



INTER-ORGANIZATION MEMO

TO: R. L. Jackson
ATTENTION: See Below
FROM: E. S. Kierstead
DATE: July 19, 1983
SUBJECT: Emergency Evacuation
Respirator Protection

Attn.: W. Staples C. Reynolds
G. Brumbaugh J. Sapak
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The canisters for our emergency evacuation respiratory equipment need to be replaced. With exception, the equipment has not been used, but the shelf life on the canisters requires their replacement. Pertinent information about this equipment is:

1. A full face mask is used.
2. The canister is good for up to 25 ppm Vinyl Chloride (VC) for four (4) hours.
3. The canister has no end-of-service-life indicator.
4. The canister has a shelf life of about three (3) years (as near as I can determine).
5. The equipment must be routinely inspected.
6. The equipment is MESA/NIOSH approved.
7. Cost of canister is approximately \$25 - \$30.

Instead of replacing the canisters, I would like to use the 3M Model 8725 organic vapor/acid gas respirator. Pertinent information on this respirator is:

1. A one-piece unit, half face mask with charcoal in front (similar to the 3M - 10 ppm VC respirator).
2. The unit is good for up to 1000 ppm organic vapors with good warning properties, and/or 10 ppm Cl_2 and/or 50 ppm HCl and/or 50 ppm SO_2 by volume (alone or in combination). The maximum concentration for organic vapors will be lower than 1000 ppm where that concentration produces an atmosphere immediately dangerous to life or health.

3. There is no end-of-service-life indicator.
4. It is usable at least for several years if it remains sealed (there is no service life date on the package).
5. Once it is opened for use, it can be used until there is a noticeable odor. However, I would recommend it be discarded after it is opened and/or used. Therefore, inspection in the package is not feasible and after it is used not necessary.
6. It is MSHA/NOISH approved.
7. Cost is approximately \$7 - \$10 per unit.

Preliminary testing of the Model 8725 respirator carbon shows that the carbon does remove approximately 46 ppm VC from a 50 ppm VC gas standard in 8 hours with about a 3 ppm breakthrough onto the reference carbon of a test carbon tube.

The only question regarding the Model 8725 is one of fit. The manufacturer states "This respirator may not provide a satisfactory face seal with certain physical characteristics (such as beards or gross side burns) resulting in leakage which voids or limits the protection. If such a condition exists, the user assumes risk of all bodily injury which may possibly result."

The same would apply to a full face mask with our people because they are required to wear safety glasses, and the full face masks are not the type that accommodate only the lenses of the glasses.

Since emergency evacuation may be required for reasons other than a VC spill, such as a VC fire (which will produce HCl vapors) or a TCE or VAC spill, etc., I recommend we purchase the 3M Model 8725 respirator and use it for emergencies, instead of purchasing more canisters. This respirator should give at least as good protection as the full face mask and VC canister at a much lower cost.

However, I do not recommend that it be used as part of our regular VC protection program.



E. S. Kierstead
OSHA Compliance Supervisor

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