



CARTRIDGE TYPE RESPIRATOR LIMITATIONS

EMPIRE
PACIFIC

Risk Management, Inc.

Company Name _____

Date _____

A half mask cartridge-type respirator is the most common type used for protection against organic vapors, dusts, mists, acid gases, and fumes. You should be aware, however, that respirators of this type provide adequate protection only under limited conditions. This type of respirator is designed mainly for short-term operations that do not contain atmospheres that are "immediately dangerous to life." To use this type of respirator you must know both the type and concentration of contaminants in the air.

Cartridge type respirators are approved only for low concentrations of contaminants in the air, the maximum permitted level of which depends on the "respiratory protection factor" (a measure of the degree of protection provided to the wearer). If a *qualitative* fit test is used (for example banana oil, or smoke tubes) a respiratory protection factor of 10 must be used. To determine the maximum concentration of airborne contaminants permitted in the air where the respirator will be used, the permissible time weighted average concentration (TWA or TLV) of the contaminant is multiplied by 10. For example, the TLV for lead fume is .15 mg/m³, so the maximum concentration permitted in the air when using this type of respirator is 1.5 mg/m³. (TLVs are published by the American Conference of Governmental Industrial Hygienists (ACGIH).

Also, remember that a cartridge-type respirator *does not* generate breathing air and the oxygen content of the area must be at least 19.5% to use this type of respirator. In addition, it must also be worn only in the presence of moderately toxic air contaminants that have *distinctive warning properties such as odor, irritation, or taste*. The purpose of this requirement is to allow the user to tell when the cartridges have become exhausted. If you can detect the contaminant inside the mask, it means you must exit the area immediately and change the cartridge.

Other things you should be aware of when wearing a cartridge-type respirator:

- Never enter a confined space with a cartridge-type respirator unless you know for sure that the space has been *tested* for oxygen content and toxic air contaminants, and that entry with this type of respirator is allowable and that entry has been *approved*.
- Never work in toxic vapors for which the respirator cartridge was not intended. There are many different types and combinations of cartridges--each for a specific type of hazard that is described on the band surrounding the cartridge. Also be sure the cartridges are the type the manufacturer specifies for your respirator. In general, they are not interchangeable from one manufacture to another. Ask your supervisor if you have doubts about these factors.
- Be sure your respirator fits your face properly. Most manufacturers provide at least three sizes of face pieces and one of them should fit you better than others. Your supervisor will help you select the proper size so that you get a good respirator fit.

5300 SW Meadows - Suite 220 - Lake Oswego, Oregon 97035
Phone 503 968-6300 www.empirepac.com Fax 503 968-6305

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- Be sure to check the respirator seal by performing *positive* and *negative* pressure tests immediately prior to entering a contaminated area. Tighten the straps and move the respirator around if you can't get a good seal. Beards, mustaches and long sideburns usually prevent obtaining a good seal.

Cartridge respirators are safe to use if you understand their limitations and how to use them properly.

Safety Recommendations: _____

Job Specific Topics: _____

M.S.D.S Reviewed: _____

List of Attendees

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