

TABLE I.—ASSIGNED PROTECTION FACTORS

Type of respirator <sup>1 2</sup>	Half mask	Full facepiece	Helmet/hood	Loose-fitting facepiece
1. Air-Purifying Respirator .....	<sup>3</sup> 10	50	.....	.....
2. Powered Air-Purifying Respirator (PAPR) .....	50	1000	<sup>4</sup> 1000	25
3. Supplied-Air Respirator (SAR) or Airline Respirator:				
• Demand mode .....	10	50	.....	.....
• Continuous-flow mode .....	50	1,000	<sup>4</sup> 1,000	25
• Pressure-demand or other positive-pressure mode .....	50	1,000	.....	.....
4. Self-Contained Breathing Apparatus (SCBA):				
• Demand mode .....	10	50	50	.....
• Pressure-demand or other positive-pressure mode (e.g., open/closed circuit) .....	.....	10,000	10,000	.....
		<sup>5</sup> (maximum)	<sup>5</sup> (maximum)	

**Notes:**

<sup>1</sup> Employers may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance or when required respirator use is independent of concentration.

<sup>2</sup> The assigned protection factors in Table I only apply when the employer implements a continuing, effective respirator program as specified by OSHA's Respiratory Protection Standard at 29 CFR 1910.134, including training, fit testing, maintenance and use requirements.

<sup>3</sup> This APF category includes quarter masks, filtering facepieces, and half-masks.

<sup>4</sup> Previous studies involving Workplace Protection Factor (WPF) and Simulated Workplace Protection Factor (SWPF) testing on helmet/hood respirators show that some of these respirators do not provide a level of protection consistent with an APF of 1000. Therefore, only helmet/hood respirators that ensure the maintenance of a positive pressure inside the facepiece during use, consistent with performance at a level of protection of 1000 or greater, receive an APF of 1000. All other helmet/hood respirators are treated as loose-fitting facepiece respirators and receive an APF of 25.

<sup>5</sup> Although positive pressure SCBAs appear to provide the highest level of respiratory protection, a SWPF study of SCBA users concluded that all users may not achieve protection factors of 10,000 at high work rates. When employers can estimate hazardous concentrations for planning purposes, they must use a maximum assigned protection factor no higher than 10,000.

(B) *Maximum Use Concentration (MUC).* (1) The employer must select a respirator for employee use that maintains the employee's exposure to the hazardous substance, when measured outside the respirator, at or below the MUC.

**Note to paragraph (d)(3)(i)(B)(1):** MUCs are effective only when the employer has a continuing, effective respiratory protection program as specified by 29 CFR 1910.134, including training, fit testing, maintenance and use requirements.

(2) Employers must comply with the respirator manufacturer's MUC for a hazardous substance when the manufacturer's MUC is lower than the calculated MUC specified by this standard.

(3) Employers must not apply MUCs to conditions that are immediately dangerous to life or health (IDLH); instead, they must use respirators listed for IDLH conditions in paragraph (d)(2) of this standard.

(4) When the calculated MUC exceeds another limiting factor such as the IDLH level for a hazardous substance, the lower explosive limit (LEL), or the performance limits of the cartridge or canister, then employers must set the maximum MUC at that lower limit.

\* \* \* \* \*

(n) *Effective date.* Paragraphs (d)(3)(i)(A) and (d)(3)(i)(B) of this section become effective September 4, 2003.

\* \* \* \* \*

**Subpart Z—[Amended]**

3. The general authority citation for subpart Z of part 1910 is revised to read as follows:

**Authority:** Sections 4, 6, and 8 of the Occupational Safety and Health Act of 1970 (29 U.S.C. 653, 655, and 657); Secretary of Labor's Orders 12–71 (36 FR 8754), 8–76 (41 FR 25059), 9–83 (48 FR 35736), 1–90 (55 FR 9033), 6–96 (62 FR 111), or 3–2000 (62 FR 50017); and 29 CFR Part 1911.

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4. Section 1910.1001 is amended by:

a. Removing Table 1 in paragraph

(g)(3);

b. Redesignating Table 2 in paragraph (l)(3)(ii) as Table 1;

c. Removing the reference to “Table 2” in paragraph (l)(3)(ii) and adding “Table 1” in its place; and

d. Revising paragraphs (g)(2)(ii) and (g)(3).

The revisions read as follows:

**§ 1910.1001 Asbestos.**

\* \* \* \* \*

(g) \* \* \*

(2) \* \* \*

(ii) Employers must provide an employee with tight-fitting, powered air-purifying respirator (PAPR) instead of a negative-pressure respirator selected according to paragraph (g)(3) of this standard when the employee chooses to use a PAPR and it provides adequate protection to the employee.

\* \* \* \* \*

(3) *Respirator selection.* Employers must:

(i) Select, and provide to employees, the appropriate respirators specified in paragraph (d)(3)(i)(A) of 29 CFR 1910.134; however, employers must not select or use filtering-facepiece respirators for protection against asbestos fibers.

(ii) Provide HEPA filters for air-purifying respirators.

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5. In § 1910.1017, remove the table in paragraph (g)(3)(i), remove paragraph (g)(3)(iii), and revise paragraph (g)(3)(i) to read as follows:

**§ 1910.1017 Vinyl chloride.**

\* \* \* \* \*

(g) \* \* \*

(3) \* \* \* (i) Employers must:

(A) Select, and provide to employees, the appropriate respirators specified in paragraph (d)(3)(i)(A) of 29 CFR 1910.134.

(B) Provide an organic-vapor cartridge that has a service life of at least one hour when using a chemical-cartridge respirator at vinyl chloride concentrations up to 10 ppm.

(C) Select a canister that has a service life of at least four hours when using a powered air-purifying respirator having a hood, helmet, or full or half facepiece, or a gas mask with a front- or back-mounted canister, at vinyl chloride concentrations up to 25 ppm.

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6. In § 1910.1018, remove Tables I and II and paragraph (h)(3)(ii), redesignate paragraph (h)(3)(iii) as paragraph