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### §84.194 Filters used with chemical cartridges; location; replacement.

- (a) Particulate matter filters used in conjunction with a chemical cartridge shall be located on the inlet side of the cartridge.
- (b) Filters shall be incorporated in or firmly attached to the cartridge and each filter assembly shall, where applicable, be designed to permit its easy removal from and replacement on the cartridge.

# § 84.195 Breathing tubes; minimum requirements.

Flexible breathing tubes used in conjunction with respirators shall be designed and constructed to prevent:

- (a) Restriction of free head movement;
- (b) Disturbance of the fit of facepieces, mouthpieces, hoods, or helmets;
- (c) Interference with the wearer's activities; and
- (d) Shutoff of airflow due to kinking, or from chin or arm pressure.

# §84.196 Harnesses; installation and construction; minimum requirements.

- (a) Each respirator shall, where necessary, be equipped with a suitable harness designed and constructed to hold the components of the respirator in position against the wearer's body.
- (b) Harnesses shall be designed and constructed to permit easy removal and replacement of respirator parts and, where applicable, provide for holding a full facepiece in the ready position when not in use.

### § 84.197 Respirator containers; minimum requirements.

Respirators shall be equipped with a substantial, durable container bearing

markings which show the applicant's name, the type and commercial designation of the respirator it contains and all appropriate approval labels.

# § 84.198 Half-mask facepieces, full facepieces, mouthpieces, hoods, and helmets; fit; minimum requirements.

- (a) Half-mask facepieces and full facepieces shall be designed and constructed to fit persons with various facial shapes and sizes either:
- (1) By providing more than one facepiece size; or
- (2) By providing one facepiece size which will fit varying facial shapes and sizes.
- (b) Hoods and helmets shall be designed and constructed to fit persons with various head sizes, provide for the optional use of corrective spectacles or lenses, and insure against any restriction of movement by the wearer.
- (c) Mouthpieces shall be equipped with noseclips which are securely attached to the mouthpiece or respirator and provide an airtight fit.
- (d) Full facepieces shall provide for optional use of corrective spectacles or lenses which shall not reduce the respiratory protective qualities of the respirator.
- (e) Facepieces, hoods, and helmets shall be designed to prevent eyepiece fogging.

# § 84.199 Facepieces, hoods, and helmets; eyepieces; minimum requirements.

Facepieces, hoods, and helmets shall be designed and constructed to provide adequate vision which is not distorted by the eyepieces.

#### $\S\,84.200$ Inhalation and exhalation valves; minimum requirements.

- (a) Inhalation and exhalation valves shall be provided where necessary and protected against distortion.
- (b) Inhalation valves shall be designed and constructed to prevent excessive exhaled air from entering cartridges or adversely affecting canisters.
  - (c) Exhalation valves shall be—

### (1) Protected against damage and external influence; and

(2) Designed and constructed to prevent inward leakage of contaminated air.

### § 84.201 Head harnesses; minimum requirements.

- (a) (1) Facepieces for chemical cartridge respirators other than single-use vinyl chloride shall be equipped with adjustable and replaceable head harnesses designed and constructed to provide adequate tension during use and an even distribution of pressure over the entire area in contact with the face.
- (2) Facepieces for single-use vinyl chloride respirators shall be equipped with adjustable head harnesses designed and constructed to provide adequate tension during use and an even distribution of pressure over the entire area in contact with the face.
- (b) Mouthpieces shall be equipped where applicable, with an adjustable and replaceable harness designed and constructed to hold the mouthpiece in place.

# § 84.202 Air velocity and noise levels; hoods and helmets; minimum requirements.

Noise levels generated by the respirator will be measured inside the hood or helmet at maximum airflow obtainable and shall not exceed 80 dBA.

### § 84.203 Breathing resistance test; minimum requirements.

- (a) Resistance to airflow will be measured in the facepiece, mouthpiece, hood, or helmet of a chemical cartridge respirator mounted on a test fixture with air flowing at a continuous rate of 85 liters per minute, both before and after each test conducted in accordance with §§ 84.206 through 84.207.
- (b) The maximum allowable resistance requirements for chemical cartridge respirators are as follows:

# MAXIMUM RESISTANCE

[Millimeter water column height]

Type of chemical-cartridge respirator	Inhalation		Exhalation
	Initial	Final <sup>1</sup>	Exhalation
Other than single-use vinyl chloride respirators:			
For gases, vapors, or gases and vapors	40	45	20
For gases, vapors, or gases and vapors, and particulates	50	70	20
Single-use respirator with valves:			
For vinyl chloride	20	25	20
For vinyl chloride and particulates	30	45	2
Single-use respirator without valves:			
For vinyl chloride	15	20	(2)
For vinyl chloride and particulates	25	40	(2)

<sup>&</sup>lt;sup>1</sup> Measured at end of service life specified in Table 11 of this subpart.