

sampling is performed while the subject performs a series of set exercises. The laboratory setting is used to control many of the variables found in workplace studies, while the exercises simulate the work activities of respirator users. This type of study is designed to determine the optimum performance of respirators by reducing the impact of sources of variability through maintenance of tightly controlled study conditions.

**Qualitative fit test\*:** A pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

**Quantitative fit test\*:** An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

**Self-contained breathing apparatus\*:** An atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

**Supplied-air respirator (or airline) respirator\*:** An atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

**Tight-fitting facepiece\*:** A respiratory inlet covering that forms a complete seal with the face.

## II. Pertinent Legal Authority

The purpose of the Occupational Safety and Health Act, 29 U.S.C. 651 *et seq.* (the "OSHA Act" or "Act") is to "assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources." [29 U.S.C. 651(b)]. To achieve this goal, Congress authorized the Secretary of Labor to promulgate and enforce occupational safety and health standards [see 29 U.S.C. 654(b) (requiring employers to comply with OSHA standards), 29 U.S.C. 655(a) (authorizing summary adoption of existing consensus and federal standards within two years of the Act's enactment), and 29 U.S.C. 655(b) (authorizing promulgation of standards pursuant to notice and comment)].

A safety or health standard is a standard "which requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide safe or healthful employment or places of employment." [29 U.S.C. 652(8)]. A standard is reasonably necessary or appropriate within the meaning of section 652(8) of the Act when it substantially reduces or eliminates significant risk, and is technologically and economically feasible, cost effective, consistent with prior Agency action or supported by a

reasoned justification for departing from prior Agency action, and supported by substantial evidence; it must also effectuate the Act's purposes better than any national consensus standard it supersedes [see *International Union, UAW v. OSHA (LOTO II)*, 37 F.3d 665 (DC Cir. 1994; and 58 FR 16612–16616 (March 30, 1993)].

OSHA has discussed the nature of adverse health effects caused by exposure to airborne chemical hazards many times in previous rulemaking activities [see, for example, the preambles to any of OSHA's substance-specific standards codified in 29 CFR 1910.1001 to 1910.1052]. As discussed in the Significance of Risk section of the Respiratory Protection Standard, the health risk presented to workers can be represented by the risk that a respirator will not be properly selected or used, which increases the possibility that the user will be overexposed to a harmful air contaminant. The risks that are addressed by the Respiratory Protection Standard are not characterized as illness-specific risks but, instead, relate to a more general probability that when a respirator provides insufficient protection, the wearer may be exposed to a level of air contaminant that is associated with material impairment of the worker's health.

The Agency believes that a standard is technologically feasible when the protective measures it requires already exist, can be brought into existence with available technology, or can be created with technology that can reasonably be expected to be developed [see *American Textile Mfrs. Institute v. OSHA (Cotton Dust)*, 452 U.S. 490, 513 (1981); *American Iron and Steel Institute v. OSHA (Lead II)*, 939 F.2d 975, 980 (DC Cir. 1991)]. A standard is economically feasible when industry can absorb or pass on the costs of compliance without threatening the industry's long-term profitability or competitive structure [see *Cotton Dust*, 452 U.S. at 530 n. 55; *Lead II*, 939 F.2d at 980], and a standard is cost effective when the protective measures it requires are the least costly of the available alternatives that achieve the same level of protection [see *Cotton Dust*, 453 U.S. at 514 n. 32; *International Union, UAW v. OSHA (LOTO III)*, 37 F.3d 665, 668 (DC Cir. 1994)].

All standards must be highly protective [see 58 FR 16612, 16614–15 (March 30, 1993); *LOTO III*, 37 F.3d at 669]. Accordingly, section 8(g)(2) of the Act authorizes OSHA "to prescribe such rules and regulations as [it] may deem necessary to carry out its responsibilities under the Act" [see 29 U.S.C. 657(g)(2)]. However, health

standards must also meet the "feasibility mandate" of section 6(b)(5) of the OSH Act, 29 U.S.C. 655(b)(5). Section 6(b)(5) of the Act requires OSHA to select "the most protective standard consistent with feasibility" needed to reduce significant risk when regulating health hazards [see *Cotton Dust*, 452 U.S. at 509]. Section 6(b)(5) also directs OSHA to base health standards on "the best available evidence," including research, demonstrations, and experiments [see 29 U.S.C. 655(b)(5)]. In this regard, OSHA must consider "in addition to the attainment of the highest degree of health and safety protection \* \* \* the latest scientific data \* \* \* feasibility and experience gained under this and other health and safety laws." (Id.). Furthermore, section 6(b)(5) of the Act specifies that standards must "be expressed in terms of objective criteria and of the performance desired" [see 29 U.S.C. 655(b)(7)].

The proposed APF and MUC provisions are integral components of an effective respiratory protection program. Respiratory protection is a supplemental method used by employers to protect employees against airborne contaminants in workplaces where feasible engineering controls and work practices are not available, have not yet been implemented, or are not in themselves sufficient to protect employee health. Employers also use respiratory protection under emergency conditions involving the accidental release of airborne contaminants. The proposed amendments to OSHA's Respiratory Protection Standard, and the Agency's substance-specific standards, would provide employers with critical information to use when selecting respirators for employees exposed to airborne contaminants found in general industry, construction, shipyard, longshoring, and marine terminal workplaces. Since it is generally recognized that different types of respiratory protective equipment provide different degrees of protection against hazardous exposures, proper respirator selection is of critical importance. The proposed APF and MUC provisions provide additional guidance on the point at which an increase in the level of respiratory protection is necessary. The APF and MUC provisions will greatly enhance an employer's ability to select a respirator that will adequately protect employees. OSHA believes that in the absence of these proposed provisions, employers will be less certain about which respirators to select for adequate employee protection.