

2. Retaining the Respirator-Selection Provisions of the 1,3-Butadiene Standard

As noted earlier in this section, OSHA is not proposing to revise the respirator-selection provisions of the 1,3-Butadiene Standard ("BD Standard"). Therefore, the APFs located in Table 1 ("Minimum Requirements for Respiratory Protection for Airborne BD") of the BD Standard would remain as currently published in paragraph (h)(3) ("Respirator selection") of 29 CFR 1910.1051.

The BD Standard requires that employers use respirators during work operations when engineering and work-practice controls "are not yet sufficient to reduce employee [BD] exposures to or below the [permissible exposure limits]" [see 29 CFR 1910.1051(h)(1)(iii)]. Employers must select these respirators based on the APFs listed in Table 1 of the BD Standard; in addition, they must equip air-purifying respirators with organic-vapor cartridges or canisters.

OSHA adopted the APFs in Table 1 from the Respirator Decision Logic developed by the National Institute for Occupational Safety and Health (NIOSH), even though a negotiated agreement between manufacturers who use BD and the unions representing their employees recommended the more permissive ANSI Z88-1992 APFs.

In the preamble to the final BD Standard, the Agency noted that its "decision to rely on the more protective NIOSH APFs is based on evidence showing that organic-vapor cartridges and canisters have limited capacity for adsorbing BD and may have too short a service life when used in environments containing greater than 50 ppm BD." (See 61 FR 56816.) While developing the final BD Standard, OSHA reviewed the breakthrough test data that were available for organic-vapor cartridges and canisters challenged against BD (and summarized in Table X-1 of the preamble to the final BD Standard; see 61 FR 56817). Based on this review, the Agency concluded:

Allowing for a reasonable margin of protection, and given that test data were available only for a few makes of cartridges and canisters, OSHA believes that air-purifying devices should not be used for protection against BD present in concentrations greater than 50 ppm, or 50 times the 1 ppm PEL. Thus, OSHA finds that the ANSI APFs of 100 for full facepiece, air-purifying respirators and 1,000 for PAPRs equipped with tight-fitting facepieces are inappropriate for selecting respirators for BD.

In summary, test data cited by the Agency in the final BD Standard demonstrate short breakthrough times

for BD concentrations above 50 ppm. Accordingly, these short breakthrough times justified limiting to 50 ppm the upper limit at which employees can use air-purifying respirators for protection against BD exposures. From the Agency's analysis of these data, OSHA also developed change schedules for cartridges and canisters that are unique for BD exposures (see Table 1 of the BD Standard). Additionally, these conclusions still are likely to be valid because OSHA reviewed the test data only six years ago (*i.e.*, 1996). Therefore, the Agency is proposing to retain the conservative NIOSH APFs as necessary to protect employees from BD exposures. Nevertheless, OSHA is asking employers and employees who are subject to the provisions of the existing BD Standard to provide additional information that supports retaining the existing APFs or adopting the generic APFs specified under this proposed rulemaking (See Section VII, Issues, of this preamble).

3. Retaining the Respirator-Selection Provisions in Other Substance-Specific Standards

While OSHA is proposing to retain the existing BD Standard in its entirety, it also is proposing to retain a number of respirator-selection provisions in other substance-specific standards as well. The respirator-selection requirements proposed for retention often provide protection against a hazardous characteristic or condition that is unique to the regulated substance. Additionally, OSHA believes that retaining these requirements in their present form (except for plain-language revisions, as appropriate) would not increase existing employer burden because they already must comply with these requirements; consequently, retaining these provisions will maintain the level of respirator protection currently afforded to employees. The following sections describe the most important provisions that the Agency is proposing to retain.¹²

¹² Most of the provisions described in these sections are in, or are footnotes to, the respirator-selection tables proposed for removal from the substance-specific standards. These sections also describe several other respirator-selection provisions that are not part of these tables, but which OSHA is retaining and which may be of interest to the regulated community. If this proposal does not specifically identify or describe a respirator-selection provision for removal or revision, then OSHA is retaining that provision in its existing form. The Agency believes that retaining these provisions does not increase the regulatory burden of employers because they must currently comply with them.

- Lines 13-17¹³ and 21-21 under "Required apparatus" in the undesignated table of 29 CFR 1910.1017 (Vinyl Chloride (VC) Standard); and footnote 1 to Table 1 of 29 CFR 1910.1028 (Benzene Standard). These provisions specify a minimum service life for cartridges and canisters used to protect employees during exposure to these substances. In the VC Standard, employers must provide organic-vapor cartridges or canisters with a service life of at least one hour at VC concentrations up to 10 ppm when using chemical-cartridge respirators. These cartridges and canisters must have a service life of at least four hours at VC concentrations up to 25 ppm when using a canister with a powered air-purifying respirator that has a hood, helmet, half-mask, or full facepiece; the four-hour service-life requirement also applies when an employee uses a gas mask, but in this case, the employee must use a front-or back-mounted canister. According to the Benzene Standard, employers must ensure that canisters used with non-powered air-purifying respirators have a minimum service life of four hours when tested at 150 ppm benzene at a flow rate of 64 liters per minute (Lpm), a temperature of 25° C, and a relative humidity of 85%; testing for canisters used with tight-fitting and loose-fitting powered air-purifying respirators must be at flow rates of 115 Lpm and 170 Lpm, respectively.

The Agency believes that these minimum service-life specifications ensure that employers use the designated respirators at appropriate concentration levels of the regulated substances. Accordingly, OSHA is proposing to retain these specifications to provide employees with a minimum level of cartridge and canister endurance when they use the designated respirators at these concentrations. While retaining these specifications may limit employers' flexibility in adopting change schedules, the Agency considers this limitation warranted in view of the properties of the substance that require greater protection or a higher level of protection for employees. Moreover, retaining these specifications adds no regulatory burden on employers because they must use the specifications under the existing standards.

- Paragraphs (h)(3)(ii), and lines 6, 7, 10, and 11 under "Required respirator" in Table II of 29 CFR 1910.1018 (Inorganic Arsenic Standard); lines 1-4

¹³ Only lines with written text were counted in determining the number of lines; blank lines that occurred before a written line were ignored for counting purposes.