71, issued to Davis Emergency Equipment Co., Inc., November 21, 1966 (inactive).

5. Pulmosan 1801-F organic-vapor, dust, and mist mask (with C18-1F canister). Approval BM-14F-74, issued to Pulmosan Safety Equipment Corp., January 29, 1968.

Type AB: Acid-Gas and Organic-Vapor Masks

1. Davis stock Nos. 4124 and 4124P acid-gas and organic-vapor masks (with OC-4 canister). Approval BM-1411, issued to Davis Emergency Equipment Co., Inc., January 19, 1931, under schedule 14B (inactive).

2. Willson WTG, WTGV, and TTGV hydrogen sulfide-gas and petroleum-vapor masks (with 189 canister). Approval BM-1444, issued to Willson Products, Inc., April 18, 1940, under schedule 14E.

3. Willson WLS, WLGV, and TLGV acid-gas and organic-vapor masks (with 1A3 canister). Approval BM-1430, issued to Willson Products, Inc., March 22, 1951, under schedule 14E.

4. Acme Nos. 691-1 and 691-2 acid-gas and organic-vapor masks (with 694-GV/AG-L canister). Approval BM-14F-75, issued to Scott Aviation Div., May 13, 1968.

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

1. Willson WLG, WLGW, and TLGW acid-gas, organic-vapor, and toxic [illegible] fume, mist, and fog masks (with LGJC canister). Approval BM-1451, issued to Willson Products, Inc., March 22, 1951, under schedule 14E.

2. M-S-A® cat. Nos. 05-86109, 05-86111, and 05-86176, acid-gas, [illegible] vapor, and dust, mist, and fog masks (with GMC-S-05-84903 canister). Approval BM-14F-64, issued to Mine Safety Appliances Co., April 18, 1961.

Type C: Ammonia-Gas Masks

1. Acme 677-1 ammonia-gas mask (with 181-AMM canister). Approval BM-1420, issued to Acme Protection Equipment Co., Inc., March 25, 1939, under schedule 14D (inactive).

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.

3. Davis stock Nos. 4103 and 4103P ammonia-gas masks (with C-3 canister). Approval BM-1452, issued to Davis Emergency Equipment Co., Inc., March 29, 1951, under schedule 14E (inactive).

4. Willson WLG, WLGW, and TLGW ammonia-gas masks (with G4 canister). Approval BM-1454, issued to Willson Products, Inc., November 29, 1955, under schedule 14F.

5. Acme 677-1 and 677-1-P ammonia-gas masks (with 184-AMM canister). Approval BM-14F-55, issued to Acme Protection Equipment Co., May 4, 1959.

6. Pulmosan 1803 ammonia-gas mask (with C-18-3 canister). Approval BM-14E-73, issued to Pulmosan Safety Equipment Corp., January 29, 1968.

Type CE: Ammonia-Gas and Particulate-Matter Masks

1. M-S-A® cat. Nos. 05-84869, 05-86199, and 05-86200 ammonia-gas and dust, mist, and fog masks (with GMD-03-77707 canister). Approval BM-14F-[illegible] issued to Mine Safety Appliances Co., March 10, 1961.

2. M-S-A® cat. Nos. 05-84889, 05-84891, and 05-86177, ammonia, dust, mist, and fog masks (with GMD-SS-03-77708 canister). Approval BM-14F-59, issued to Mine Safety Appliances Co., March 16, 1961.

Type D: Carbon Monoxide Self-Rescue Respirators

1. M-S-A® cat. No. 10-48391 respirator for self-rescue from carbon monoxide (with 10-49806 cartridge). Approval BM-1447, issued to Mine Safety Appliances Co., April 7, 1950, under schedule 14E.

2. M-S-A® Self-Rescuer® W-65. Approval BM-14F-76, issued for self-rescue from carbon monoxide, to Mines Safety Appliances Co., October 30, [illegible]

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

1. Acme 694-1 and 698-1 Type H gas masks (with 084-H-L canister). Approval BM-1435, issued to Acme Protection Equipment Co., Inc., September 30, 1943, under schedule 14E.

2. Willson WCG, WUCM, and TUCM Type H gas masks (with H1 canister). Approval BM-1443, issued to Willson Products, Inc., May 25, 1948, under schedule 14E.

3. Willson WCG, WUCM, and TUCM Type H gas masks (with H1W canister). Approval BM-1443A, issued to Willson Products, Inc., June 9, 1958, under schedule 14E.

4. Acme 694-1W and 698-1W Type H gas masks (with 084-H-LW canister). Approval BM-1435A, issued to Acme Protection Equipment Co., March 30, 1960, under schedule 14E.

5. M-S-A® cat. Nos. 05-84877, 05-86207, and 05-86208 Type H gas masks (with 05-72020 canister). Approval BM-14F-65, issued to Mine Safety Appliances Co., May 11, 1961.

6. M-S-A® "All-Service" Type H gas mask (with 05-88971 canister). Approval BM-14F-63A, issued to Mine Safety Appliances Co., January 2, 1963.

7. Davis stock Nos. 4116 and 4116P Type H gas masks (with UC-4 canister). Approval BM-14E-67, issued to Davis Emergency Equipment Co., Inc., May 9, 1963 (inactive).

8. Davis stock Nos. 4117 and 4117P Type H gas masks (with UC-5 canister). Approval BM-14E-67A, issued to Davis Emergency Equipment Co., Inc., May 9, 1963 (inactive).

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

1. Acme 695-1 and 699-1 Type H 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 WHG, WUCM, and TUCM Type H gas masks (with H2 canister). Approval BM-1445, issued to Willson Products, Inc., June 29, 1949, under schedule 14E.

3. Davis stock Nos. 4111 and 4111P Type H gas masks (with UC-2 canister). Approval BM-1448, issued to Davis Emergency Equipment Co., Inc., August 16, 1950, under schedule 14E (inactive).

4. Acme 695-1W and 699-1W Type H gas masks (with 084-FD-FW canister). Approval BM-1436A, issued to Acme Protection Equipment Co., June 9, 1958, 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.

6. Davis stock Nos. 4112 and 4112P Type N gas masks (with DC-3 canister). Approval BM-1448A, issued to Davis Emergency Equipment Co., Inc., October [illegible], 1958, under schedule 14E (inactive).

7. M-S-A® cat. Nos. 05-86209, 05-86210, and 05-86217 Type N gas masks (with S-85-85758 canister). Approval BM-14F-66, issued to Mine Safety Appliances Co., November 13, 1961.

8. M-S-A® cat. Nos. 05-86211, 05-86212, and 05-86218 Type N gas masks (with SW-05-81524 canister). Approval BM-14F-66A, issued to Mine Safety Appliances Co., November 16, 1961.

Type PF: Organic-Vapor and Special-Gas Masks

1. Willson WLG, WLGW, and TLGW organic-vapor and phosphine-gas masks (with LG10 canister). Approval BM-14F-68, issued to Willson Products Div., September 8, 1964.

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

1. Willson WLG, WLGW, and TLGW organic-vapor, phosphine-gas, and [illegible] fume, mist, and fog masks (with LG10G canister). Approval BM-14F-69, issued to Willson Products Div., September 8, 1964.

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

1. M-S-A® cat. Nos. 05-84879, 05-84883, and 05-84893 hydrogen-sulfide-gas, organic-vapor, phosphine-gas, and dust, mist, and fog masks (with GMC-SS-1-05-77713 canister). Extension of approval BM-14F-61, issued to Mine Safety Appliances Co., September 8, 1964.

2. Acme No. 688-1 hydrogen-sulfide-gas, organic-vapor, phosphine-gas, and toxic dust, mist, fog, and smoke mask (with No. 084-PHOV-R canister). Approval BM-14F-70, issued to Acme Protection Equipment Corp., December [illegible], 1964.

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 adequate respirable air is supplied to the wearer by means of the blower.

1. Bullard Nos. 32HM and 34PHM hose masks with hand-operated blower. Approval BM-1903, issued to E. D. Bullard Co., April 14, 1933, under schedule 19.

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2. Davis types HLS and DHI hose masks with hand-operated blower. Approval BM-1904, issued to Davis Emergency Equipment Co., Inc., October 29, 1934, under schedule 19.

3. M-S-A® "Combination" and "Utility" hose masks with hand-operated blower. Approval BM-1905A, issued to Mine Safety Appliances Co., July 2, 1935, under schedule 19 and extension of approval BM-1905A, issued February 2, 1965, under the amendments to schedule 19B.

4. Davis types HLS and DHI hose masks with hand-operated blower. Approval BM-1906, issued to Davis Emergency Equipment Co., Inc., August 2, 1935, under schedule 19.

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.

1. Davis model AL-25 hose mask without blower. Approval BM-1913, issued to Davis Emergency Equipment Co., Inc., March 10, 1939, under schedule 19A (inactive).

2. Bullard No. 36BM 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

1. Cesco No. 600-series "Healthguard" hoods. Approval BM-1925, issued to Chicago Eye Shield Co., August 16, 1950, under schedule 19A.

2. Willson GA2M, GA8B, GA8M, and TA8M air-line respirators. Approval BM-19B-30, issued to Willson Products Div., May 29, 1959.

3. Acme 4615-1, 4616-1, 4654, 4800, 4810, and 4860 air-line respirators. Approval BM-19B-31, issued to Acme Protection Equipment Co., October 13, 1959. Extension of approval BM-19B-31, issued to Acme Protection Equipment Co., March 17, 1967.

4. M-S-A® "Lead-Foe" air-line respirators. Approval BM-19B-32, issued to Mine Safety Appliances Co., June 28, 1960.

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5. M-S-A® "Flexi-Flo" air-line respirators. Approval BM-19B-34, [illegible] to Mine Safety Appliances Co., August 30, 1961.

6. M-S-A® cat. No. 10-81716 welder's air-line respirator. Approval BM-19B-37, issued to Mine Safety Appliances Co., March 12, 1962.

7. M-S-A® "Flexi-Flo" abrasive mask air-line respirators. Approval BM-19B-38, issued to Mine Safety Appliances Co., May 7, 1962.

8. M-S-A® cat. No. 10-87071 welder's air-line respirator. Approval BM-19B-37A, issued to Mine Safety Appliances Co., May 23, 1962.

9. M-S-A® "Hyperflo" air-line respirators. Approval BM-19B-34A, [illegible] to Mine Safety Appliances Co., June 13, 1962.

10. M-S-A® "Hyperflo" abrasive mask air-line respirators. Approval BM-19B-38A, issued to Mine Safety Appliances Co., June 14, 1962.

11. Bullard 36 LS air-line respirator. Approval BM-19B-40, issued to E. D. Bullard Co., April 30, 1962.

12. Willson GA2, GAB, GAF, and GaFW air-line respirators. Extension of approval BM-1912, issued to Willson Products Div., July 27, 1964, under schedule 19B.

13. Pulmosan MA-99 air-line respirator. Approval BM-19B-44, issued to Pulmosan Safety Equipment Corp., January 20, 1965.

13a. Pulmosan AL-180 air-line respirator. Extension of approval BM-19B-44, issued to Pulmosan Safety Equipment Corp., March 24, 1967.

14. Rite "Whitecap" series No. 460 air-line respirator. Approval BM-19B-48, issued to Rite Hardware Manufacturing Co., April 13, 1965.

15. M-S-A® abrasive hood air-line respirator. Approval BM-19B-52, issued to Mine Safety Appliances Co., March 22, 1966.

16. M-S-A® "Leadfoe" air-line respirator. Approval BM-19B-53, issued to Mine Safety Appliances Co., March 23, 1966.

17. A. O. M3099 air-line respirator. Approval BM-19B-54, issued to American Optical Co., October 10, 1966.

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

1. Scott 6300-series air-line respirators. Approval BM-1924, issued to Scott Aviation Corp., September 28, 1949, under schedule 19A.

2. Scott 26000-series and 800000-series air-line respirators. Approval BM-19B-36, issued to Scott Aviation Corp., February 23, 1962. Extension of approval BM-19B-36, issued to Scott Aviation Corp., December 23, 1965.

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3. Scott 6300-series air-line respirators. Extension of approval BM-1924, issued to Scott Air-Pak, Ltd., October 14, 1963, under schedule 19A (inactive).

4. Scott 26000-series air-line respirators. Extension of approval BM-19B-36, issued to Scott Air-Pak, Ltd., October 14, 1963 (inactive).

5. M-S-A® part Nos. 46539, 46986, 78315, 84283, 93928, 94842, 94843, and 94888 air-line respirators. Approval BM-19B-42, issued to Mine Safety Appliances Co., March 13, 1964.

6. M-S-A® part Nos. 93224, 93225, 93226, and 93227 air-line respirators. Approval BM-19B-43, issued to Mine Safety Appliances Co., September 29, 1964.

7. Firemel air-line respirator. Approval BM-19B-46, issued to The Firemel Co., October 9, 1964.

8. Willson GDF, GDFV, TDFV, and GD2 air-line respirators. Approval BM-19B-47, issued to Willson Products Div., November 25, 1964.

9. U.S. Divers SurvivAir 9011-09 air-line respirator. Approval BM-19B-49, issued to U.S. Divers Co., November 29, 1965.

10. U.S. Divers SurvivAir 9011-01 air-line respirator. Approval BM-19B-50, issued to U.S. Divers Co., November 29, 1965.

11. Acme model 2600 (catalog Nos. 4637 and 4851) air-line respirators. Extension of approval BM-19B-36, issued to Acme Protection Equipment Co., March 23, 1966.

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

1. Scott model 63000P air-line respirator. Extension of approval BM-1924, issued to Scott Aviation Corp., April 22, 1964, under the amendments to schedule 19B.

2. Scott model 63000P air-line respirator. Extension of approval BM-1924, issued to Scott Air-Pak Ltd., April 22, 1964 (inactive).

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

4. U.S. Divers SurvivAir 9011-02 air-line respirator. Approval BM-19B-51, issued to U.S. Divers Co., November 29, 1965.

5. M-S-A® part No. 89104 air-line respirator. Approval BM-19B-33, issued to Mine Safety Appliances Co., November 27, 1958.

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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 BD-4 helmet. Approval BM-1908, issued to Pangborn Corp., July 13, 1938, under schedule 19A.

2. Sly "Fanair" helmet. Approval BM-1911, issued to W. W. Sly Manufacturing Co., July 16, 1938, under schedule 19A, and July 11, 1957, under schedule 19B.

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

4. Pangborn type BF-2 helmet. Approval BM-1915, issued to Pangborn Corp., March 23, 1939, under schedule 19A.

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

6. Willson No. 52 helmet. Approval BM-1923, issued to Willson Products, Inc., July 19, 1940, under schedule 19A.

7. M-S-A® "Blastfoe" helmets. Approval BM-1926, issued to Mine Safety Appliances Co., May 9, 1951, under schedule 19A.

8. Casco Nos. 603-BH, 603-BS, and 603-BC hoods. Approval BM-19B-35, issued to Chicago Eye Shield Co., January 9, 1962.

9. M-S-A® "Flexiflo" air-line respirators with hoods. Approval BM-19B-38, issued to Mine Safety Appliances Co., May 7, 1962.

10. M-S-A® "Hyperflo" air-line respirators with hoods. Approval BM-19B-38A, issued to Mine Safety Appliances Co., June 14, 1962.

11. Bullard No. 37-V helmet. Approval BM-19B-39, issued to E. D. Bullard Co., April 24, 1962.

12. Bullard No. 37-LD helmet. Approval BM-19B-40, issued to E. D. Bullard Co., April 30, 1962.

13. M-S-A® "Flexiflo" air-line respirator. Approval BM-19B-41, issued to Mine Safety Appliances Co., March 5, 1964.

14. M-S-A® "Hyperflo" air-line respirator. Approval BM-19B-41A, issued to Mine Safety Appliances Co., March 5, 1964.

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15. Pulmosan HA-99 hood. Approval BM-198-44, issued to Pulmosan Safety Equipment Corp., January 20, 1965.

16. M-S-A[D] part Nos. 34727, 34728, 72662, 94494, and 450168 hoods. Approval BM-198-52, issued to Mine Safety Appliances Co., March 22, 1966.

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/M^3.

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/M^3.

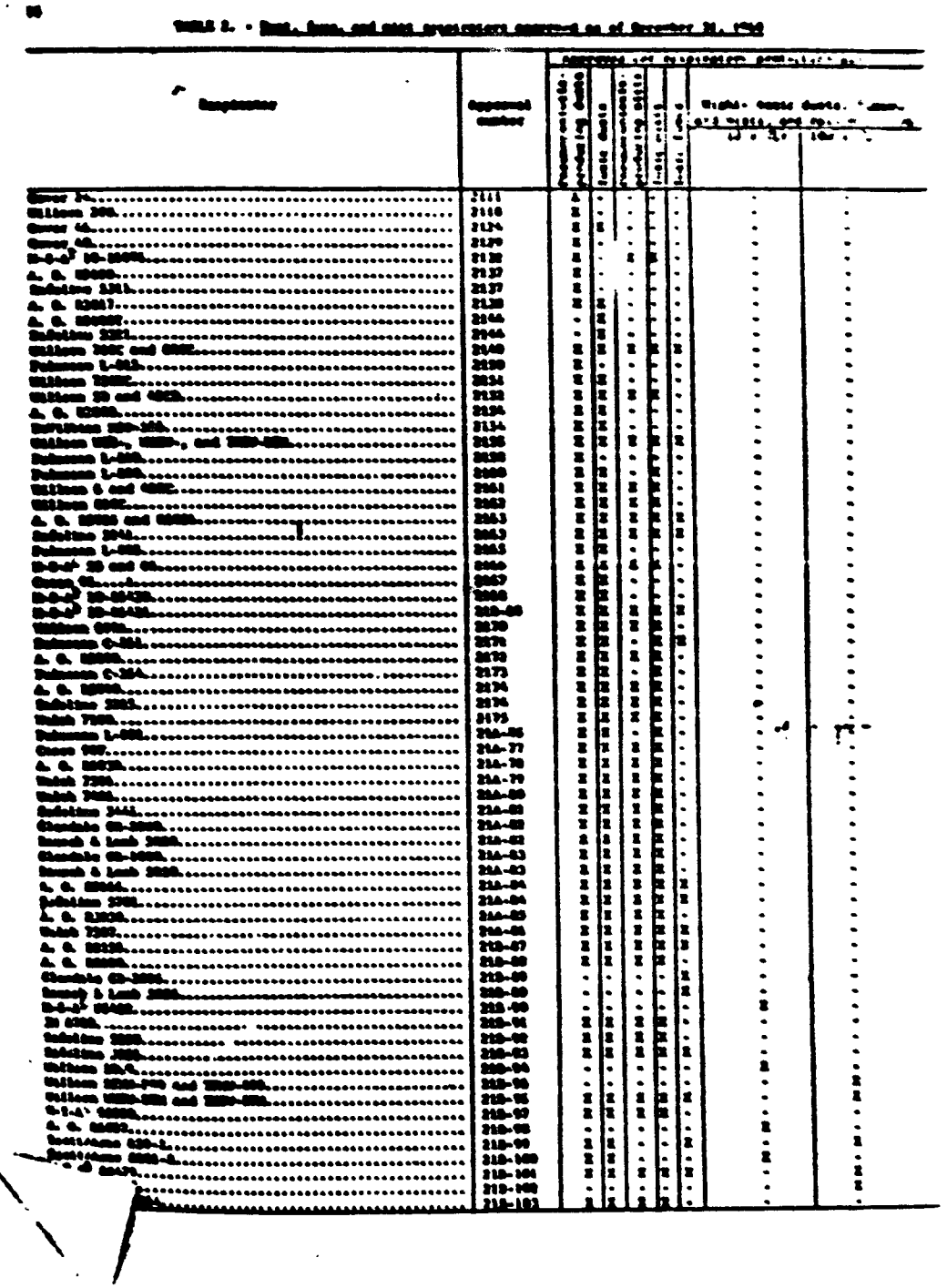
Toxic Fume.--Solid particulate matter, formed when vapors are condensed from metals and other substances. TLV of material is not less than 0.1 mg/M^3.

Highly Toxic Dust, Fume, and Mist.--Formed as above. TLV of material is less than 0.1 mg/M^3.

Radionuclide.--Radioactive particulate matter.

A summary list of approved dust, fume, and mist respirators appears in table 2.

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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.

2. Willson No. 200 respirator (with R224 filter). Approval BM-2118, issued to Willson Products, Inc., December 30, 1937, under schedule 21.

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

4. M-S-A[3] cat. No. 10-16076 respirator (with 10-17618 filter). Extension of approval BM-2132, issued to Mine Safety Appliances Co., August 23, 1939, under schedule 21 (pneumoconiosis-producing and toxic mists).

5. A. O. R9100 respirator. Approval BM-2137, issued to American Optical Co., March 6, 1940, under schedule 21.

6. Pulmosan L-810 respirator (with L-810-7 filter). Approval BM-2158, issued to Pulmosan Safety Equipment Corp., March 1, 1949, under schedule 21.

7. Pulmosan L-815 respirator (with L-815-7 filter). Approval BM-2159, issued to Pulmosan Safety Equipment Corp., April 26, 1949, under schedule 21.

8. Safeline 5311 respirator. Extension of approval BM-2137, issued to Safeline Products, January 24, 1964, 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/M^3, 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/M^3.

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1. A. O. R9100T respirator. Approval BM-2144, issued to American [illegible] Co., May 19, 1941, under schedule 21.

2. Safeline 5321 respirator. Extension of approval BM-2144, issued to Safeline Products, January 24, 1964, under schedule 21.

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 Dusts" and "Dust and Fume Respirators" are also approved for protection against 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.

2. A. O. R2017 respirator (with R17 filter). Extension of approval BM-2138, issued to American Optical Co., February 4, 1941, under schedule [illegible]

3. Willson No. 750DC respirator (with R407 filter). Approval BM-2151 issued to Willson Products, Inc., October 5, 1944, under schedule 21 (pneumoconiosis-producing and toxic mists).

4. Willson Nos. 38 and 45CD respirators (with R393 filter). Approval BM-2152, issued to Willson Products, Inc., October 19, 1944, under schedule 21 (pneumoconiosis-producing and toxic mists).

5. A. O. R2000 respirator (with R25 filter). Approval BM-2154, issued to American Optical Co., January 2, 1947, under schedule 21.

6. Pulmosan L-800 respirator (with L-800-7 filter). Extension of approval BM-2160, issued to Pulmosan Safety Equipment Corp., February 13, 1953, under schedule 21 (toxic mists).

7. Willson Nos. 6 and 460C respirators (with R415 filter). Approval BM-2161, issued to Willson Products, Inc., June 30, 1950, under schedule 21 (pneumoconiosis-producing and toxic mists).

8. Willson No. 860C respirator (with R415 filters). Approval BM-2162 issued to Willson Products, Inc., June 30, 1950, under schedule 21 (pneumoconiosis-producing and toxic mists).

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9. DeVilbiss MSD-505 respirator (with MSD-506 filter). Extension of approval BM-2154, issued to The DeVilbiss Co., November 3, 1950, under schedule 21.

10. Pulmosan L-805 respirator (with L-805-7 filter). Approval BM-2165, issued to Pulmosan Safety Equipment Corp., December 11, 1950, under schedule 21.

11. Casco No. 96 respirator (with 96-10 filter). Approval BM-2167, issued to Chicago Eye Shield Co., October 16, 1952, under schedule 21.

12. M-S-A® cat. No. 10-86430 respirator (with Type "F" filters). Approval BM-2168, issued to Mine Safety Appliances Co., October 13, 1955, under schedule 21A.

13. Willson No. 600A respirator (with R501 filter). Approval BM-2170, issued to Willson Products, Inc., January 18, 1956, under schedule 21A (pneumoconiosis-producing and toxic mists).

14. M-S-A® Ltd. "Dustfoe 655" respirator (with 655 filter). Extension of approval BM-2166, issued to Mine Safety Appliances Co., Ltd., March 28, 1956, under schedule 21 (pneumoconiosis-producing and toxic mists).

15. A. O. R2090 respirator (with R90 filter). Approval BM-2172, issued to American Optical Co., July 11, 1958, under schedule 21A (pneumoconiosis-producing and toxic mists).

16. Pulmosan C264 respirator (with C-264-7 filter). Approval BM-2173, issued to Pulmosan Safety Equipment Corp., August 26, 1958, under schedule 21A (toxic mists).

17. A. O. R5090 respirator (with R90 filters). Approval BM-2174, issued to American Optical Co., August 18, 1958, under schedule 21A (pneumoconiosis-producing and toxic mists).

18. Welsh No. 7100 respirator (with 7100-7 filter). Approval BM-2175, issued to Welsh Manufacturing Co., August 29, 1958, under schedule 21A (pneumoconiosis-producing and toxic mists).

19. Pulmosan L-801 respirator (with L-801-7 filter). Approval BM-21A-76, issued to Pulmosan Safety Equipment Corp., December 11, 1958 (toxic mists).

20. Casco No. 90-F respirator (with 90-1 filter). Extension of approval BM-21A-77, issued to Chicago Eye Shield Co., January 11, 1962 (pneumoconiosis-producing and toxic mists).

21. A. O. R6030 respirator (with R30 filter). Approval BM-21A-78, issued to American Optical Co., September 20, 1962 (pneumoconiosis-producing and toxic mists).

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22. Welsh No. 7506 respirator (with 7500-6 filters). Approval [illegible] issued to Welsh Manufacturing Co., September 9, 1963 (pneumoconiosis-[illegible] and toxic mists).

23. Welsh No. 7406 respirator (with 7500-6 filter). Approval [illegible] issued to Welsh Manufacturing Co., September 9, 1963 (pneumoconiosis-[illegible] and toxic mists).

24. Safeline 5263 respirator (with 5901 filter). Extension of [illegible] BM-2174, issued to Safeline Products, January 24, 1964, under schedule [illegible] (pneumoconiosis-producing and toxic mists).

25. Safeline 5441 respirator (with 5905 filter). Extension of [illegible] BM-21A-81, issued to Safeline Products, April 14, 1964 (pneumoconiosis-producing and toxic mists).

26. Glendale GR-2000 respirator (with F-10 filters). Approval [illegible] issued to Glendale Optical Co., Inc., April 10, 1964 (pneumoconiosis-[illegible] and toxic mists).

27. Glendale GR-1000 respirator (with F-10 filter). Approval [illegible] issued to Glendale Optical Co., Inc., April 10, 1964 (pneumoconiosis-[illegible] and toxic mists).

28. A. O. R3030 respirator (with R30 filter). Approval BM-21A-[illegible] issued to American Optical Co., November 13, 1964 (pneumoconiosis-[illegible] and toxic mists).

29. M-S-A[illegible] cat. No. 10-76869 respirator (with 666 filter). Extension of approval BM-2166, issued to Mine Safety Appliances Co., November 20, [illegible] under schedule 21A (pneumoconiosis-producing and toxic mists).

30. A. O. R8100 respirator (with R100 filter). Approval BM-21B-[illegible] issued to American Optical Co., July 9, 1965 (pneumoconiosis-producing [illegible] toxic mists).

31. Bausch & Lomb 5R20 respirator (with 5-15-10 filters). Extension of approval BM-21A-82, issued to Bausch & Lomb, Inc., December 8, 1965 (pneumoconiosis-producing and toxic mists).

32. Bausch & Lomb 5R10 respirator (with 5-15-10 filter). Extension of approval BM-21A-83, issued to Bausch & Lomb, Inc., December 8, 1965 (pneumoconiosis-producing and toxic mists).

33. 3M 8700 respirator (with 8701 filter). Approval BM-21B-91, [illegible] to Minnesota Mining and Manufacturing Co., November 28, 1966 (pneumoconiosis-producing and toxic mists).

34. Safeline 5550 respirator (with 5950 filter). Approval BM-21[illegible] issued to Safeline Products, January 17, 1967 (pneumoconiosis-producing [illegible] toxic mists).

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35. M-S-A® cat. No. 96000 respirator (with 96402 filter). Approval BM-21B-97, issued to Mine Safety Appliances Co., September 6, 1967 (pneumoconiosis-producing and toxic mists).

36. Protector R1054 respirator (with R54 filter). Approval BM-21B-103, issued to Protector Pty., Ltd.,[4] November 27, 1968 (pneumoconiosis-producing and toxic mists).

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 these materials.

1. Willson Nos. 700C and 800C respirators (with R361 filters). Extension of approval BM-2140, issued to Willson Products, Inc., August 7, 1942, under schedule 21 (pneumoconiosis-producing and toxic mists).

2. Willson [illegible], [illegible], and [illegible] respirators (with [illegible] filter). Approval BM-2155, issued to Willson Products, Inc., March 1, 1948, under schedule 21 (pneumoconiosis-producing and toxic mists).

3. Pulmosan C-261 respirator (with C-261-7 filter). Approval BM-2171, issued to Pulmosan Safety Equipment Corp., February 28, 1957, under schedule 21A (toxic mists).

4. A. O. H9166 respirator (with R166 filters). Approval BM-21A-84, issued to American Optical Co., November 13, 1964, under schedule 21A (pneumoconiosis-producing and toxic mists).

5. Walsh No. 7507 respirator (with 7500-7 filters). Approval BM-21A-86, issued to Walsh Manufacturing Co., December 11, 1964 (pneumoconiosis-producing and toxic mists).

6. A. O. H8136 respirator (with R156 filter). Approval BM-21B-87, issued to American Optical Co., February 23, 1965 (pneumoconiosis-producing and toxic mists).

7. Safeline 5701 respirator (with 5984 filters). Extension of approval BM-21A-84, issued to Safeline Products, December 10, 1965 (pneumoconiosis-producing and toxic mists).

8. M-S-A® cat. No. 10-86431 respirator (with Type "S" filters). Approval BM-21B-69, issued to Mine Safety Appliances Co., September 29, 1966 (pneumoconiosis-producing and toxic mists).

[4]U.S. distributor: U.S. Divers Co., Santa Ana, Calif.

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9. Safeline 5356 respirator (with 5956 filter). Approval BM-21B-[illegible] issued to Safeline Products, January 17, 1967 (pneumoconiosis-producing and toxic mists).

10. A. O. R5056 and R6056 respirators (with R56 filters). Approval BM-21B-63, issued to American Optical Co., February 8, 1967 (pneumoconiosis-producing and toxic mists).

11. Safeline 5241 respirator (with 5971 filters). Approval BM-21B-[illegible] issued to Safeline Products, February 8, 1967 (pneumoconiosis-producing and toxic mists).

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.

1. Glendale GR-2026 respirator (with C-26 filters). Approval BM-21B-[illegible] issued to Glendale Optical Co., February 21, 1966.

2. Bausch & Lomb 3826 respirator (with 3-13-26 filters). Extension of approval BM-21B-89, issued to Bausch & Lomb, Inc., February 21, 1966.

Mist Respirators

No respirators have been approved for protection against mists only, 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 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 these 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

1. M-S-A® cat. No. 86432 respirator (with 10-76876 filters). Approval BM-21B-90, issued to Mine Safety Appliances Co., November 8, 1966.

2. Willson style No. 1009 respirator (with RS20 filters). Approval BM-21B-94, issued to Willson Products Div., May 25, 1967.

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2. A. O. 8667 respirator (with R57 filters). Approval BM-21B-98, issued to American Optical Co., January 3, 1968.

4. Acme No. 8201-R respirator (with No. 8004-R filters). Approval BM-21B-100, issued to Scott Aviation Div., March 20, 1968 (pneumoconiosis-producing and toxic dusts).

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

1. Willson HFRM-809 and TFRM-809 respirators (with R520 filters). Approval BM-21B-95, issued to Willson Products Div., June 13, 1967.

2. Willson HRGM-DFM and TRGM-DFM respirators (with DFM filter). Approval BM-21B-96, issued to Willson Products Div., July 5, 1967 (pneumoconiosis-producing and toxic dusts and mists and toxic fumes).

3. Acme 639-1 respirator (with 8272-R filter). Approval BM-21B-99, issued to Scott Aviation Division, March 20, 1968 (pneumoconiosis-producing and toxic dusts and toxic fumes).

4. M-S-A® cat. No. 88479 respirator (with 88480 filter). Approval BM-21B-101, issued to Mine Safety Appliances Co., March 22, 1968 (pneumoconiosis-producing and toxic dusts and mists and toxic fumes).

5. M-S-A® cat. No. 84303 respirator (with 84305 filter). Approval BM-21B-102, issued to Mine Safety Appliances Co., July 15, 1968.

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.

1. M-S-A® cat. No. 10-85556 chemical-cartridge respirator (with GMA-10-44135 cartridges). Approval BM-2301, issued to Mine Safety Appliances Co., June 4, 1945, under schedule 23.

2. Willson No. 731C chemical-cartridge respirator (with No. 31 cartridges). Approval BM-2303, issued to Willson Products, Inc., July 30, 1946, under schedule 23.

3. Binks Type B chemical-cartridge respirator (with 40-13 cartridges). Extension of approval BM-2301, issued to Binks Manufacturing Co., June 18, 1948, under schedule 23.

4. A. O. R5051 and R6051 chemical-cartridge respirators (with R51 cartridges). Approval BM-2304, issued to American Optical Co., July 19, 1949, under schedule 23, and September 18, 1957, under schedule 23A.

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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.)

6. Casco No. 99 chemical-cartridge respirator (with No. 99-8 cartridges). Approval BM-2307, issued to Chicago Eye Shield Co., October 16, 1952, under schedule 23.

7. Pulmosan No. C-256 chemical-cartridge respirator (with CHA cartridge). Approval BM-2309, issued to Pulmosan Safety Equipment Corp., September 3, 1953, under schedule 23.

8. Willson Nos. 741C and 841C chemical-cartridge respirators (with No. 42 cartridges). Approval BM-2308, issued to Willson Products, Inc., September 3, 1954, under schedule 23.[6]

9. M-S-A® cat. No. 10-76853 chemical-cartridge respirator (with GMA-10-76803 cartridge). Approval BM-2310, issued to Mine Safety Appliances Co., October 14, 1955, under schedule 23A.[6]

10. Welsh No. 7501 chemical-cartridge respirator (with 7500-1 cartridges). Approval BM-23B-17, issued to Welsh Manufacturing Co., September 3, 1963.[6]

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

12. A. O. R9051 chemical-cartridge respirator (with R51 cartridges). Approval BM-23B-19, issued to American Optical Co., November 10, 1964.

13. A. O. R8151 chemical-cartridge respirator (with R151 cartridge). Approval BM-23B-24, issued to American Optical Co., January 28, 1965.

14. Glendale GR-2021 chemical-cartridge respirator (with C-21 cartridges). Approval BM-23B-25, issued to Glendale Optical Co., January 28, 1965.[6]

15. Safeline 5702 chemical-cartridge respirator (with 5961 cartridges). Extension of approval BM-23B-19, issued to Safeline Products, December 10, 1965.

16. Bausch & Lomb 5R21 chemical-cartridge respirator (with 5-15-21 cartridges). Extension of approval BM-23B-25, issued to Bausch & Lomb, Inc., December 8, 1965.[6]

[6]A type BE: Organic-Vapor and Particulate-Matter Respirator is covered by the same approval number.

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17. Acme 68201-OV chemical-cartridge respirator (with 68004-OV cartridges). Approval BM-23B-28, issued to Scott Aviation Division, September 29, 1966.

18. Acme 68101-OV chemical-cartridge respirator (with 6502-OV cartridge). Approval BM-23B-29, issued to Scott Aviation Division, November 25, 1966.

19. Safeline 5551 chemical-cartridge respirator (with 5951 cartridge). Approval BM-23B-30, issued to Safeline Products, January 17, 1967.

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.

1. A. O. 85085 and 86055 chemical-cartridge respirators (with 855 filter cartridges). Approval BM-2305, issued to American Optical Co., February 3, 1958, under schedule 23, and September 18, 1957, under schedule 23A (pneumoconiosis-producing and toxic dusts and mists).

2. Safeline 5225 chemical-cartridge respirator (with 5969 filter cartridges). Extension of approval BM-2305, issued to Safeline Products, January 24, 1964, under schedule 23A (pneumoconiosis-producing and toxic dusts and mists).

3. M-S-A® cat. No. 10-48334 chemical-cartridge respirator (with GMA-10-46727 cartridges and 10-17034 filters). Approval BM-2306, issued to Mine Safety Appliances Co., October 17, 1951, under schedule 23 (toxic fumes).

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).[6]

5. M-S-A® cat. No. 10-83356 chemical-cartridge respirator (with GMA-10-44135 cartridges and 10-73634 filters). Extension of approval BM-2301, issued to Mine Safety Appliances Co., June 24, 1953, under schedule 23 (toxic dusts).[6]

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

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TABLE 3. - Organic-Vapor and Particulate-Matter Respirators Approved as of December 31, 1965

Respirator	Approval number	Approved for protection against inhalation of organic vapors					
		Pneumoconiosis-producing dusts	Toxic dusts	Pneumoconiosis-producing mists	Toxic mists	Toxic fumes	Toxic gases and vapors
M-S-A® 10-85556	2301	-	X	-	-	-	-
A. O. R9053 and R8053	2305	X	X	X	X	-	-
Safeline 5235	2305	X	X	X	X	-	-
M-S-A® 10-48335	2306	-	-	-	-	X	-
Willson 741CD and 841CD	2308	X	X	-	-	-	-
Pulmosan C-239	2309	X	X	-	-	-	-
M-S-A® 10-76853	2310	-	X	-	-	-	-
A. O. R5361 and R6361	23B-11	X	X	X	X	X	-
Safeline 5275	23B-11	X	X	X	X	X	-
M-S-A® 10-84386	23B-12	-	-	-	-	-	-
Binks 40-80	23B-12	-	-	-	-	-	-
A. O. R9051P and R6051P	23B-13	X	X	X	X	-	-
DeVilbiss 47736	23B-13	X	X	X	X	-	-
Safeline 5215	23B-13	X	X	X	X	-	-
Willson 941P	23B-14	-	-	-	-	-	-
A. O. R5091P and R6091P	23B-15	X	X	X	X	-	-
DeVilbiss MEP-502	23B-15	X	X	X	X	-	-
Safeline 5271	23B-15	X	X	X	X	-	-
Pulmosan C-251	23B-16	-	-	-	-	-	-
Welsh 7511	23B-17	X	X	X	X	-	-
Welsh 7531	23B-18	-	-	-	-	-	-
A. O. R9051P	23B-20	X	X	X	X	-	-
Safeline 5719	23B-20	X	X	X	X	-	-
A. O. R9053	23B-21	X	X	X	X	-	-
Safeline 5706	23B-21	X	X	X	X	-	-
A. O. R9091P	23B-22	X	X	X	X	-	-
Safeline 5713	23B-22	X	X	X	X	-	-
A. O. R9361	23B-23	X	X	X	X	X	-
Safeline 5714	23B-23	X	X	X	X	X	-
Glendale GR-2021-10	23B-25	X	X	X	X	-	-
Bausch & Lomb 582110	23B-25	X	X	X	X	-	-
A. O. R8135	23B-26	X	X	X	X	-	-
Glendale GR-2021-20	23B-27	-	-	-	-	-	-
Bausch & Lomb 582120	23B-27	-	-	-	-	-	-
Safeline 5535	23B-31	X	X	X	X	-	-
A. O. R8151P	23B-32	X	X	X	X	-	-
Safeline 5560	23B-32	X	X	X	X	-	-
A. O. R8191P	23B-33	X	X	X	X	-	-
Safeline 5521	23B-33	X	X	X	X	-	-
A. O. R8175P	23B-34	X	X	X	X	-	-

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6. M-S-A[9] cat. No. 10-76853 chemical-cartridge respirator (with CHA-10-76883 cartridge and 10-76887 filter). Extension of approval BM-2310, issued to Mine Safety Appliances Co., January 21, 1957, under schedule 23A (toxic dusts).[9]

7. A. O. R5361 and R6561 chemical-cartridge respirators (with R561 filter cartridge). Approval BM-23B-11, issued to American Optical Co., February 14, 1967 (pneumoconiosis-producing and toxic dusts and mists and toxic fumes).

8. Safeline 5275 chemical-cartridge respirator (with 5985 filter cartridge). Approval BM-23B-11, issued to Safeline Products, February 14, 1967 (pneumoconiosis-producing and toxic dusts and mists and toxic fumes).

9. Pulmosan No. C-239 chemical-cartridge respirator (with CHA cartridge and C239-7 filter). Extension of approval BM-2309, issued to Pulmosan Safety Equipment Corp., August 26, 1958, under schedule 23A (pneumoconiosis-producing and toxic dusts).[9]

10. M-S-A[9] cat. No. 10-84306 chemical-cartridge respirator (with CHA-10-84135 cartridges and 10-84313 filters). Approval BM-23B-12, issued to Mine Safety Appliances Co., December 23, 1960 (paint, lacquer, and enamel mists).

11. Misco cat. No. 40-80 chemical-cartridge respirator (with cat. No. 40-13 cartridges and 40-62 filters). Extension of approval BM-23B-12, issued to Misco Manufacturing Co., December 23, 1960 (paint, lacquer, and enamel mists).

12. A. O. R5051P and R6051P chemical-cartridge respirators (with R51 cartridges and R40 filters). Approval BM-23B-13, issued to American Optical Co., December 23, 1960 (pneumoconiosis-producing and toxic dusts and mists, and paint, lacquer, and enamel mists).

13. Willson No. 941P chemical-cartridge respirator (with No. 41 cartridges and R546 filters). Approval BM-23B-14, issued to Willson Products, Inc., December 23, 1960 (paint, lacquer, and enamel mists).

14. A. O. R5091P and R6091P chemical-cartridge respirators (with R91 filter cartridges). Approval BM-23B-15, issued to American Optical Company, December 23, 1960 (pneumoconiosis-producing and toxic dusts and mists, and paint, lacquer, and enamel mists).

15. DeVilbiss 47736 chemical-cartridge respirator (with MKP-506 cartridges and MKP-403 filters). Extension of approval BM-23B-13, issued to The DeVilbiss Co., January 4, 1961 (pneumoconiosis-producing and toxic dusts and mists, and paint, lacquer, and enamel mists).

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

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16. Safeline 5215 chemical-cartridge respirator (with 5961 cartridges and 5919 filters). Extension of approval BM-23B-13, issued to Safeline Products, January 24, 1964 (pneumoconiosis-producing and toxic dusts and mists, and paint, lacquer, and enamel mists).

17. DeVilbiss MSP-502 chemical-cartridge respirator (with No. 4365[illegible] filter cartridges). Extension of approval BM-23B-15, issued to The DeVilbiss Co., January 4, 1961 (pneumoconiosis-producing and toxic dusts and mists, paint, lacquer, and enamel mists). Respirator is inactive, but cartridges and filters are available for use with DeVilbiss 47736-010 respirator.

18. Safeline 5271 chemical-cartridge respirator (with 5981 filter cartridges). Extension of approval BM-23B-15, issued to Safeline Products, January 24, 1964 (pneumoconiosis-producing and toxic dusts and mists and paint, lacquer, and enamel mists).

19. Pulmosan C-251 chemical-cartridge respirator (with CHA cartridge and C251-7 filter). Approval BM-23B-16, issued to Pulmosan Safety Equipment Corp., April 7, 1961 (paint, lacquer, and enamel mists).

20. Welsh No. 7511 chemical-cartridge respirator (with 7500-1 cartridges and 7500-6 filters). Approval BM-23B-17, issued to Welsh Manufacturing Co., September 9, 1963 (pneumoconiosis-producing and toxic dusts and mists).

21. Welsh No. 7531 chemical-cartridge respirator (with 7500-1 cartridges and 7500-10 filters). Approval BM-23B-18, issued to Welsh Manufacturing Co., June 15, 1964 (paint, lacquer, and enamel mists).

22. A. O. R9051P chemical-cartridge respirator (with R51 cartridges and R40 filters). Approval BM-23B-20, issued to American Optical Co., December 24, 1964 (pneumoconiosis-producing and toxic dusts and mists and paint, lacquer, and enamel mists).

23. A. O. R9033 chemical-cartridge respirator (with R33 filter cartridges). Approval BM-23B-21, issued to American Optical Co., December 24, 1964 (pneumoconiosis-producing and toxic dusts and mists).

24. A. O. R9091P chemical-cartridge respirator (with R91 filter cartridges). Approval BM-23B-22, issued to American Optical Co., December 24, 1964 (pneumoconiosis-producing and toxic dusts and mists and paint, lacquer, and enamel mists).

25. A. O. R9561 chemical-cartridge respirator (with R561 filter cartridges). Approval BM-23B-23, issued to American Optical Co., December 24, 1964 (pneumoconiosis-producing and toxic dusts and mists, and toxic fumes).

26. A. O. R9155 chemical-cartridge respirator (with R155 filter cartridge). Approval BM-23B-26, issued to American Optical Co., July 9, 1965 (pneumoconiosis-producing and toxic dusts and mists).

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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).

28. Safeline 5706 chemical-cartridge respirator (with 5969 filter cartridges). Extension of approval BM-23B-21, issued to Safeline Products, December 10, 1965 (pneumoconiosis-producing and toxic dusts and mists).

29. Safeline 5713 chemical-cartridge respirator (with 5981 filter cartridges). Extension of approval BM-23B-22, issued to Safeline Products, December 10, 1965 (pneumoconiosis-producing and toxic dusts and mists and paint, lacquer, and enamel mists).

30. Safeline 5714 chemical-cartridge respirator (with 5985 filter cartridge). Extension of approval BM-23B-23, issued to Safeline Products, December 10, 1965 (pneumoconiosis-producing and toxic dusts and mists, and toxic fumes).

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).[a]

32. Bausch & Lomb 382110 chemical-cartridge respirator (with 5-15-21 cartridges and 5-15-10 filters). Extension of approval BM-23B-25, issued to Bausch & Lomb, Inc., January 20, 1966 (pneumoconiosis-producing and toxic dusts and mists).[a]

33. Glendale GR-2021-20 chemical-cartridge respirator (with C-21 cartridges and F-20 filters). Approval BM-23B-27, issued to Glendale Optical Co., February 3, 1966 (paint, lacquer, and enamel mists).

34. Bausch & Lomb 382120 chemical-cartridge respirator (with 5-15-21 cartridges and 5-15-20 filters). Extension of approval BM-23B-27, issued to Bausch & Lomb, Inc., February 3, 1966 (paint, lacquer, and enamel mists).

35. Safeline 5555 chemical-cartridge respirator (with 5955 filter cartridge). Approval BM-23B-31, issued to Safeline Products, January 17, 1967 (pneumoconiosis-producing and toxic dusts and mists).

36. A. O. BR151P chemical-cartridge respirator (with R151 cartridge and R149 filter). Approval BM-23B-32, issued to American Optical Co., April 24, 1968 (pneumoconiosis-producing and toxic dusts and mists and paint, lacquer, and enamel mists).

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[a]A type E: Organic-Vapor Respirator is covered by the same approval number.

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37. Safeline 5560 chemical-cartridge respirator (with 5431 cartridge and 5060 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).

38. A. O. M8191P chemical-cartridge respirator (with R191 filter cartridge). Approval BM-23B-33, issued to American Optical Co., 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).

40. A. O. M8175P chemical-cartridge respirator (with R175 cartridge and R140 filter). Approval BM-23B-34, issued to American Optical Co., September 13, 1968 (pneumoconiosis-producing and toxic dusts and mists and paint, lacquer, and enamel mists).

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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
Arc 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
Cairns Safety Products, 2727 West Roscoe St., Chicago, Ill. 60618
E. S. Carver, Station A, South Bend, Ind. 46614
Davis Emergency Equipment Division of "Automatic" Sprinkler Corp. of America, 45 Hallock 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. 55119
Morris Industries (formerly The Fyr-Fyter Co.) Fire and Safety Equipment Div., P.O. Box 2750, Newark, N.J. 07114
Ranchero 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. 91204
Safeline Products, P.O. Box 350, 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
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