

3M

PLAINTIFF'S
EXHIBIT

AL-102

December 7, 1977

Thank you for calling to inquire about the 3M Brand Hydrogen Fluoride Respirator #8706. As we discussed, the 8706 was tested in our laboratory at a concentration of HF gas of 10 ppm and an airflow rate of 16 lpm. Under these conditions, breakthrough of 3 ppm (the current TLV) did not occur for four hours. Also, from published reports, the threshold detection level for HF gas is significantly less than 3 ppm.

Use of air purifying respirators against HF gas is controlled by OSHA Program Directive #300-9 since there are no NIOSH/MESA approved respirators. I've enclosed copies of the cover sheet and page 18 from #300-9 as further explanation. HF gas does have nuisance properties below 1 TLV of course, and use of any respirator including the 8706 is not controlled for such exposures. For use above 1 TLV, #300-9 spells out that the employer is to justify the use of unapproved respirators where no approval schedule exists. In the case of HF gas, this justification could take the form of both respiratory and eye protection depending on exposure levels. Use of the 8706 with or without chemical goggles may play a part in your protection plans.

I hope the above information is of assistance in your determination of 8706 acceptability.

Sincerely,

Leo F. Gehlhoff

Leo F. Gehlhoff
Technical Service
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Bldg. 230-B
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Enclosures



ARD 004279

MINNESOTA MINING AND MANUFACTURING COMPANY

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration
WASHINGTON, D.C. 20210



Office of the Assistant Secretary

JUN 9 1977

ADVANCE COPY

OSHA Program Directive #300-9

To: Field and National Offices/OSH

Subject: Addition to the Industrial Hygiene Field
Operations Manual (IHFORM)

1. Purpose. The purpose of the directive is to forward an addition to the IHFORM - Chapter XII.
2. Documentation Affected. None.
3. Background. This addition describes the method for investigation of respiratory protective equipment programs in workplaces where employees are exposed to air contaminant hazards. To provide supplemental knowledge, every CSHO should attend a respirator training course recognized by OSHA and should read the NIOSH publication 76-189, entitled "A Guide to Industrial Respiratory Protection" (a copy is being supplied to all Area Offices by the Technical Data Center).
4. Action. Place this chapter XII into the IHFORM directly after Chapter XI.
5. Effective Date. This directive is effective immediately and shall be retained until further notice.

Eula Bingham

Eula Bingham
Assistant Secretary
Occupational Safety and Health

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ARD 004280

SUBSTANTIAL PROTECTION: The 3M Brand Hydrogen Fluoride Respirator gives excellent relief, for about four hours, from discomfort of nonhazardous concentrations of hydrogen fluoride gas.

CONSTRUCTION: This respirator is lightweight, sandwich construction with chemical additives. The whole respirator is the filter.

COMFORT: Comfortable to wear and easy to breathe through. Weighs less than one ounce.

COST: Reusable but low cost allows respirator to be discarded after one wearing. No maintenance, sanitary.

VISION: Respirators were fitted to test subjects, heads were held straight, and subjects were asked to point out all areas of a numbered grid on the floor which were not obscured from view.

Respirator	Angle from center line			
	0° (straight ahead)	30°	60°	90°
3M 8706	3.0	2.5	3.0	3.5
Competitor A	5.5	3.5	3.5	4.0
Competitor B	6.0	4.5	4.0	4.0
Competitor C	3.5	5.0	4.0	3.5
Competitor D	4.0	3.5	3.5	3.5
Competitor E	8.0	4.5	4.0	4.0
Competitor F	4.0	4.0	3.5	3.5



For use against nonhazardous levels of Hydrogen Fluoride.

Effective against 10 ppm HF at an air flow rate of 16 lpm for four hours.

Filters out 98% of particulates having a mean diameter of 0.4-0.6 microns.

Lightweight, less than 7 grams.

3M

c. For asbestos, either Bureau of Mines or ^{Mine Enforcement Safety Administration} NIOSH/MESA approved respirators for asbestos dust are adequate, 29 CFR 1910.1001(d)(2).

d. For vinyl chloride, only NIOSH/MESA approved respirators can be used, 29 CFR 1910.1017(g)(2).

e. For pesticides, NIOSH/MESA approved respirators.

f. For health standards of specific air contaminants promulgated after the vinyl chloride standard, the standard itself contains the appropriate approval authority.

g. Unapproved respirators can be used only if MESA/NIOSH does not have a test schedule for the specific air contaminant, such as mercury vapor and the combination of acid vapor and high efficiency particulate filter. The employer has to justify the intended purpose of such devices and demonstrate that the respirator can provide the protection required. If OSHA concurs, then the respirator is considered as "accepted" as in 29 CFR 1910.134(b)(11). The CSHO shall contact the National Office of Technical Support for assistance.



3M BRAND
Hydrogen Fluoride
Respirator

ARD 004283