

To use full facepiece positive pressure SCBAs under emergency exposure conditions, the proposal specifies that employers must develop an emergency plan (which several substance specific standards already require), and provide an estimate of the concentration levels likely to result under the emergency conditions. Emergency plans would limit employee exposure to the hazardous conditions by informing them in advance of the specific tasks they are to perform, while estimating concentration levels of the hazardous substance would increase the likelihood that their exposures to the substance will remain within the APF assigned to the respirator. In addition, OSHA's proposal to limit use of these respirators to emergency conditions is similar to the restriction placed on them in footnote 4 of the APF table published in the 1992 ANSI standard; this restriction reads, in part:

[A] definitive assigned protection factor could not be listed for positive-pressure SCBAs. For emergency planning purposes where hazardous concentrations can be estimated, an assigned protection factor of no higher than 10,000 should be used. (Ex. 1–50)

For the class of respirators designated as pressure demand SCBAs with tight-fitting hoods or helmets, including the Survivair Puma, OSHA is proposing an APF of 10,000 maximum. The basis for this proposed APF are the analogous operational characteristics between these respirators and tight-fitting full facepiece pressure demand SCBAs. Accordingly, the Agency proposes to limit use of demand SCBAs with tight-fitting hoods or helmets to emergency planning purposes, similar to the restriction it is placing on tight-fitting full facepiece pressure demand SCBAs.

Paragraph (d)(3)(i)(B)—MUC Provisions

These proposed requirements consist of four separate paragraphs [(d)(3)(i)(B)(1) through (d)(3)(i)(B)(4)]. Paragraph (d)(3)(i)(B)(1), which proposes requirements on the use and application of MUCs, reads, “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.” This proposed paragraph requires employers to select respirators for employee protection that are appropriate to the ambient levels of the hazardous substance found in the workplace, *i.e.*, that the ambient level of the hazardous

substance must never exceed the conditions specified by the MUC, which is the exposure limit specified for the hazardous substance multiplied by the respirator's APF. Accordingly, the proposed requirement ensures that employers maintain employees' direct exposure to hazardous substances (*i.e.*, inside the respirator) within levels specified by OSHA's Z tables and substance-specific standards, and where OSHA has no standards, within consensus standards levels. Therefore, this provision would not only provide employee protection consistent with prevailing industrial-hygiene practice, but with existing regulatory and statutory requirements as well.

The single note in the proposed MUC provisions follows paragraph (d)(3)(i)(B)(1). This note reads that “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.” This provision implies that MUCs are dependent on the APFs of the respirators selected by employers to protect employees against airborne contaminants. In this regard, the Agency determined the APF for a respirator or class of respirators based on studies that assessed the respirator under conditions that met or exceeded the program requirements of its Respiratory Protection Standard at 29 CFR 1910.134. These studies ensured that the study participants who used the respirators received thorough respirator training and fit testing, and used the respirators correctly; also, employers (or research staff in the case of SWPF studies) maintained the respirators in proper operating condition. Consequently, the APF used in calculating a MUC is valid for this purpose only if employers implement a continuing, effective, and comprehensive respiratory-protection program as required by OSHA's Respiratory Protection Standard. When employers do not meet the conditions specified in this note, they may not use the respirator's APF in determining the MUC.

The next MUC provision, proposed paragraph (d)(3)(i)(B)(2), states that “[e]mployers 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.” While OSHA believes that a MUC calculated according to the proposed MUC definition normally would provide adequate employee protection, it defers to respirator manufacturers when they recommend a

lower MUC for their respirators under specific hazardous-substance conditions. Respirator manufacturers warrant such deference because they are most familiar with the functional limitations of their respirators when exposed to airborne concentrations of hazardous substances. Also, manufacturer's may base their recommended MUCs on unpublished WPF or SWPF studies; such studies, when conducted properly, would increase the validity of their recommendations. As with a MUC determined using OSHA's proposed calculation method, the Agency believes that the protection afforded to employees by a respirator manufacturer's MUC depends on the employer's full compliance with the comprehensive respiratory-protection program specified by OSHA's Respiratory Protection Standard.

The Agency would not defer to respirator manufacturers who recommend higher MUCs than an employer would obtain using the proposed calculation method because such results would not be consistent with the maximum ambient level of a hazardous substance in which employees can use the respirators, *i.e.*, the maximum ambient level of a hazardous substance would exceed the level determined from the known exposure limit for the hazardous substance and the protection of the APFs determined by this proposed rulemaking. Under these conditions, the respirator manufacturer would be basing the recommendation on an invalid application of the known exposure limit or the APF (or both); therefore, such an invalid application would cause employers to select respirators that are incapable of protecting employees from the ambient level of a hazardous substance, resulting in serious health impairments to their employees.

Paragraph (d)(3)(i)(B)(3) of the proposed MUC provisions states, “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.” Accordingly, employers could not use the proposed MUC calculation method (or a respirator manufacturer's MUC) to select a respirator for employees who are entering an IDLH atmosphere. OSHA found support for these proposed requirements in comments cited in the preamble to the final Respiratory Protection Standard. These comments noted that employers should not use MUCs to select respirators for employees exposed to IDLH

29 CFR 1910.1000. The Agency found that less than 0.01% of the exposures to these substances exceeded an APF of 1,000.