

NIOSH records beginning in 1970's pertaining to 3M respirators.

Some pages have poor copy quality – our originals look the same.



REC'D - STORAGE AREA  
GENERAL OFFICES - 3M CENTER - ST. PAUL, MINNESOTA 55101 - TEL. 733-1110

1972 MAR -9 AM 9:42  
Commercial Tape and Gift Wrap Division  
OSHA DEPT. OF LABOR

*Fale*  
*Keef*

February 23, 1972

SUBJECT: "3M" BRAND NON-TOXIC PARTICLE MASK NO. 8500

TO: ALL OSHA INDUSTRIAL HYGIENISTS

Gentlemen:

We are writing you directly to bring you information on a subject of vital mutual interest which has arisen recently. Under the circumstances we believe that this is the quickest method of giving you data which you should have.

For approximately ten years, 3M has been selling our No. 8500 for a wide variety of applications in industry. It has been an eminently successful product because of its low cost and comfort. Many manufacturers have found that it is the only respirator which their men will wear and have therefore provided it in areas where nuisance dusts were the atmospheric contaminants. We would be the first to admit that because of its comfort and cost it has also been misused in a few applications. We have tried to eliminate misuse by stressing in all of our literature, sales guidance material, and labeling that it is designed for non-toxic particles (nuisance particles) only and is not to be used for protection against toxic dusts.

The Occupational Safety and Health Act of 1971 does require "approved" respirators in areas where TLVs are exceeded. However, in our opinion, this provision does not necessitate changes in our approach as the No. 8500 can continue to be used in areas where the atmospheric contaminants do not exceed TLVs as defined by the American Conference of Government Industrial Hygienists. For mineral dusts of a nuisance or "inert" nature, the established TLV as published in the May 29, 1971 Federal Register is 50 Mppcf or 15 Mg/M<sup>3</sup> for total dust and 15 Mppcf or 5 Mg/M<sup>3</sup> for the respirable fraction. The ACGIH intends to change the TLV of all nuisance particulates to 10 Mg/M<sup>3</sup> or 30 Mppcf.

On some occasions which have recently been brought to our attention, blanket condemnations of the use of the No. 8500 have been issued by OSHA Compliance Officers. This does not seem to be in accord with the spirit or letter of the

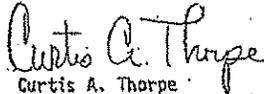
- continued -

law if a determination is not made that the TLV of the contaminant is being exceeded. The manufacturer in this case is actually providing additional protection which is not required by law.

A summary of what the No.8500 actually will do will also be informative. It is surprisingly efficient despite its light weight and comfort. Because of its large filter area and very low pressure drop, leakage around the facepiece is minimized. In-vivo testing has been conducted extensively, both in field and laboratory situations. For example, one series of tests consisted of exposing subjects of various facial types, wearing a No.8500, to a cloud of nuisance dust at a concentration of 25 Mg/ft<sup>3</sup> in a test chamber. Simultaneous samples were taken in the room and with a probe inside the respirator. 95.8%, by count, of the particles were below 5 microns in size. Geometric mean was 2.0 microns with a standard deviation of 1.6 microns. Against this dust, the No.8500 has an overall efficiency of 90.6% by weight.

It is our hope that this brief statement of our position will support you and your associates in your work of insuring compliance with the law and thus providing the safest possible working conditions for American employees.

Respectfully,



Curtis A. Thorpe  
Market Supervisor  
Occupational Protection Products

CAT/jw

cc: F. M. Dishoff - OSHA  
R. McClure - OSHA  
J. O'Neil - OSHA

OSHA Area Directors  
OSHA Regional Administrators

August 3, 1972

Mr. Donald P. Williams  
Occupational Protection Products  
39 Cassady  
2201 Hudson Road  
St. Paul, Minnesota 55119

Dear Mr. Williams:

We have reviewed the documents supporting the proposed design change for your No. 8710 respirator.

From a quality control point of view we find the proposed change acceptable. We question, however, the legibility of the 5-point nose gothic, condensed type in this application. We will, therefore, withhold final approval until we have seen a finished, marked sample nose clip. Will you please send a sample clip as soon as possible?

Sincerely

Richard Lester,  
Quality Control Section  
Engineering Branch

cc:  
E. J. Kloos  
Tom Ratliff  
G. C. File

cm

213-299-00



GENERAL OFFICES • 2501 HUDSON ROAD • ST. PAUL, MINNESOTA 55119 • TEL. 733-1110

July 27, 1972

Mr. E. J. Kloos  
U. S. Bureau of Mines  
Approval & Testing  
4800 Forbes Avenue  
Pittsburgh, Pennsylvania 15213

Dear Ed:

As per our conversation of July 24, 1972, under separate cover I am submitting for your approval samples of our No. 8710 Respirator with the U.S. Bureau of Mines approval numbers on the nose clip rather than stamped on the front of the mask. These are put on with a tape and adhered to the nose clip. Enclosed is the new drawing showing the revision.

Very truly yours,

James F. Dyrud  
Occupational Protection Products

JFD/jw  
Enclosure

cc: Mr. Alan Gudeman

*Rejected - Label too small.*

1972 JUL 31 09:11:43  
BUREAU OF MINES  
APPROVAL & TESTING  
PITTSBURGH, PA

MINNESOTA MINING AND MANUFACTURING COMPANY

DRAWING LIST

<u>DRAWING NO:</u>	<u>DATE REVISED</u>	<u>REVISION NUMBER</u>	<u>PURPOSE</u>
12-2618-0003-6	4/6/72	E	Added optional weld pattern and removed optional staple note.
12-2618-0003-6	7/21/72	F	U.S. Bureau of Mines approval numbers moved from mask to nose clip.

*NOT APPROVED*

1972 JUL 31 08:11:43

1972 MAY 30 10:52

RECEIVED  
APPROVAL AND TESTING  
E & S Technical Support Center

Approval and Testing

May 24, 1972

In reply refer to:  
215-0277-000

3M Company  
Commercial Tape & Gift Wrap Division  
3M Center  
St. Paul, Minnesota 55101

Attention: Mr. James E. Corbin

Gentlemen:

With reference to your letter of March 29, 1972, requesting approval certification of 3M's No. 8718 single-use dust respirator under 29 CFR, Part 11:

This certificate of approval TC-210-132 is granted to cover the 3M No. 8718 single use air purifying respirator for respiratory protection against pneumoconiosis and fibrosis producing dusts, including but not limited to aluminum, asbestos, coal, flour, iron ore or iron silica.

The enclosed specification for preparing the approval label N-90999-F applies. You may prepare your own label from this specification or wait for copies of the official label which we will send to you as soon as it is finished by our Graphic Services Department. In either case, please submit proofs of your label design before printing it. The label shall be reproduced on each respirator container. The approval number, TC-210-132 and the words "For Dusts" shall be legibly marked on each respirator.

Your quality control manual for production of the No. 8718 respirator was reviewed by the National Institute for Occupational Safety and Health. On the basis of that review and subsequently accepted amendments, your quality control manual is approved.

3M drawing number 12-2618-0003-6 applies.

Any changes you wish to make in this respirator shall be submitted to and a modification of this approval shall be granted before the changes are made. (Ref: Part 11, section 11.35)

F.R. DE W

EJK

Please submit final designs of labels, instructions, and markings to us for approval before finally adopting them.

This certificate of approval is not an endorsement of the respirator by the Bureau of Mines or the National Institute for Occupational Safety and Health, and such endorsement shall not be stated or implied in advertisements or other publicity. However, you may publicize the fact that your product has met the requirements of 30 CFR, Part 11.

Please send us two boxes of properly labeled and packaged TC-210-132 respirators for our record when they are commercially available.

Very truly yours,

Frank C. Gibson  
Chief, Approval and Testing  
Pittsburgh Technical Support Group

cc:  
A. K. Gudeman  
NIOSH  
1014 Broadway  
Cincinnati, Ohio 45202

→ Resp Lab  
Ed File  
AST

EJKloos:gvb



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
~~COMMUNICABLE DISEASE CONTROL CENTER - HEALTH SERVICE~~  
Health Services and Mental Health Administration  
National Institute for Occupational Safety & Health  
1014 Broadway, Cincinnati, Ohio 45202

May 22, 1972

Mr. Ed Kloos  
Health & Safety Res. & Test Ctr.  
U. S. Bureau of Mines  
4800 Forbes Avenue  
Pittsburgh, Pennsylvania 15213

Dear Ed:

The Quality Control Plan submitted by the 3 M Company with their application for approval of the No. 8710 respirator has been evaluated along with subsequent revisions requested by NIOSH. This Quality Control Plan is now acceptable to NIOSH.

Sincerely,

*Alan K. Gudeman*

Alan K. Gudeman, Chief  
Control Research Section  
Engineering Branch, DLCD

BUREAU OF MINES  
PITTSBURGH, PA.  
MAY 25 11 18 AM '72  
RECEIVED  
APPROVAL AND TESTING

Health Services and Mental Health Administration  
National Institute for Occupational Safety & Health

April 26, 1972

RECEIVED  
APPROVAL AND TESTING  
BUREAU OF LINES  
1972 APR 28 PM 2:37

Mr. James N. Corbin, Project Manager  
Occupational Protection Products  
3 M Company  
3 M Center  
34. Paul, Minnesota 55101

Dear Mr. Corbin:

We have reviewed your Quality Control Manual submitted to the Bureau of Lines for approval with your application for certification of your No. 6710 respirator.

There are some additions and/or clarifications to the plan that are necessary for acceptance. These are as follows:

1. The manual should be dated.
2. Page 1. We believe this to be your formal quality control plan presented to be reviewed for acceptance in compliance with 30 CFR 11. Section I, Purpose, should be revised to reflect this accurately. The last sentence ~~shall become superfluous.~~
3. Page 19, first line. "Form HPT-1" should be "HPC-1."
4. Page 20, line 16 should read "drawing."
5. Page 59, bottom line should read NIE-STD-105B.
6. Page 73 - The "A" in "AP" was illegible in copy # 10 of the manual.
7. Page 49 - (a) Specify flow rates and filter area to be tested and (b) specify DCF aerosol size and concentrations used in tests.
8. Page 52 - (a) Specify flow rates and filter area to be tested, (b) specify DCF aerosol size and concentrations used in tests, and (c) provide sufficient data to substantiate the upper limits for acceptance.

713-0299-000



GENERAL OFFICES • 3M CENTER • ST. PAUL, MINNESOTA 55101 • TEL. 733-1110

Commercial Tape and Gift Wrap Division

March 29, 1972

0009772

Approval and Testing  
United States Bureau of Mines  
4800 Forbes Avenue  
Pittsburgh, Pennsylvania 15213

Dear Sir:

We are submitting for approval, the "3M" Brand Respirator No. 8710, under Part II for dusts and mists having an air contamination level not less than 0.05 milligrams per cubic meter or air contamination level not less than 2 million particles per cubic foot. Accompanying this letter are the check for \$250, the test data, two cartons (30) of respirators, user's instruction sheet, the O.C. Manual and the respirator drawings. #982629

The design of this respirator was chosen to give the wearer maximum comfort, which includes light weight, a comfortable face seal with low headband tension, the ability to speak and be understood, and the ability to wear most kinds of eye protection. This design was also chosen to furnish the user with a low cost single use respirator.

The respirator is constructed of a polyester fiber inner support shell covered with a polypropylene filter media. The filter media is sealed to the polyester fiber inner support shell. #8710-C-3 adjustable headbands, an aluminum nose clip and a 3-1/2" by 1/2" strip of polyurethane foam are sealed to the respirator as shown on drawing No. 12-2618-0003-f.

To the best of our knowledge, all parts of the respirator that come in contact with the wearer's body, mainly the edge seal and elastic headband are of a non-irritating composition. This has been confirmed by the skin irritation studies performed on the edge seal and the elastic headband by an independent testing firm.

The complete respirator was tested in accordance with Sub Part K, Paragraphs 11.140-5 Silica Dust Test for Single Use Respirators, and 11.140-7 Silica Mist Test. The No. 8710 Respirator passes these tests and meets the airflow resistance requirements of Paragraph 11.140-9 as shown in the attached tables I, IA and II. The chambers particle generation equipment and test apparatus have been built so they produce the test parameters described in Paragraphs 11.140-5 and 11.140-7.

Table III shows the results of the qualitative coal dust fit tests and Table IV shows the results of the headband even and uniform tension test.

Very truly yours,

Check No. [redacted]  
[redacted] received 3-29-72  
JEC

J. E. Corbin  
James E. Corbin  
Project Manager  
Occupational Protection Products

JEC/jw

MINNESOTA MINING AND MANUFACTURING COMPANY

Border, Solid Block, approximately 1/16-inch (8 pt.)

# PERMISSIBLE

RESPIRATOR  
FOR DUSTS

Type of  
Respirator



Schedule  
and Serial  
Number of  
Approval

**APPROVAL NO. 21C-132**

PERMISSIBLE:  
and  
Type of  
Respirator:  
24-30 pt.  
Gothic Bold  
Condensed

Name and  
Address of  
Applicant

ISSUED TO  
**MINNESOTA MINING AND MANUFACTURING COMPANY**  
**St. Paul, Minnesota, U.S.A.**

APPROVAL NO:  
24-30 pt.  
Gothic Bold  
Condensed

ISSUED TO:  
34 pt. Sans-Serif  
Medium

NAME: 24-30 pt.  
Gothic Bold Cond.  
Address: 24-30 pt.  
Roman Serif Bold

The approved assembly consists of **21C-21C-132** respirator.

### LIMITATIONS

Approved for respiratory protection against  
pneumoconiosis and fibrosis producing dusts.

Tests:  
14 point  
Sans-Serif  
Medium  
Noseclip set  
to 7-3/8 inch  
(may be set narrower  
or wider to fit space  
available for  
approval label)

### CAUTION

This respirator removes only dispersoids from the  
air. It gives no protection against gases, vapors, or  
oxygen deficiency.  
Follow the manufacturer's instructions for fitting  
the respirator to the face.  
Discard and replace the respirator if it becomes  
damaged or breathing resistance is excessive.

H. 76 999, B

Specifications for preparation of Approval Label.

3-30-72

coal dust tests using various respirators

Chamber Data

Test No. \_\_\_\_\_  
Material Coal Dust  
Ventilation 1 min. day  
Pulley Dia. 3/4"  
Fan "H" YES  
Cyclone "ID" No  
Ejector Ed. 6" dia

Sampling Devices

Make UNICO  
Rate 2 lpm  
Tubing Tygon-K-360  
Length 28"  
Float Setting 7 lpm  
Sample Filter No. \_\_\_\_\_  
Cond. Filter No. \_\_\_\_\_

Respirator 3M DuPonts #4 Filter Type Thin dust, 3-20-72

Exercise	Time		Remarks
	0-15 min.	15-30 min.	
Cough; nod head, turn head side to side (3)		<input checked="" type="checkbox"/>	
Smile (1-1/2)			
Frown (1-1/2)			
Recite alphabet (3)			
Talk (3)			
Breathe, shallow and deep (3)			

Facepiece conc. \_\_\_\_\_ mg. Chamber conc. \_\_\_\_\_ mg. % Leakage \_\_\_\_\_

Remarks  
very good  
no mouth leak

Test Subject Steen  
Observer \_\_\_\_\_  
Date 3-30-72

Pre-Approval 12-28-71

coal dust tests using various respirators

Chamber Data

Test No. \_\_\_\_\_  
Material Coal Dust  
Ventilation 1 min. 100%  
Puffing Dia. 3 1/2"  
Fan Size Yes  
Cyclone No. No.  
Ejector Hd. 6" B.O.

Sampling Devices

Make UNICY  
Rate 1/2 liter  
Tubing 1/4" ID - R-360  
Length 28"  
Float Setting 1/2 liter  
Sample Filter No. \_\_\_\_\_  
Cond. Filter No. \_\_\_\_\_

Respirator 3M Respirator Filter Type Other Dynalene Unit

Exercise	Time		Remarks
	0-15 min.	15-30 min.	
Cough, nod head, turn head side to side (3)	✓	✓	
Smile (1-1/2)	✓		
Frown (1-1/2)	✓		
Recite alphabet (3)	✓		
Talk (3)	✓		
Breaths, shallow and deep (3)	✓		

Over

Completed 9:30 am

Respirator conc. \_\_\_\_\_ Chamber conc. \_\_\_\_\_ % leakage \_\_\_\_\_

Schultz (Very slight leak left side & neck)

Test Subjects Schultz, Beckitt, Tomp  
Tommy Young Good (no visible leakage)

Observer Watson Dynalene 3M

Beckitt, Young Good (no visible leakage) Date: 12-29-71

Our Reference: TN00159  
213-259-104

October 11, 1979

Mr. Donald P. Wilmes  
Occupational Health and Safety  
3-M Company, building 230-B  
3-M Center  
St. Paul, MN 55101

Dear Mr. Wilmes:

With reference to your letter of August 20, 1979, requesting an extension of approval TC-21C-132:

An extension of approval TC-21C-132 is granted to cover changes in manufacturing process for filter material.

Your drawing list for the 8710 respirator dated 6/25/79 applies to this extension of approval.

Your revised quality control plan for the 8710 respirator was reviewed by NIOSH. On the basis of that review, the quality control plan is accepted as part of this extension of approval.

We shall retain several items as record material. All other material will be discarded unless we are otherwise advised by you.

Sincerely yours,

Donald L. Campbell, Ph.D.  
Deputy Branch Chief  
Testing and Certification Branch  
Division of Safety Research  
NIOSH

cc:  
H. Swartz

NEollinger:akr:10/18/79

CONCUR: RS \_\_\_\_\_

QA \_\_\_\_\_

DSR \_\_\_\_\_

# MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
CENTER FOR DISEASE CONTROL  
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

TO : Don Wilmes  
3M

DATE: September 6, 1979

FROM : Chief, Respirator Section, Testing and Certification Branch  
Division of Safety Research

SUBJECT:

The application for extension of the approval of the 8710 (TC-23C-132)  
to cover process change in filter media

was received 8-20-79

Test Material Requested: \_\_\_\_\_

Test Material Received: \_\_\_\_\_

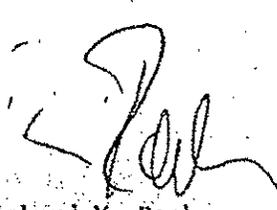
Test Material Received Under Separate Cover: \_\_\_\_\_

A Fee of \$ 300 is Requested.

A Fee of \$ \_\_\_\_\_ was received.

Additional Information Requested: Silica dust and silica mist data pre-test data.

Comments: TNO0159.  
213-299-004



Richard M. Konk

cc:  
R. H. Schutz, TCB  
H. E. Swartz, TCB  
Respirator Section File (2)

Occupational Health and  
Safety Products Division/3M

3M Center  
St. Paul, Minnesota 55101  
612/733 1110

00159

**3M**

August 20, 1979

Mr. Richard Ronk  
NIOSH  
944 Chestnut Ridge Road  
Morgantown, West Virginia 26505

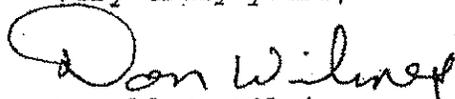
Dear Mr. Ronk:

Submitted for an extension for an approval is the 3M #8710  
dust and mist single use respirator made with process 3  
filter media. This is an extension of approval of TC-21C-132.

Also submitted is the updated quality control plan and parts  
lists reflecting that change. Please advise us of the  
testing fee.

If you have any further questions, please don't hesitate  
to contact me.

Very truly yours,



Donald P. Wilmes  
Occupational Health & Safety  
Products Division  
Bldg. 230-B

DPW/lw

Box of 20  
Respirators

TO: CHIEF RESPIRATOR SEC.		DATE: 10 Oct 1979	
THROUGH: CHIEF, QUALITY ASSURANCE SECTION		INVEST. NO.:	
FROM: QUALITY ASSURANCE SPEC.		TASK NO.: 00159 <i>Port</i>	
NEW APPROVAL <input type="checkbox"/>		EXTENSION <input checked="" type="checkbox"/>	
AUDIT <input type="checkbox"/>		OTHER <input type="checkbox"/>	
MANUFACTURER: 3M		REFERENCE	
SUBJECT: EXTENSION OF TC-210-132		3M LETTER DATED AUG 20, 1979	
QUALITY CONTROL PLANS		ACC <input checked="" type="checkbox"/>	REJ <input type="checkbox"/>
PERFORMANCE TEST		ACC <input type="checkbox"/>	REJ <input type="checkbox"/>
STATUS OF TASK:		COMPLETE <input checked="" type="checkbox"/>	IN PROCESS <input type="checkbox"/>
TERMINATED <input type="checkbox"/>		ACTION REQ. <input type="checkbox"/>	OTHER <input type="checkbox"/>
APPROVAL #	MODEL	P/L DATE	APPROVAL # MODEL P/L DATE
210132	8710	6/25/79	
SUMMARY: APPROVAL INCORPORATES CHANGES MADE NECESSARY BY INTRODUCTION OF A NEW MANUFACTURING PROCESS FOR FILTER MATERIAL			
<i>T. W. [Signature]</i>			
<i>(C. J. [Signature])</i>			

Our Reference: TRO0304

July 18, 1980

Mr. Donald F. Wilson  
Occupational Health and Safety  
T-M Company, Building 230-B  
T-M Center  
St. Paul, MN 55101

Dear Mr. Wilson:

With reference to your letter of January 16, 1980, requesting an extension of approval 10-210-132:

An extension of approval 10-210-132 is granted to cover the use of the 8710 respirator as respiratory protection against dusts having a time weighted average not less than 0.60 milligrams or 2 million particles per cubic foot.

Your drawing list for the 8710 respirator dated June 25, 1979, applies to this extension of approval.

The above respirator cannot be used as protection against asbestos containing dusts and mists or any other carcinogen.

Your revised quality control plan for the 8710 respirator was reviewed by NIOSH. On the basis of that review, the quality control plan is accepted as part of this extension of approval.

The enclosed approval label designs are to be used in preparing the approval labels. Labels T-01250A-C and T-01251A-C shall be prepared for use on each 8710 respirator container.

Designs of your labels must be submitted to NIOSH for approval before printing, and proofs of the printed labels must be submitted to NIOSH for further approval before their final production.

Please submit samples of respirator packaging, bearing all required labels, instructions, and markings, for our approval, before adopting them. Please send us one complete 8710 respirator to be under a part of the record of this extension of approval. We shall retain several other items as additional record material. All other material will be discarded unless we are otherwise advised by you.

Sincerely yours,

cc:  
FIG

BBollinger:nkr:7/18/80

Ralph J. Touch, Jr.  
Acting Chief  
Testing and Certification Branch  
Division of Safety Research

CONCUR: TCB DSR

Enclosure



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
CENTER FOR DISEASE CONTROL

100304  
AUG 22 1980

NATIONAL INSTITUTE FOR OCCUPATIONAL  
SAFETY AND HEALTH  
1600 FISHERS LANE  
ROCKVILLE, MARYLAND 20852

Donald P. Wilmes  
Occupational Health and Safety  
3M Company, Building 230-B  
3M Center  
St. Paul, Minnesota 55101

Dear Mr. Wilmes:

By letter dated July 18, 1980, the 3M Company was informed that extension of approval TC-21C-132 had been granted by MSHA/NIOSH. The fourth paragraph of that letter stated - "The above respirators cannot be used as protection against asbestos containing dusts and mists or any other carcinogen. The purpose of this letter which supercedes the July 18th letter with regard to this issue is intended to express the concerns of the Institute regarding the use of air-purifying respirators against asbestos and other carcinogenic substances and to announce a course of action to address these concerns.

First, the present requirements of 30 CFR, Part 11 preclude MSHA/NIOSH from voiding approval of dust, fume, and mist respirators for use against asbestos and other carcinogenic substances without following appropriate administrative procedures. Section 11.130(i) of Subpart K mentions respirators with replaceable filters, designed as respiratory protection against asbestos-containing dusts and mists. Section 11.130(h) mentions single-use dust respirators designed as respiratory protection against pneumoconiosis and fibrosis-producing dusts, or dusts and mists, including but not limited to aluminum, asbestos, coal, flour, iron ore, and free silica. Thus, the Institute retracts the fourth paragraph in the July 18th letter.

However, we are deeply concerned about the use of dust, fume, and mist respirators, and other air-purifying respirators, against carcinogenic substances. Our concerns are based on two major issues: 1) the ability of the filter media to effectively remove the carcinogenic substance during the entire period of use, and 2) the questionable face fit of at least some dust, fume, and mist respirators, particularly the single-use type. Excessive leakage of a substance such as asbestos into the respirator due to either ineffective filtration or leakage around a poor seal is unacceptable and presents a potentially serious hazard to the wearer. The possibility of the development of lung cancer or mesothelioma, in the case of asbestos exposure, cannot be ignored when both filtration efficiency and adequate face seal are questionable.

On the issue of asbestos, the Institute wishes to state that although asbestos can produce fibrosis, this effect pales in significance in comparison to the known human and animal carcinogenicity of this fibrous material. It is not our position that single-use dust respirators will provide adequate protection against the cancer causing potential of asbestos. In light of the present knowledge concerning the carcinogenicity of asbestos, the listing of asbestos as an example of a "fibrosis-producing dust" in Section 11.130(h) can only be viewed as misleading. In

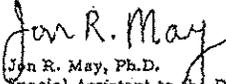
the document entitled "Workplace Exposure to Asbestos: Review and Recommendations," the Institute concluded that "there is no asbestos exposure level below which clinical effects do not occur; significant disease can occur following very short (1 day to three months) exposure periods; worker exposures to asbestos must be controlled to the maximum extent possible; and human occupational exposures to all commercial asbestos fiber types have been associated with high rates of lung cancer and mesothelioma."

The above concerns, focused largely on asbestos, also apply to other carcinogenic substances referenced in 30 CFR, Part 11. Sections 11.130(a)(1) and 11.130(b) refer to dust, fume, and mist respirators, either with replaceable or reusable filters, designed as respiratory protection against dusts such as arsenic, cadmium, and chromium, all of which are suspected human carcinogens. Section 11.130(d) refers to respirators, with replaceable filters, designed as respiratory protection against dust, fumes, and mists of beryllium and radionuclides, which can produce cancer. Based on the facts that the air-purifying components of these devices are tested not against the carcinogens themselves but rather against other materials (i.e., do the filters effectively remove the carcinogenic agent during the entire period of recommended use?) and that the face seals of many of these devices are marginal or inadequate, we are concerned about their use against carcinogenic substances. Respirators with low protection factors may not provide adequate protection against carcinogens.

Accordingly, NIOSH intends to undertake a study of the use of air-purifying respirators against asbestos and other carcinogenic substances in an effort to resolve our concerns. In order to effectively accomplish this goal, it is essential that the respirator manufacturers and others engaged in respirator research provide NIOSH with all relevant data in their possession. We herewith request: 1) all data relating to the efficiency of your devices in removing contaminants, particularly any data involving actual testing against carcinogenic agents; and 2) any data pertaining to calculation of protection factors for your devices. In essence, because of the potential health consequences the Institute believes that the approval of air-purifying respirators for use against asbestos and other carcinogens should be based on their demonstrated effectiveness and not on a policy adopted when the carcinogenicity of certain chemicals and other substances was unrecognized.

Your assistance in this very important assessment is vital. If you have any questions please write or telephone (301) 443-3680.

Sincerely yours,

  
Jon R. May, Ph.D.  
Special Assistant to the Director  
NIOSH, for Testing and Certification

Occupational Health and  
Safety Products Division/3M

3M Center  
St. Paul, Minnesota 55101  
612/733 1110

00304

V

January 16, 1980

3M



Jim Oppold  
NIOSH  
Testing & Certification Branch  
944 Chestnut Ridge Road  
Morgantown, W. Virginia 25505

Dear Dr. Oppold:

Referencing my letter to Mr. Don Campbell dated January 3, 1980 and the reply dated January 15, 1980, we wish to resubmit the 3M 8710 Respirator (TC-21C-L23) for an extension of approval.

We request approval under Subpart X 11.130 (a) Replaceable Filter Dust Respirator and 11.130 (h) Single-Use Dust Respirator. Attached is the test data, penetration and resistance measurements per 11.140-4 and 11.140-5. We are not requesting reusable approval so cleaning and reusable instructions and data do not apply.

There has been no change made to currently approved product so the currently approved design documentation and Q.C. plan applies.

Submitted are 20 of our current production respirators for your testing and evaluation.

We regret the incompleteness of our previous submission, but it was handled in the manner recommended by your staff member prior to submission.

Please advise us of your testing certification fee.

Very truly yours,

D. P. Wilmes  
Occupational Health & Safety  
Products Division  
Bldg. 230-B

DPW/lw

attachment

# MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
CENTER FOR DISEASE CONTROL  
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

TO : Nancy Bollinger

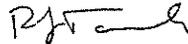
DATE: August 20, 1980

FROM : Acting Chief, TCB  
Division of Safety Research

SUBJECT: Asbestos

Please be advised that according to 30 CFR 11, you may proceed to process those applications we presently have on hold for asbestos.

We will also process any new applications for asbestos and other carcinogens as listed in 30 CFR 11 until we are advised to change our mode of operation.



Ralph J. Touch, Jr.

cc:  
JAOppold  
JRMAY

# MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
CENTER FOR DISEASE CONTROL  
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

TO : Acting Chief, Respirator (Air Purifying)

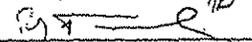
DATE: February 14, 1980

FROM : Chief, Quality Assurance Section, TCB

SUBJECT: Task 00304 3M

Refer: 3M letter dated January 16, 1980

No additional Quality Control documentation is necessary on this request as material received and defined on parts list dated June 25, 1979 remains valid for the 8710 respirator, TC-210-123.

*132 715*  
  
Ralph J. Touch, Jr.

# MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
CENTER FOR DISEASE CONTROL  
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

TO : Chief, Quality Assurance Section, TCR

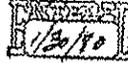
DATE: January 30, 1980

**FILE COPY**

FROM : Chemist, Respirator Section, TCR

SUBJECT: Extension of approval TC-216-132 to include dust and mist for TWA  $0.05$  mg/m<sup>3</sup>

Reference: Don Wline's letter of 1/16/80



The 8710 dust respirator

---

has passed all of our approval testing.

Please keep us informed of your progress on this project.

Part Numbers Affected: 8710 Respirator

*Nancy McGinnis Bellinger*  
Nancy McGinnis Bellinger

cc:  
Our Reference: TN00364





FILE COPY

Our Reference: 2700550



September 25, 1980

Mr. Donald Wilkes  
Quality Assurance  
Occupational Health and Safety  
3-M Company, Building 230-B  
3-M Center  
St. Paul, MN 55101

Dear Mr. Wilkes:

With reference to your letter of September 12, 1980, requesting an extension of approval 10-210-132:

An extension of approval 10-210-132 is granted to cover the use of the 8710 respirator for respiratory protection against mists having a time weighted average not less than 0.05 milligram per cubic meter or 2 billion particles per cubic foot.

Your drawing list for the 8710 respirator dated 6/25/80 applies to this extension of approval.

Your revised quality control plan for the 8710 respirator was reviewed by NIOSH. On the basis of that review, the quality control plan is accepted as part of this extension of approval.

The enclosed approval label designs are to be used in preparing the approval labels. Labels T-012503-C and T-012519-C shall be prepared for use on each 8710 respirator container.

Designs of your labels must be submitted to NIOSH for approval before printing, and proofs of the printed labels must be submitted to NIOSH for further approval before their final production.

Please submit samples of respirator packaging, bearing all required labels, instructions, and markings, for our approval, before adopting them. Please send us one complete 8710 respirator to be made a part of the record of this extension of approval. We shall retain several other items as additional record material. All other material will be discarded unless we are otherwise advised by you.

Sincerely yours,

cc:  
FIG ✓  
R. Justiss  
K. Lee

Edwin J. Fouch, Jr.  
Acting Chief  
Testing and Certification Branch  
Division of Safety Research

NBollinger:nkr:9/26/80  
ENCLOSURE

CONCUR: TCB \_\_\_\_\_

DSR \_\_\_\_\_

Occupational Health and  
Safety Products Division/3M

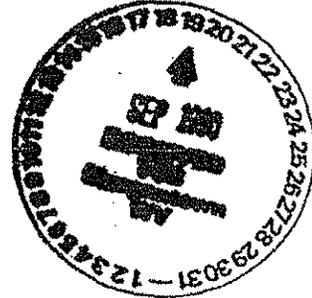
3M Center  
St. Paul, Minnesota 55101  
612/733 1110

*Nancy*  
\* 00550

September 12, 1980

**3M**

Ralph Touch  
NIOSH  
Testing & Certification Branch  
944 Chestnut Ridge Road  
Morgantown, W. Virginia 26505



Subject: Extension of approval TC-21C-132

Dear Mr. Touch,

Submitted for extension of approval, TC-21C-132, is our 8710 Respirator. We wish to extend the approval to include mists having a time-weighted average of not less than .05 mg/m. Attached is the test data from the pre-certification testing and enclosed are test respirators. This product has been in no way modified to accomplish this approval, therefore, there are no changes in the Quality Control plan or documentation. Please advise of the fee.

If you have any further questions, please don't hesitate to contact me.

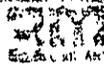
Very truly yours,

A handwritten signature in cursive script that reads "D. P. Wilmes".

D. P. Wilmes  
Occupational Health & Safety  
Products Division  
Bldg. 230-B

DPW/lw

attachments/enclosures



GENERAL OFFICES • 3M CENTER • SAINT PAUL, MINNESOTA 55101 • TEL. (612) 733-1110

July 23, 1974

Ms. Patricia Gussey  
Testing & Certification Lab  
NIOSH  
Morgantown, W. Va. 26505

Dear Ms. Gussey;

~~Being submitted for extension of approval of TC-21C-132 is our newly designed No.8710 Respirator. This product has been tested and found in compliance of the criteria in 30 CFR 11.~~

Attached is our DOP penetration and  $\Delta P$  vs silica dust penetration and  $\Delta P$  correlation data. We wish to use this quick Q.C. test as our release test. Generally, our existing Q.C. Manual applies with the exception of revised test limits. These modifications are being sent to you.

Please advise us of your testing fee.

Sincerely,

Donald P. Wilmes  
Quality Assurance  
Occ. Health & Safety Prods.

DPW/jw

MINNESOTA MINING AND MANUFACTURING COMPANY



# MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
CENTER FOR DISEASE CONTROL  
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

TO : Mr. Donald Wilmes, Quality Assurance  
Occupational Health and Safety  
3-M Company, Building 230-B  
3-M Center  
St. Paul, MN 55101

DATE: September 23, 1980

FROM : Acting Chief, Respirator Section (Air Purifying), TCB  
Division of Safety Research

SUBJECT: Extension of Approval Application - TC-21C-132

The application for extension of approval application 8710 respirator  
for protection against mists

was received 9/12/80

Test Material Requested: \_\_\_\_\_

Test Material Received: 9/12/80

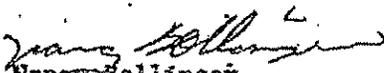
Test Material Received Under Separate Cover: \_\_\_\_\_

A Fee of \$300.00 is Requested.

A Fee of \_\_\_\_\_ was Received.

Additional Information Requested:

Comments: TNO0550 ✓

  
Nancy Bollinger

cc:  
Chief, TCB  
Chief, FIG, TCB  
Respirator Section File (2)

TN00550  
September 25, 1980  
Nancy Bollinger

3M's Request for Extension of Approval to Add Mist to TC-21C-132

Background

On September 12, 1980, 3M requested an extension of approval TC-21C-132 be granted to include mists having a Permissible Exposure Level (measured as a time weighed average) less than  $0.05 \text{ mg/m}^3$ . This respirator has been previously approved as respiratory protection against pneumoconiosis and fibrosis producing dusts and mists and against dusts with a TWA not less than  $0.05 \text{ mg/m}^3$ .

Test

Silica Mist 11.140-7

1. Resistances to air flow will be measured before and after each test (11.140-9).
2. Three completely assembled respirators will be tested at a continuous airflow rate of 32 lpm.
3. The test suspension will be between 20 to  $25 \text{ mg/m}^3$  of silica mist (weighed as silica dust).
4. Mist is produced by spraying an aqueous suspension of flint through a 270-mesh sieve.
5. The total amount of leakage shall not exceed 2.5 mg (weighed as silica dust).

Results

Test #/Mask	Inhalation Resistance (mm of H <sub>2</sub> O)				Exhalation Resistance (mm of H <sub>2</sub> O)				Chamber Concentration (mg/m <sup>3</sup> )	Leakage (mg)		Overall Results	Test Type
	Maximum Allowable	Test Results Initial	Test Results Final	Test Results	Maximum Allowable	Test Results Initial	Test Results Final	Maximum Allowable		Test Results (mg)			
264/A	20	40	6.4	14.0	20	4.8	14.0	23.0	2.5 mg	0.7	PASS	Silica Mist	
264/B	20	40	6.4	13.2	20	4.8	13.5	23.0	2.5 mg	0.6	PASS	Silica Mist	
265/A	20	40	6.4	13.2	20	4.3	10.7	24.2	2.5 mg	0.6	PASS	Silica Mist	

Recommendations

The 8710, TC-21C-132, respirator has passed our approval test for mists. Therefore, I recommend an extension be granted.

References:

1. Part 11.
2. Application letter, D. P. Wilmes, 9/12/80
3. QA Acceptance, Robert Justiss, September 26, 1980

EXTENSION OF APPROVAL APPLICATION FORM

Project Number TNDP 550

Company 3M

Extension of approval made 9/12/80 to cover the use of the 8710 on respiratory protection against mists

Parts List N/A Req. 1 1 Recd. 1 1  
 Pre-test Data Req. 1 1 Recd. 9/12/80  
 Fee Set \$300 Req. 9/12/80 Recd. 1 1  
 Record Cards Filed 9/22/80 Log Book Entry. 9, p - 9/22/80

Respirator models and approval numbers affected:

TC-21C-132

Required Performance Tests for this Application

- |                   |  |                                 |                               |
|-------------------|--|---------------------------------|-------------------------------|
| 1) <u>St mist</u> | Passed <input checked="" type="checkbox"/> | Failed <input type="checkbox"/> | Date <u>9-24-80</u>           |
| 2) <u>QA</u>      | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date <input type="checkbox"/> |
| 3)                | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date <input type="checkbox"/> |
| 4)                | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date <input type="checkbox"/> |
| 5)                | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date <input type="checkbox"/> |
| 6)                | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date <input type="checkbox"/> |
| 7)                | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date <input type="checkbox"/> |
| 8)                | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date <input type="checkbox"/> |
| 9)                | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date <input type="checkbox"/> |
| 10)               | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date <input type="checkbox"/> |
| 11)               | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date <input type="checkbox"/> |
| 12)               | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date <input type="checkbox"/> |
| 13)               | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date <input type="checkbox"/> |
| 14)               | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date <input type="checkbox"/> |

*Phil Annett revision  
9/25 - 3:00*

TNO0550  
September 25, 1980  
Nancy Bollinger

3M's Request for Extension of Approval to Add Mist to TC-21C-132

Background

On September 12, 1980, 3M requested an extension of approval TC-21C-132 be granted to include mists having a Permissible Exposure Level (measured as a time weighed average) less than 0.05 mg/m<sup>3</sup>. This respirator has been previously approved as respiratory protection against pneumoconiosis and fibrosis producing dusts and mists and against dusts with a TWA not less than 0.05 mg/m<sup>3</sup>.

Test

Silica Mist 11.140-7

1. Resistances to air flow will be measured before and after each test (11.140-9).
2. Three completely assembled respirators will be tested at a continuous airflow rate of 32 lpm.
3. The test suspension will be between 20 to 25 mg/m<sup>3</sup> of silica mist (weighed as silica dust).
4. Mist is produced by spraying an aqueous suspension of flint through a 270-mesh sieve.
5. The total amount of leakage shall not exceed 2.5 mg (weighed as silica dust).

Results

Test #/Mask	Inhalation Resistance (mm of H <sub>2</sub> O)				Exhalation Resistance (mm of H <sub>2</sub> O)				Chamber Concentration (mg/m <sup>3</sup> )	Leakage (mg)		Overall Results	Test Type
	Maximum Allowable	Test Results Initial	Test Results Final	Test Results	Maximum Allowable	Test Results Initial	Test Results Final	Maximum Allowable		Test Results (mg)			
264/A	20	40	6.4	14.0	20	4.8	14.0	23.0	2.5 mg	0.7	PASS	Silica Mist	
264/B	20	40	6.4	13.2	20	4.8	13.5	23.0	2.5 mg	0.6	PASS	Silica Mist	
265/A	20	40	6.4	13.2	20	4.3	10.7	24.2	2.5 mg	0.6	PASS	Silica Mist	

Recommendations:

The 8710, TC-21C-132, respirator has passed our approval test for mists. Therefore, I recommend an extension be granted.

References:

1. Part 11.
2. Application letter, D. P. Wilmes, 9/12/80
3. QA Acceptance, Robert Justiss, September 25, 1980

*400 problems according to review committee*

3M Occupational Health and  
Environmental Safety Division  
3M Center  
St. Paul, Minnesota 55144-1000  
612/733 1110

RECEIVED  
94 MAR 18 AID: 31

NIOSH, CQAB

3M

March 18, 1994

Chief  
Certification and Quality Assurance Branch  
NIOSH, DSR, Mail Stop 1138  
944 Chestnut Ridge Road  
Morgantown, WV 26505-2888

TN: 07015

SEC: AP AS AP/AS

TYPE (Circle): N E O U

The enclosed submission requests approval of a minor revision to added an alternate print text to the 8710 respirator (TC-21C-132). The respirator with this alternate print text will be sold as the 8710 SIDOR version. The submission also updates minor revisions to the 8710 and 6983 respirators (TC-21C-132) which have occurred since the respirators were last approved under Task Number TN-05926.

*Robert J. Briggs*  
Robert J. Briggs  
3M/OH&ES  
Bldg. 260-3A-07

Standard Application Form for the Approval of Respirators

RECEIVED

A. Manufacturer 3M Company Telephone 612-733-1383  
 Address OH&ES Division, Bldg. 260-3A-07  
94 MAR 18 80 7 31 St. Paul, MN 55144  
 Authorized Representative Mr. D.P. Wilmes

Our alternate authorized representative is:  
 Name Dr. D.W. Gosselink Telephone 612-733-3336  
 Address OH&ES Division, Bldg. 260-3A-07  
St. Paul, MN 55144

B. Manufacturing Facilities different from item A.  
 If same as A. above, state "Same as A."  
 Name 3M Valley Plant 3M Aberdeen  
 Address 600 E. Meigs St. 610 N. Co. Rd. 19  
Valley, NE 68064 Aberdeen, SD 57401-3396

C. Authorized representative if different from A. above.  
 The authorized representative must be located in the USA.  
 If same as A. above, state "Same as A."  
 Name Robert J. Briggs Telephone 612-736-2601  
 Address OH&ES Division, Bldg. 260-3A-07  
St. Paul, MN 55144

D. Applicant assigned reference number 8710-1  
 This number must be duplicated on the payment check and sample container.

E. Date of request March 18, 1994

F. Type of request  New  Extension  Minor revision

G. Type of product  Air-Purifying  Atmosphere Supplying  Comb.

H. Description of respirator: Check all that apply. Complete the attachment labeled "Section H. Current Submittal Summary." Add additional sheets, as necessary, to fully describe the respirator(s) and attach to Section H.

General:  Prototype  Regular production unit(RPU)

Air Purifying: Model Number 8710 & 6983  
 High Efficiency Particulate Air-Purifying (HEPA)  
 Standard Efficiency Particulate Air-Purifying  
 Single Use Filter  Replaceable or Reusable  
 Vapor & Gas Removing  
 Cartridge:  Canister  
 Non-Powered  Powered (PAPR)  
 Mouth Piece  Quarter Mask  
 Half Mask  Full Facepiece  
 Hood  Helmet



J. List all tests which have been performed

EOSL indicator  yes  no


Attach copies of actual test data and label as "Section J. Test Data." Be sure to include EOSL data if applicable.

K. Attach appropriate drawings and parts list labeled as "Section K. Drawings and Parts Lists."

The parts list for the 3M 8710 and 6983 respirators are attached as "Section K. Drawings and Parts Lists." The respirator drawings have not changed and are not included. Refer to Task Number TN-05926 for latest approved respirator drawings.

L. Attach appropriate quality assurance documentation and label as "Section L. Quality Assurance Documentation".

Our Quality Assurance Manual has been previously submitted and approved by NIOSH. Refer to Task Number TN-06128.1 for the latest approved revisions to our Quality Manual. Our Product and Release Specifications, RS-F-8710 for the 8710 respirator and RS-E-6983 for the 8710 respirator are attached as "Section L. Quality Assurance Documentation". The visual print text reference for the 8710 SIDOR version is also attached as "Section L. Quality Assurance Documentation".

M. Submit a sufficient number of test samples. Include the applicant assigned reference number on the package. Refer to the attached "Respirator Testing Selection Guide."

This is a minor submission, no samples are included.

N. List all associated user's, maintenance, instruction manuals, and any other pertinent literature. Attach copies and label as "Section N. User Instructions. The user instructions will not change and are not included.


O. Attach appropriate labels and label as "Section O. Labels" The approval labels will not change and are not included.

P. Attach a check, made payable to NIOSH, for payment of the approval work. Be sure to include the applicant assigned reference number on the check. This is a minor submission, no fees are included.

I certify the information contained in this application is correct and that if approved, no further changes will be made to the product(s) without prior written approval of the National Institute for Occupational Safety and Health, Certification and Quality Assurance Branch.



Signature of Authorized Representative

D. P. Wilmes 3M/OH&ES Bldg. 260-3A-07



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

NIOSH Reference: TN-07015  
Mfg. Reference: 8710-1

Centers for Disease Control  
and Prevention (CDC)  
National Institute for Occupational  
Safety and Health - ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505-2888

May 2, 1994

Mr. Donald Wilmes  
3M Company  
3M Center, Building 260-3-02  
St. Paul, Minnesota 55144

Dear Mr. Wilmes:

The National Institute for Occupational Safety and Health (NIOSH) has reviewed your request dated March 18, 1994. This request was for a minor revision to the 8710 respirator adding the alternate name of 8710 SIDOR version. Other minor revisions to the 8710 and the 6983 respirators that effect the quality assurance documentation are outlined in the Current Submittal Summary, enclosed. Approval is granted to cover these changes.

The drawings and parts lists referenced in this request apply to this approval.

Your quality control documentation referenced in this request was reviewed by NIOSH. On the basis of that review, this documentation is accepted as part of this minor revision.

All documentation will be retained by NIOSH and incorporated into our files.

Since these changes do not affect the approval labels, no approval label drafts are included.

Sincerely yours,

William A. Hoffman, Chief  
Air Purifying Respirator Section  
Certification and Quality  
Assurance Branch  
Division of Safety Research

Enclosure

TO: FILE		May 2, 1994	
THROUGH:		TASK NO.: 07015	
FROM: Q.A. SPECIALIST		MFR. REF. NO.: 8710-1	
INITIALS: <i>rla</i>			
New Approval:	Extension:	Min. Rev: X	Other:
MANUFACTURER: MMH		REFERENCE:	
SUBJECT: MINOR REVS TO 8710--INCLUDES VENEZUELAN			
QUALITY CONTROL PLANS	ACC	X	REJ
TERMINATED		ACTION REQ.	OTHER
P/L DATE			
SUMMARY:			

Certification and Quality Assurance Branch  
Accountability Tracking Sheet

Company 3M Nature of request minor

Type of request: New App     Ext     Min Rev X  
Problem Ext     Corr test     Prototype test    

Item	Int	Date
1. Received by Branch-----	WAT	3/18/94
2. Received by QA-----	WAT	3/22/94
Acceptable <u>X</u> Addl info: Needed <u>   </u> Received <u>   </u>		
3. Received by Section-----	WAT	3/22/94
Acceptable <u>   </u> Addl info: Needed <u>   </u> Received <u>   </u>		
4. Fee letter to Fin prepared-----	WAT	3/22/94
5. Fee letter to Fin sent-----	WAT	3/22/94
6. Samples received-----	WAT	3/22/94
7. Testing request sent to Technician-----	WAT	3/22/94
8. Correspondences (continued on back):		

Contact	Phone/ Letter	Purpose of contact (Addl space on back)	Int	Date

Item	Int	Date
9. Testing completed, review of results & report-----	WAT	3/22/94
Met Requirements <u>   </u> Fails <u>   </u> Not Applicable <u>   </u>		
10. Review completed by QA-----	WAT	3/22/94
11. Preparation of Approval/Failure documentation-----	WAT	4/26/94
12. App/Fail doc. to K:\final-----	WAT	4/26/94
13. Added to Certified Equipment List (NEW # only)-----	WAT	5/4/94
14. Typing of documentation completed-----	WAT	5/4/94
14. Final review by Preparer-----	WAT	5/4/94
15. Final review by Peer-----	WAT	5/4/94
16. Email to MSHA (NEW # only)-----	WAT	5/4/94
17. Signature of Branch/Section Chief-----	WAT	5/4/94
18. Completion Date (as shown on final letter)-----	WAT	5/2/94

Original copy to be placed in folder upon completion Track5.WH

*No tests*

**VERIFIED**

Our Reference: TN 03756

June 2, 1987

Mr. Donald Wilmes  
3M Company  
3M Center; Bldg. 260-3-02  
St. Paul, Minnesota 55144

Reference: Your letter of May 22, 1987

Subject: Extension of Approval TC-21C-132

Dear Mr. Wilmes:

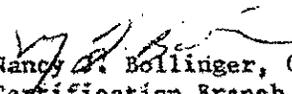
An extension of approval TC-21C-132 is granted to cover the removal of the words "DO NOT USE FOR PAINT SPRAY!" from the information printed on the 8710 and 6983 respirators.

Your drawing lists dated 5/22/87 for the 8710 and 6983 respirators apply to this extension of approval.

Your revised quality control plan for the above respirators was reviewed by NIOSH. On the basis of that review, the quality control plan is accepted as part of this extension of approval.

Please submit samples of respirator packaging, bearing all required labels, instructions, and markings, for our approval, before adopting them. We shall retain several items as record material. All other material will be discarded unless we are otherwise advised by you.

Sincerely yours,

  
Nancy A. Bollinger, Chief  
Certification Branch  
Division of Safety Research

cc:  
Hill  
Justiss  
Coffey

NIOSH:DSR:CB:krc:6-2-87, Doc.2419E

TN 0375L  
2

Occupational Health and  
Safety Products Division/3M

3M Center  
St. Paul, Minnesota 55144-1000  
612/733 1110

May 22, 1987

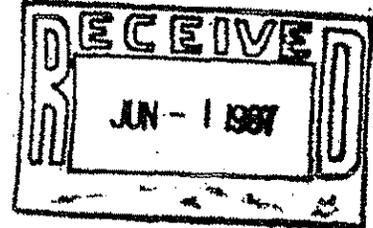
Ms. Nancy Bollinger  
NIOSH  
Certification Lab, Room 16  
944 Chestnut Ridge Road  
Morgantown, WV 26505

**3M**

Dear Ms. Bollinger:

Request Extension of Approval

From: Minnesota Mining & Manufacturing Co.  
OH&SP, Bldg 260-3-02  
3M Center  
St. Paul, MN 55144



Our NIOSH representative is Mr. D. P. Wilmes. His alternate is  
Dr. D. W. Gosselink.

Date of Submission: May 22, 1987

Please notify our representative of the required fees.

This is an air purifying respirator.

This extension applies only to the information printed on the  
respirator. There is no change in performance of the product. After  
consultation with Chris Coffey, we have not provided samples for NIOSH  
testing.

Approval Label will remain TC-21C-132 (March 30, 1987) as shown in the  
enclosed Appendix B.

User instructions are enclosed as Appendix C.

We are seeking extension of the approval TC-21C-132 for the US versions  
of 8710 and 6983. This submission documents change in the information  
printed on the respirator. We are deleting the words "DO NOT USE FOR  
PAINT SPRAY!" from the US versions of 8710 and 6983 approved earlier in  
your letter of May 14, 1987 (TN 03716).

Enclosed as Appendix D are Components lists and Flow Charts for the above respirators.

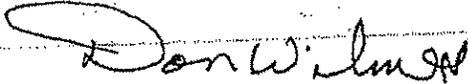
Enclosed as Appendix E are the product drawings for the above respirators.

Enclosed as Appendix F are the Finished Product release specifications for the above respirators.

You have previously approved our general Quality Manual.

This submission was prepared by Mr. E. J. Woodward, who may be reached at 612-733-4935, should you wish to discuss technical details of the submission.

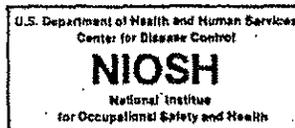
Regards,



D. P. Wilmes  
OH&SP Division / 3M  
Bldg 260-3-02  
3M Center  
St Paul, MN 55144

**PERMISSIBLE**

**RESPIRATOR  
FOR  
DUSTS AND MISTS**



Mine Safety and Health Administration  
National Institute for  
Occupational Safety and Health

**APPROVAL NO. TC-21C-132**

Issued To

**Minnesota Mining and Manufacturing Company  
St. Paul, Minnesota, U.S.A.**

**LIMITATIONS**

Approved for respiratory protection against dusts and mists having a time-weighted average not less than 0.05 milligrams per cubic meter or 2 million particles per cubic foot.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Not for use in atmospheres immediately dangerous to life and health.

Not for use in atmospheres containing toxic gases or vapors.

**CAUTION**

This respirator shall be selected, fitted, used, and maintained in accordance with Mine Safety and Health Administration, Occupational Safety and Health Administration, and other applicable regulations. Follow manufacturer's instructions for discarding the respirator.

**3M CONFIDENTIAL**

**MSHA-NIOSH APPROVAL TC-21C-132  
Issued to Minnesota Mining and Manufacturing Company  
March 30, 1987**

**FOR DUSTS AND MISTS**

The approved assembly consists of the following 3M part numbers: 8710, 6983 (TC-21C-132) respirator.



# 3M

# 8710

## 8710 Dust and Mist Respirator

**IMPORTANT — BEFORE USING RESPIRATOR,  
READ FITTING INSTRUCTIONS  
AND WARNING ON BOX.**



### **WARNING**

This respirator helps protect against certain dusts and mists. Misuse may result in sickness or death. For proper use, see supervisor or box or call 3M: 1-800-247-3941.

**DO NOT USE FOR PAINT SPRAY!**

**FOR DUSTS AND MISTS TC-21C-132, 3M No. 8710.**

NIOSH/MSHA approved  
for dusts and mists  
(including lead)\*

Contents: 20 Respirators

### **Warning:**

1. As with the use of any respiratory device, the wearer must first be trained in the proper use of the product.
2. Before assigning any respirators to be worn, a qualitative or quantitative face fit test must be performed. Refer to OSHA regulations 1910.134 (e) (5).
3. This respirator removes only dusts and mists from the air. It is not designed to be used for protection against fumes, gases, vapors, paint spray operations or in atmospheres containing less than 19.5% oxygen.
4. Do not when concentrations of contaminants are immediately hazardous to life and health, are unknown or when concentrations exceed 10X PEL.
5. Discard and replace respirator if it becomes damaged or breathing resistance becomes excessive.
6. Leave the contaminated area immediately if breathing becomes difficult or if dizziness or other distress occurs.
7. Never alter or modify this device.
8. Use of this or any respirator should be in accordance with applicable safety and health standards, respirator selection tables, or pursuant to the recommendations of an industrial hygienist.
9. Failure to follow all instructions and warnings on the use of this product and/or failure to wear this respirator during all times of exposure, can reduce respirator effectiveness and wearer protection.

**FOR MORE INFORMATION** and assistance on 3M Brand Health and Safety Products, contact your local 3M representative or call OH&SP Technical Service Toll Free, 1-800-243-4630. In Minnesota, call (612) 733-6234. For Sales Assistance contact Toll Free, 1-800-328-1667. In Minnesota call (612) 733-8029. In Canada, contact 3M Canada Inc., P.O. Box 5757, Terminal A, London, Ontario, Canada N6A4T1. (519) 451-2500.

Appendix C-2.1

## 3M CONFIDENTIAL

# 3M

6983

# 6983 Automotive Dust Respirator

**IMPORTANT — BEFORE USING RESPIRATOR,  
READ FITTING INSTRUCTIONS  
AND WARNING ON BOX.**



### **WARNING**

This respirator helps protect against certain dusts and mists. Misuse may result in sickness or death. For proper use, see supervisor or box or call 3M: 1-800-247-3941.

**DO NOT USE FOR PAINT SPRAY!**

FOR DUSTS AND MISTS TC-21C-132, 3M No. 6983

NIOSH/MSHA approved  
for dusts and mists  
(including lead)\*  
Contents: 15 Respirators

### Warning:

1. As with the use of any respiratory device, the wearer must first be trained in the proper use of the product.
2. Before assigning any respirators to be worn, a qualitative or quantitative face fit test must be performed. Refer to OSHA regulations 1910.134 (e) (5).
3. This respirator removes only dusts and mists from the air. It is not designed to be used for protection against fumes, gases, vapors, paint spray operations or in atmospheres containing less than 19.5% oxygen.
4. Do not when concentrations of contaminants are immediately hazardous to life and health, are unknown or when concentrations exceed 10X PEL.
5. Discard and replace respirator if it becomes damaged or breathing resistance becomes excessive.
6. Leave the contaminated area immediately if breathing becomes difficult or if dizziness or other distress occurs.
7. Never alter or modify this device.
8. Use of this or any respirator should be in accordance with applicable safety and health standards, respirator selection tables, or pursuant to the recommendations of an industrial hygienist.
9. Failure to follow all instructions and warnings on the use of this product and/or failure to wear this respirator during all times of exposure, can reduce respirator effectiveness and wearer protection.

FOR MORE INFORMATION and assistance on 3M Brand Health and Safety Products, contact your local 3M representative or call OH&SP Technical Service Toll Free, 1-800-243-4630. In Minnesota, call (612) 733-6234. For Sales Assistance contact Toll Free, 1-800-328-1667. In Minnesota call (612) 733-8029. In Canada, contact 3M Canada Inc., P.O. Box 5757, Terminal A, London, Ontario, Canada N6A4T1. (519) 451-2500.

Appendix C-2.2

## 3M CONFIDENTIAL

## Fitting Instructions To Be Followed Each Time Respirator Is Worn



1. Cup the respirator in your hand, with the nosepiece at your fingertips, allowing the headbands to hang freely below your hand.



2. Position the respirator under your chin with the nosepiece up.



3. Pull the top strap over your head resting it high at the top back of your head. Pull the bottom strap over your head and position it around the neck below the ears.



4. Place your fingertips from both hands at the top of the metal nosepiece.



5. Mold the nose area to the shape of your nose by pushing inward while moving your fingertips down both sides of the nosepiece.



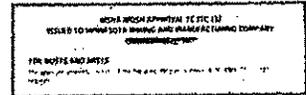
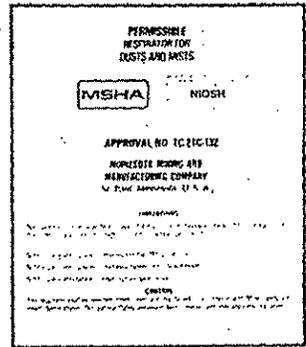
Pinching the nosepiece using one hand may result in less effective respirator performance.

6. The seal of the respirator on the face should be fit-checked prior to each wearing. To check fit, place both hands completely over the respirator and exhale vigorously. If air flows around nose, readjust the nosepiece as described in step 4. If air leaks at the respirator edges, work the straps back along the sides of your head. If you CAN NOT achieve a proper fit DO NOT enter the contaminated area. See your supervisor.

### \*NIOSH/MSHA Approved

I Dusts -- Having a PEL (permissible exposure limit) not less than 0.05 milligrams per cubic meter of air, including but not limited to coal, cotton, cadmium, chromium, lead and manganese; or dusts having a PEL (permissible exposure limit) not less than 2 million particles per cubic foot of air, including but not limited to aluminum, flour, iron ore and free silica, resulting principally from the disintegration of a solid, e.g., dust clouds produced in mining, quarrying, and tunneling, and in dust produced during industrial operations, such as grinding, crushing, and the general processing of minerals and other materials.

II Mists -- Mists of materials having a PEL (permissible exposure limit) not less than 0.05 milligrams per cubic meter or 2 million particles per cubic foot, e.g., mist produced by spray coating with vitreous enamels, chromic acid mist produced during chromium plating, and other mists of materials whose liquid vehicle does not produce harmful gases or vapors.



#### Important Notice

**WARRANTY:** In the event any MUNDLER product should be defective, the user should return the product to the manufacturer for a full refund. The user should not use the product if it is defective. The user should not use the product if it is defective. The user should not use the product if it is defective.

**EXCLUSIONS TO WARRANTY:** THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OF QUALITY, EXCEPT OF TITLE AND AGAINST PATENT INFRINGEMENT.

**LIMITATION OF LIABILITY:** The user should not use the product if it is defective. The user should not use the product if it is defective. The user should not use the product if it is defective.

Occupational Health and Safety Products Division 3M  
220,7W, 3M Center  
St. Paul, MN 55144-1000  
Made in U.S.A.

**3M**

**3M CONFIDENTIAL**

National Institute for Occupational Safety and Health  
Certification and Quality Assurance Branch  
Air Purifying Respirator Section

TEST REPORT

Task Number: TN-07315  
Prepared by: Gary Fletcher  
Date: February 1, 1995  
Manufacturer: 3M  
Item Tested: 8110-1

Background Information:

On December 6, 1994, 3M requested a new approval for the model 8110 dust and mist single-use, disposable respirator (8710JS international model).

Tests:

- A. Silica dust test 11.140-4
- B. ~~Silica mist test 11.140-7~~
- C. Single-use silica dust test 11.140-5
- D. Single-use silica mist test .63c

Results:

See accompanying summary sheets.

Recommendation:

The recommendation is to grant the approval.

References:

1. 30 CFR 11

Our Reference: TM 03715

May 14, 1987

Mr. Donald Wilmes  
3M Company  
3M Center, Bldg. 260-3-02  
St. Paul, Minnesota 55144

Reference: Your letters of March 30 and April 16, 1987

Subject: Extensions of Approvals TC-21C-132 and TC-21C-401

Dear Mr. Wilmes:

Extensions of approvals TC-21C-132 and TC-21C-401 are granted to cover the use of an alternate cover web and the addition of the "Dustman" warning label.

Your drawings lists dated 3/20/87 for the 6710, 6983 (TC-21C-132), 6710, 6710S and 6983 (TC-21C-401) respirators apply to these extensions of approvals.

Your revised quality control plan for the above respirators was reviewed by MCOH. On the basis of that review, the quality control plan is accepted as part of these extensions of approvals.

Please submit samples of respirator packaging, bearing all required labels, instructions, and markings, for our approval, before adopting them. We shall retain several items as record material. All other material will be discarded unless we are otherwise advised by you.

Sincerely yours,

Nancy J. Bollinger, Chief

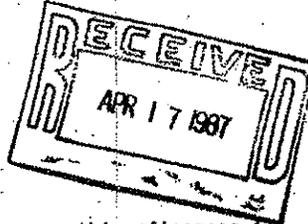
Occupational Health and  
Safety Products Division/3M

3M Center  
St. Paul, Minnesota 55144-1000  
612/733-1110

April 16, 1987

Ms. Nancy Bollinger  
NIOSH  
Certification Lab. Room 16  
944 Chestnut Ridge Road  
Morgantown, WV 26505

**3M**



Dear Ms. Bollinger:

Robert Justiss called Jim Woodward of our QA group this afternoon to discuss our March 30, 1987 submission on 8710 / 6983 (NIOSH Task 03716). ✓

Mr. Justiss asked that we add the numbers (S-41-7500-7070-2-VIS-2 and S-41-7500-7133-8-VIS-2) for the visual standards for printing of the US versions of 8710 (70-0701-7268-2) and 6983 (70-0701-7201-5) to the Components List (Appendix D). Since these visual standards are attributes of the finished product rather than components and are already referenced in the Finished Product Specifications (Appendix F), we see no reason to comply with this request.

Mr. Justiss also asked that we revise this submission to include the newly received Approval Number (TC-21C-401) for the international versions of 8710 and 6983. Since this approval was received by 3M on April 13, and we submitted on March 30, we see no reason to comply with this request.

Regards,

D. P. Wilmes  
OH&SP Division / 3M  
R14A 28A-3-02

TN 03716

Occupational Health and  
Safety Products Division/3M

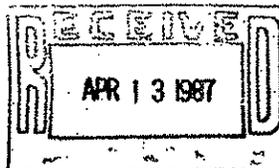
3M Center  
St. Paul, Minnesota 55144-1000  
612/733.1110

March 30, 1987



Ms. Nancy Bollinger  
NIOSH  
Certification Lab, Room 16  
944 Chestnut Ridge Road  
Morgantown, WV 26505

Dear Ms. Bollinger:



Request for Approval and Extension of Approval

From: Minnesota Mining & Manufacturing Co.  
OH&SP, Bldg 260-3-02  
3M Center  
St. Paul, MN 55144

Our NIOSH representative is Mr. D. P. Wilmes. His alternate is Dr. D. W. Gosnell.

Date of Submission: March 30, 1987

Please notify our representative of the required fees.

This is an air purifying respirator.

This respirator has been tested in accordance with 11.140-4, 11.140-5 for penetration only, 11.140-9 for breathing resistance, and Table 9 for pressure tightness. Test data is included as Appendix A.

Approval Labels will remain TC-21C-132 (October 20, 1986) and TC-21C-\_\_\_\_ (\_\_\_\_/\_\_\_\_/\_\_\_\_) as shown in the enclosed Appendix B.

User instructions enclosed as Appendix C are the same as of our February 17, 1986 submission (amended March 6 and March 17) - NIOSH task number 03680.

Samples are enclosed for your evaluation of the US versions of 8710 and 8983 which have been printed with the "Dustman" warning label. We are seeking an extension of TC-21C-132 for this product. We are also

We are also seeking a new approval for the international versions 8710, 8710S, and 6983 per our February 17, 1986 letter. These will not have the warning printed on the respirator. Since the approval we are seeking in the February 17 submission (amended March 6 and March 17) - NIOSH task number 03660 has not yet been granted, we do not know the approval number and have thus not provided samples. However, they would be identical as to materials with the US versions. This includes provision for alternate cover webs as described in the components list. The only difference is that they will be printed only with the product number, "For Dusts and Mists" and the Approval Number. For example, 8710 International would be printed:

3M No. 8710  
For Dusts and Mists  
TC-21C-\_\_\_\_\_

The filter media in all products is identical, so filtration performance should be similar for all products. We are including samples of US versions 8710 and 6983 with the submission, as well as 3M test results for both products.

Enclosed as Appendix D are Components lists and Flow Charts for the above respirators.

Enclosed as Appendix E are the product drawings for the above respirators.

Enclosed as Appendix F are the Finished Product release specifications for the above respirators.

You have previously approved our general Quality Manual.

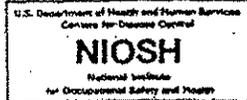
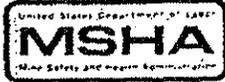
This submission was prepared by Mr. E. J. Woodward, who may be reached at 812-733-4935, should you wish to discuss technical details of the submission.

Regards,



SMITH INTERNATIONAL

**PERMISSIBLE  
RESPIRATOR FOR  
DUSTS AND MISTS**



MINE SAFETY AND HEALTH ADMINISTRATION  
NATIONAL INSTITUTE FOR OCCUPATIONAL  
SAFETY AND HEALTH

**APPROVAL NO. TC-21C-132**

ISSUED TO

**MINNESOTA MINING AND  
MANUFACTURING COMPANY**  
St. Paul, Minnesota, U. S. A.

**LIMITATIONS**

Approved for respiratory protection against dusts and mists having a time-weighted average not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Not for use in atmospheres immediately dangerous to life and health.

Not for use in atmospheres containing toxic gases or vapors.

**CAUTION**

This respirator shall be selected, fitted, used, and maintained in accordance with Mine Safety and Health Administration, Occupational Safety and Health Administration, and other applicable regulations.



Memorandum

Date April 16, 1987  
From Chief, Air Purifying Respirator Section CB  
Division of Safety Research  
Subject Your request for fee and/or additional test material  
To Mr. Donald Wilmes  
3M Company  
3M Center; Bldg. 260-3-02  
St. Paul MN 55144

The application for the alternate cover web in the 8710

was received on 3-30-87

Test Material Requested: \_\_\_\_\_

Test Material Received: 40 8710 and 306983 respirators

Test Material Received Under Separate Cover: \_\_\_\_\_

A Fee of \$ 100.00 is Requested.

A Fee of \$ \_\_\_\_\_ was Received.

Additional Information Requested: \_\_\_\_\_

TNO3716  
Christopher Coffey  
May 14, 1987

Extensions of Approvals TC-21C-132 and TC-21C-401

Background:

On March 30, 1987, 3M requested approval to use an alternate cover web in their 8710, 8710S and 6983 disposable respirators. They also requested approval to add a warning statement to the respirator.

Tests:

A. Silica Dust for Replaceable Filters 11.140-4

1. Resistance to air flow will be measured before and after test (11.140-9).
2. Three completely assembled respirators will be tested at a continuous airflow rate of 32 Lpm.
3. The relative humidity in the chamber will be 20-80 percent and the room temperature will be approximately 25°.
4. The test concentration in the chamber will not be less than 50 nor more than 60 milligrams of silica dust per cubic meter.
5. The particle size distribution of the silica dust will have a geometric mean of 0.4 to 0.6 micrometer, the geometric standard deviation will not exceed 2.
6. The test will last 90 minutes with samples of the concentration taken every 30 minutes.
7. The total amount of leakage shall not exceed 1.5 milligrams.

Results:

See accompanying tables.

Recommendation:

I recommend the extensions of approvals be granted.

References:

# 3M

# 8710

## 8710 Dust and Mist Respirator

**IMPORTANT — BEFORE USING RESPIRATOR,  
READ FITTING INSTRUCTIONS  
AND WARNING ON BOX.**

NIOSH/MSHA approved  
for dusts and mists  
(including asbestos & lead)\*  
Contents: 20 Respirators

3M  
CO  
12/11/11

### Warning:

1. As with the use of any respiratory device, the wearer must first be trained in the proper use of the product.
  2. Before assigning any respirators to be worn, a qualitative or quantitative face fit test must be performed. Refer to OSHA regulations 1910.134 (e) (5).
  3. This respirator removes only dusts and mists from the air. It is not designed to be used for protection against fumes, gases, vapors, paint spray operations or in atmospheres containing less than 19.5% oxygen.
  4. Do not use when concentrations of contaminants are immediately hazardous to life and health, are unknown or when concentrations exceed 10X PEL.
  5. Discard and replace respirator if it becomes damaged or breathing resistance becomes excessive.
  6. Leave the contaminated area immediately if breathing becomes difficult or if dizziness or other distress occurs.
  7. Never alter or modify this device.
  8. Use of this or any respirator should be in accordance with applicable safety and health standards, respirator selection tables, or pursuant to the recommendations of an industrial hygienist.
  9. Failure to follow all instructions and warnings on the use of this product and/or failure to wear this respirator during all times of exposure, can reduce respirator effectiveness and wearer protection.
- FOR MORE INFORMATION and assistance on 3M Brand Health and Safety Products, contact your local 3M representative or call OH&SP Technical Service Toll Free, 1-800-243-4630. In Minnesota, call (612) 733-6234. For Sales Assistance contact Toll Free, 1-800-328-1667. In Minnesota call (612) 733-8029. In Canada, contact 3M Canada Inc., P.O. Box 5757, Terminal A, London, Ontario, Canada N6A4T1, (519) 451-2500.

Appendix C-1.1.2





# 3M

# 8710

## 8710 Dust and Mist Respirator

**IMPORTANT — BEFORE USING RESPIRATOR,  
READ FITTING INSTRUCTIONS  
AND WARNING ON BOX.**



### **WARNING**

This respirator helps protect against certain dusts and mists. Misuse may result in sickness or death. For proper use, see supervisor or box or call 3M: 1-800-247-3941.

**DO NOT USE FOR PAINT SPRAY!**

FOR DUSTS AND MISTS TC-21C-132, 3M No. 8710.

NIOSH/MSHA approved  
for dusts and mists  
(including lead)\*  
Contents: 20 Respirators

### Warning:

1. As with the use of any respiratory device, the wearer must first be trained in the proper use of the product.
  2. Before assigning any respirators to be worn, a qualitative or quantitative face fit test must be performed. Refer to OSHA regulations 1910.134 (e) (5).
  3. This respirator removes only dusts and mists from the air. It is not designed to be used for protection against fumes, gases, vapors, paint spray operations or in atmospheres containing less than 19.5% oxygen.
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Appendix C-2.1

3M  
OH&SP

TERMINAL

# 3M

6983

## 6983 Automotive Dust Respirator

**IMPORTANT — BEFORE USING RESPIRATOR,  
READ FITTING INSTRUCTIONS  
AND WARNING ON BOX.**



### WARNING

This respirator helps protect against certain dusts and mists. Misuse may result in sickness or death. For proper use, see supervisor or box or call 3M: 1-800-247-3941.

**DO NOT USE FOR PAINT SPRAY!**

FOR DUSTS AND MISTS TC-21C-132, 3M No. 6983

NIOSH/MSHA approved  
for dusts and mists  
(including lead)\*

Contents: 15 Respirators

### Warning:

1. As with the use of any respiratory device, the wearer must first be trained in the proper use of the product.
2. Before assigning any respirators to be worn, a qualitative or quantitative face fit test must be performed. Refer to OSHA regulations 1910.134 (e) (5).
3. This respirator removes only dusts and mists from the air. It is not designed to be used for protection against fumes, gases, vapors, paint spray operations or in atmospheres containing less than 19.5% oxygen.
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6. Leave the contaminated area immediately if breathing becomes difficult or if dizziness or other distress occurs.
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9. Failure to follow all instructions and warnings on the use of this product and/or failure to wear this respirator during all times of exposure, can reduce respirator effectiveness and wearer protection.

FOR MORE INFORMATION and assistance on 3M Brand Health and Safety Products, contact your local 3M representative or call OH&SP Technical Service Toll Free, 1-800-243-4630. In Minnesota, call (612) 733-6234. For Sales Assistance contact Toll Free, 1-800-328-1667. In Minnesota call (612) 733-8029. In Canada, contact 3M Canada Inc., P.O. Box 5767, Terminal A, London, Ontario, Canada N6A4T1, (519) 451-2500.

Appendix C-2.2

3M  
O  
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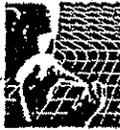
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## Fitting Instructions To Be Followed Each Time Respirator Is Worn



1. Cup the respirator in your hand, with the nosepiece at your fingertips, allowing the headbands to hang freely below your hand.



2. Position the respirator under your chin with the nosepiece up.



3. Pull the top strap over your head resting it high at the top back of your head. Pull the bottom strap over your head and position it around the neck below the ears.



4. Place your fingertips from both hands at the top of the metal nosepiece.



5. Mold the nose area to the shape of your nose by pushing inward while moving your fingertips down both sides of the nosepiece.



Pinching the nosepiece using one hand may result in less effective respirator performance.



6. The seal of the respirator on the face should be fit-checked prior to each wearing. To check fit, place both hands completely over the respirator and exhale vigorously. If air flows around nose, readjust the nosepiece as described in step 4. If air leaks at the respirator edges, work the straps back along the sides of your head. If you CAN NOT achieve a proper fit DO NOT enter the contaminated area. See your supervisor.

### \*NIOSH/MSHA Approved

I. Dusts—Having a PEL (permissible exposure limit) not less than 0.05 milligrams per cubic meter of air, including but not limited to coal, cotton, cadmium, chromium, lead and manganese; or dusts having a PEL (permissible exposure limit) not less than 2 million particles per cubic foot of air, including but not limited to aluminum, flour, iron ore and free silica, resulting principally from the disintegration of a solid, e.g., dust clouds produced in tanning, quarrying, and tunneling, and in dust produced during industrial operations, such as grinding, crushing, and the general processing of minerals and other materials.

II. Mists — Mists of materials having a PEL (permissible exposure limit) not less than 0.05 milligrams per cubic meter or 2 million particles per cubic foot, e.g., mist produced by spray coating with vitreous enamels, chromic acid mist produced during chromium plating, and other mists of materials whose liquid vehicle does not produce harmful gases or vapors.

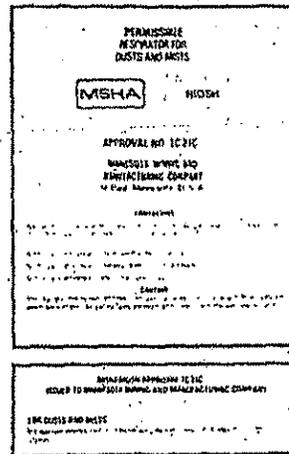
III. Asbestos containing dusts & mists.

#### Important Notice

**WARRANTY:** 3M Corporation warrants that the respirator is designed to protect against the hazards of the contaminants to which it is intended to be used. The respirator is not intended to protect against the hazards of other contaminants. The respirator is not intended to protect against the hazards of other contaminants. The respirator is not intended to protect against the hazards of other contaminants.

**EXCLUSIONS TO WARRANTY:** THIS WARRANTY IS EXCLUSIVE AND IS RELIED UPON BY ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OF QUALITY, EXCEPT OF TITLE AND AGAINST PATENT INFRINGEMENT.

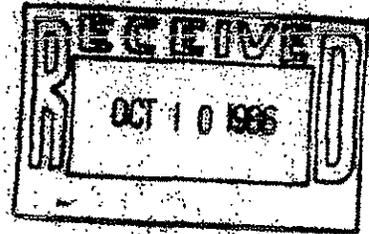
**LIMITATION OF LIABILITY:** 3M Corporation, its subsidiaries, agents, and representatives, shall not be liable for any damages, including consequential damages, arising out of the use of the respirator. THE REMEDIES SET FORTH HEREIN ARE EXCLUSIVE.



3M Corp.  
St. Paul, Minnesota 55134-1000  
612/733-1110

TN I-03495  
— 2

October 8, 1986



Nancy Bollinger  
NIOSH  
Testing & Certification Laboratory  
944 Chestnut Ridge Road  
Morgantown, WV 26505

Subject: Removal of Asbestos Approval for the following Non High Efficiency Products

Dear Ms. Bollinger:

We wish to remove asbestos approval for the following respirators:

TC-210-132

8710, 8590, 6983

our NIOSH representative is Mr. D. P. Wilkes. His alternate is Mr. D. W. Gosselink.

NIOSH to notify our NIOSH representative of required fee.

Ms. Nancy Bollinger

NIOSH

Page 2

Respirator systems involved in this request are air purifying respirators.

Approval label draft

Appendix B

Attached

User instructions & packaging

Appendix C

Attached

Thank you for your assistance.

Sincerely,



Donald E. Wilmes

NIOSH Division

Building 260-3A-02

DPW:jak

U-1005

Our Reference: 1403405

October 20, 1986

Mr. Donald F. Wilmer  
3M Company  
3M Center, Bldg. 260-2-2  
St. Paul, Minnesota 55144

Reference: Your letter of October 8, 1986

Subject: Extensions of Approvals

Dear Mr. Wilmer:

Extensions of approvals as per the enclosed list are granted to cover the removal of asbestos containing dusts and mists.

Your revised quality control plan for the enclosed list of respirators was reviewed by NIOSH. On the basis of that review, the quality control plan is accepted as part of these extensions of approvals.

The enclosed approval label designs are to be used in preparing the approval label.

Designs of your labels must be submitted to NIOSH for approval before printing, and proofs of the printed labels must be submitted to NIOSH for further approval before their final production.

Please submit samples of respirator packaging, bearing all required labels, instructions, and markings, for our approval, before adopting them. We shall retain several items as record material. All other material will be discarded unless we are otherwise advised by you.

Please submit final drafts of all your instruction manuals to NIOSH for approval before printing. ~~\_\_\_\_\_~~ and the 8654 and 8520 (TC-210-132) are not approved by NSMA/NIOSH. Please submit the necessary documentation so that extensions of approvals may be granted for these models.

Sincerely yours,

Nancy J. Bollinger, Chief  
Certification Branch  
Division of Safety Research

17112

October 14, 1988

Mr. Gerald L. Jones  
Company  
Center, 2110  
St. Paul, Minnesota 55108

Dear Mr. Jones:

The Certification Branch, Division of Safety Research, has received the following application for the NIOSH certification program:

Date of Application: October 5, 1988

Subject of Application: Renewal of Asbestos Approval for Non-high Efficiency Products

Task Number Assigned: 1-08-95

<u>ITEM</u>	<u>PROBABLE</u>	<u>RECEIVED</u>	<u>IF/AS INCOMPLETE</u>
1) Application Form, NIOSH Form 100-101	2 Copies	X	
2) Documentation of: <ul style="list-style-type: none"> <li>Classification of Device</li> <li>New, Revised, or Retired</li> <li>Material Labels Attached</li> <li>Form 100-101 - Explained</li> <li>Site Attached - Explained</li> <li>Function Attached - Explained</li> </ul>	Yes	X	
3) Pre-submission Data: <ul style="list-style-type: none"> <li>Test Data</li> <li>2/ OSHA II reference</li> </ul>	Yes if New or Revised, 2 Copies		
4) Label Drafts	Yes if New or Revised, 1 Copy	X	
5) User Instructions	Yes if New or Revised, 2 Copies	X	X
6) Test Samples	Yes if New or Revised		
7) Fees			

ITEM

- |  |                          |       |       |
|--|--------------------------|-------|-------|
| 8) Parts Lists Provided<br>for the models<br>representing variations<br>of certified models  | Yes,<br>1 Copy           | _____ | _____ |
| 9) Parts Lists Included:<br>Drawing Number & Revision<br>Part Number if Different<br>Classification of Defect<br>& Revision Level<br>Specification & Revision Level<br>Title of Part/Drawing | Yes                      | _____ | _____ |
| 10) Engineering Documents:<br>Engineering Drawings<br>Classification of Defect<br>Specification  | Yes,<br>1 Copy           | _____ | _____ |
| See 1904 letters for minimal engineering document requirements   |                          |       |       |
| 11) Quality Assurance Manual<br>and/or QA Plan   | Yes if New<br>or Revised | _____ | _____ |

Attach comments on variations made on the attached copy of your application letter dated October 2, 1984.

On the basis of the incomplete portion of the above items we cannot process your application. We will hold the project open for 30 days during which time you may furnish the information needed. If no response is received at the end of this period the project will be terminated and all material returned.

Please advise if I may be of further service.

Sincerely yours,

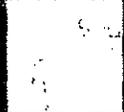
Nancy J. Hollinger, Chief  
Certification Branch  
Division of Safety Research

cc:  
Coffey  
Justin  
Terry  
Powell  
Bill

8560/8710\*

3M

### Simple to put on



1. Before wearing, prestretch each strap by grasping and pulling the strap between both hands at 1.2 inch intervals around the entire length of the strap.



2. Cup respirator in hand, with nosepiece at fingertips, allowing headbands to hang freely below hand.



3. Cup respirator under chin with nosepiece up. Hold firmly to the face.



4. Pull top band over head and position at top back of head. Pull bottom band over head and position around neck below ears.



5. Using both hands, mold metal nosepiece to shape of nose.



6. To check fit, cup both hands over respirator and exhale vigorously. If air flows around nose, tighten nosepiece. If air leaks at respirator edges, work straps back along the side of the head.

If you cannot achieve a proper fit do not enter contaminated area. See your supervisor.

### Warning:

- 1) This respirator removes only dusts and mists from the air. It is not designed to be used for protection against fumes, gases, vapors, paint spray operations or in atmospheres containing less than 19.5% oxygen.
- 2) Do not use when concentrations of contaminants are immediately hazardous to life or health or when concentrations exceed 10X PEL.
- 3) Discard and replace respirator if it becomes damaged or breathing resistance becomes excessive.
- 4) Leave the contaminated area immediately if breathing becomes difficult or if dizziness or other distress occurs.
- 5) Never alter or modify this device.
- 6) Use of this or any respirator should be in accordance with applicable safety and health standards, respirator selection

tables, or pursuant to the recommendations of an Industrial Hygienist.

7) Failure to follow all instructions and warnings on the use of this product and/or wear this respirator during all times of exposure can reduce respirator effectiveness and wearer protection.

FOR MORE INFORMATION and assistance on 3M Brand Health and Safety Products, contact your local 3M representative or call OHS/SP Technical Service toll free, 1-800-243-4630. In Minnesota call (612) 733-6234. In Canada contact 3M Canada Inc. P.O. Box 5757, Toronto, Ontario, Canada M2R4A7. (519) 431-2500.

NOTE: Before assigning any respirators to be worn, a qualitative or quantitative fit test must be performed. Refer to OSHA regulations 1910.134 (e) (5).

### NIOSH/MSHA approved for dusts and mists

**CLEAR VISION**  
Low profile design lets you see where you are going, what you are doing. Easily wear glasses or safety goggles.



**LIGHTWEIGHT**  
Weighs less than half the weight of a handkerchief.

**CONTOUR FIT**  
Soft metal nosepiece adjusts closely over bridge of nose. Non-woven filter material conforms comfortably to facial features.

**MAINTENANCE FREE**  
Nothing to clean, just throw it away.

**EASY BREATHING/SPEAKING**  
Breathe and speak normally. You'll be easily understandable at normal tones.

Occupational Health and Safety Products Division/3M  
220-TW 3M Center  
St. Paul, MN 55144  
MSP 10/85

3M

# General Dust and Sanding Respirator

Quantity:  
1 Box 15 Respirators

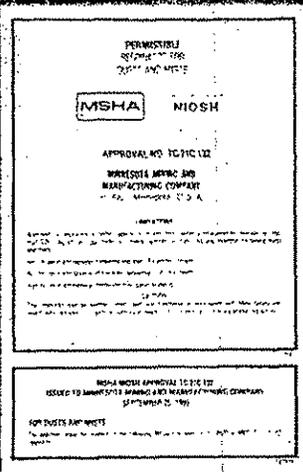


## NIOSH/MSHA Approved\*\*

**Dusts** — Having a PEL (permissible exposure level) not less than 0.05 milligrams per cubic meter of air, including but not limited to coal, cotton, cadmium, chromium, lead and manganese; or dusts having a PEL (permissible exposure level) not less than 2 million particles per cubic foot of air, including but not limited to aluminum, flour, iron ore and free silica, resulting principally from the disintegration of a solid, e.g., dust clouds produced in mining, quarrying, and tunneling, and in dust produced during industrial operations, such as grinding, crushing, and the general processing of minerals and other materials.

**Mists** — Mists of materials having a PEL (permissible exposure level) not less than 0.05 milligrams per cubic meter or 2 million particles per cubic foot, e.g., mist produced by spray coating with vitreous enamels, chromic acid mist produced during chromium plating, and other mists of materials whose liquid vehicle does not produce harmful gases or vapors.

iii) Asbestos containing dust and mists.



# 8560/8710\* General Dust and Sanding Respirator

NIOSH/MSHA approved\*\*  
for dust and mist

### Important Notice

**WARRANTY:** In the event any 3M DH&SP product is found to be defective in material, workmanship, or not in conformance with any express warranty for a specific purpose, 3M's only obligation and your exclusive remedy shall be to repair, replace, or refund the purchase price of such parts or products upon timely notification thereof and substantiation that the product has been stored, maintained and used in accordance with 3M's written instructions.

**EXCLUSIONS TO WARRANTY:** THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OF QUALITY, EXCEPT OF TITLE AND AGAINST PATENT INFRINGEMENT.

**LIMITATION OF LIABILITY:** Except as provided above, 3M shall not be liable or responsible for any loss or damage, whether direct, indirect, incidental, special or consequential, arising out of the safe use or misuse of 3M DH&SP products, or the user's inability to use such products. THE REMEDIES SET FORTH HEREIN ARE EXCLUSIVE.

\* 8560 is part no. only. Package contains 15, 8710 NIOSH/MSHA approved respirators.

\*\* Reference to NIOSH/MSHA approval is for 8710 respirator only.



6983

Simple to put on



1. Hold the respirator by the top band. The bottom band is twisted around the neck. The bottom band is twisted around the neck below ears.



2. Place the respirator over the nose and mouth. The bottom band is twisted around the neck below ears.



3. Adjust the top band over the head. The bottom band is twisted around the neck below ears.



4. Pull top band over head and position at top back of head. Put bottom band over head and position around neck below ears.



5. Using both hands, mold metal nosepiece to shape of nose.



6. To check fit, cup both hands over respirator and exhale vigorously. If air flows around nose, tighten nosepiece. If air leaks at respirator edges, work straps back along the side of the head. If you cannot achieve a proper fit do not enter contaminated area. See your supervisor.

Warning:

- 1) This respirator removes only dusts and mists from the air. It is not designed to be used for protection against fumes, gases, vapors, paint spray operations or in atmospheres containing less than 19.5% oxygen.
- 2) Do not use when concentrations of contaminants are immediately hazardous to life or health or when concentrations exceed 10% PEL.
- 3) Discard and replace respirator if it becomes damaged or breathing resistance becomes excessive.
- 4) Leave the contaminated area immediately if breathing becomes difficult or if discomforts or other distress occurs.
- 5) Never allow anyone to modify the respirator.
- 6) Use of this or any respirator should be in accordance with applicable safety and health standards, respirator selection tables, or instructions to the recommendations of an industrial hygienist.

tables, or instructions to the recommendations of an industrial hygienist.

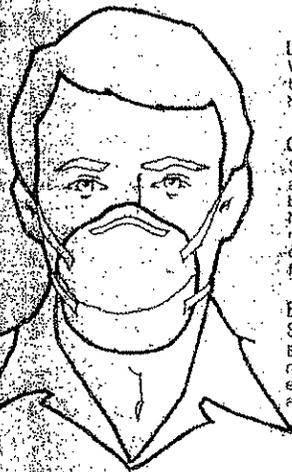
7) Failure to follow all instructions and warnings on the use of this product and/or wear this respirator during all levels of exposure can reduce respirator effectiveness and wear protection.

NOTE: Before assigning any respirator to be worn, a qualitative or quantitative face fit test must be performed. Refer to OSHA regulations: 1910.134 (e) (5).

Automotive Dust Respirator for asbestos, lead, and most plastic and cured paint dust\*

CLEAR VISION

Low-profile design lets you see where you are going. What you are doing. Easily wear glasses or safety goggles.



LIGHTWEIGHT

Weighs less than half the weight of a handkerchief.

CONTOUR FIT

Soft metal nosepiece adjusts closely over bridge of nose. Non-woven filter material conforms comfortably to facial features.

EASY BREATHING/SPEAKING

Breathe and speak normally. You'll be easily understandable at normal tones.

MAINTENANCE FREE

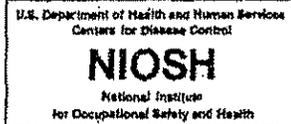
At the end of a day, throw it away. Nothing to clean.

Automotive Trades Division 3M

223-6NW, 3M Center  
St. Paul, MN 55144

MADE IN U.S.A.

**PERMISSIBLE  
RESPIRATOR FOR  
DUSTS AND MISTS**



MINE SAFETY AND HEALTH ADMINISTRATION  
NATIONAL INSTITUTE FOR OCCUPATIONAL  
SAFETY AND HEALTH

**APPROVAL NO. TC-21C-132**

ISSUED TO

**MINNESOTA MINING AND  
MANUFACTURING COMPANY**

St. Paul, Minnesota, U. S. A.

**LIMITATIONS**

Approved for respiratory protection against dusts and mists having a time-weighted average not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot.

Not for use in atmospheres containing less than 19.5 percent oxygen.

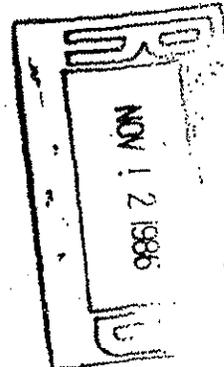
Not for use in atmospheres immediately dangerous to life and health.

Not for use in atmospheres containing toxic gases or vapors.

**CAUTION**

This respirator shall be selected, fitted, used, and maintained in accordance with Mine Safety and Health Administration, Occupational Safety and Health Administration, and other applicable regulations.

T-012508-C

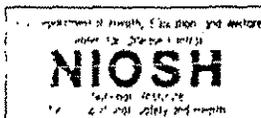
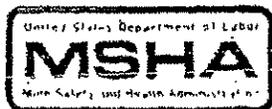


**MSHA-NIOSH APPROVAL TC-21C-132  
ISSUED TO MINNESOTA MINING AND MANUFACTURING COMPANY  
OCTOBER 20, 1986**

**FOR DUSTS AND MISTS**

The approved assembly consists of the following 3M part numbers: 8710, 6983 (TC-21C-132) respirator.

**PERMISSIBLE  
RESPIRATOR FOR  
DUSTS AND MISTS**



*← new logo*

MINE SAFETY AND HEALTH ADMINISTRATION  
NATIONAL INSTITUTE FOR OCCUPATIONAL  
SAFETY AND HEALTH

**APPROVAL NO. TC-21C-132**

ISSUED TO

**MINNESOTA MINING AND  
MANUFACTURING COMPANY**

St. Paul, Minnesota, U. S. A.

**LIMITATIONS**

Approved for respiratory protection against dusts and mists having a time-weighted average not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot

Not for use in atmospheres containing less than 19.5 percent oxygen.

Not for use in atmospheres immediately dangerous to life and health.

Not for use in atmospheres containing toxic gases or vapors.

**CAUTION**

This respirator shall be selected, fitted, used, and maintained in accordance with Mine Safety and Health Administration, Occupational Safety and Health Administration, and other applicable regulations.

T-012508-C

**MSHA-NIOSH APPROVAL TC-21C-132  
ISSUED TO MINNESOTA MINING AND MANUFACTURING COMPANY**

*October 29, 1986*

**FOR DUSTS AND MISTS**

The approved assembly consists of the following JM part numbers: 8710, 85<sup>5</sup>10 or 8983 (TC-21C-132) respirator.

34-7014-2458-E

T-012518-C

General Offices/3M

3M Center  
St. Paul, Minnesota 55144-1000  
612/733 1110



November 6, 1986

Ms. Nancy Bollinger  
NIOSH  
Certification Lab, Room 16  
944 Chestnut Ridge Road  
Morgantown, WV 26505

Reference: TN03495

Subject: Extension of Approvals

Dear Ms. Bollinger;

Enclosed you will find copies of the approval labels to add to your files pertaining to the referenced extension.

FROM: 3M Company  
3M Center  
St. Paul, MN 55144

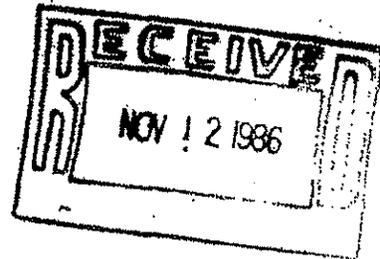
Our NIOSH representative is Mr. D.P. Wilmes. His alternate is Dr. D.W. Gosselink. NIOSH to notify our representative of required fees.

If you have any questions, please contact me.

Very truly yours,

*D.W. Gosselink/DAR*  
D.P. Wilmes  
OH&SP Division/3M  
Bldg. 260-3-02

DPW/gp  
enclosures



Approval Number

Model Number(s)

TC-21C-132

8710, 6983, 8550

*cont.*

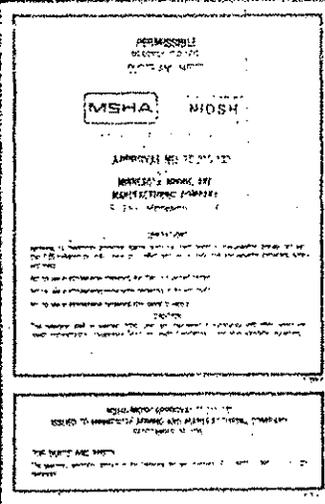


**NIOSH/MSHA Approved**

**Dusts**—Having a PEL (permissible exposure limit) not less than 0.05 milligrams per cubic meter of air, including but not limited to coal, cotton, cadmium, chromium, lead and manganese; or dusts having a PEL (permissible exposure limit) not less than 2 million particles per cubic foot of air, including but not limited to aluminum, flour, iron ore and free silica, resulting principally from the disintegration of a solid, e.g., dust clouds produced in mining, quarrying, and tunneling, and in dust produced during industrial operations, such as grinding, crushing, and the general processing of minerals and other materials.

**Mists**—Mists of materials having a PEL (permissible exposure limit) not less than 0.05 milligrams per cubic meter or 2 million particles per cubic foot, e.g., mist produced by spray coating with vitreous enamels, chromic acid mist produced during chromium plating, and other mists of materials whose liquid vehicle does not produce harmful gases or vapors.

**Asbestos** containing dust and mists.



# 8710 Dust and Mist Respirator

**IMPORTANT — BEFORE REMOVING RESPIRATOR, READ FITTING INSTRUCTIONS AND WARNINGS ON BOX.**

**NIOSH/MSHA approved  
for dusts and mists  
(including asbestos & lead)\***

**Contents: 20 Respirators**

**Important Notice**

**WARRANTY:** In the event any 3M OH&SP product is found to be defective in material, workmanship, or not in accordance with any express warranty for a specific purpose, 3M's only obligation and your exclusive remedy shall be to repair, replace, or refund the purchase price of such parts or products upon timely notification thereof and substantiation that the product has been stored, maintained and used in accordance with 3M's written instructions. **EXCLUSIONS TO WARRANTY: THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OF QUALITY, EXCEPT OF TITLE AND AGAINST PATENT INFRINGEMENT.** **LIMITATION OF LIABILITY:** Except as provided above, 3M shall not be liable or responsible for any loss or damage, whether direct, indirect, incidental, special or consequential, arising out of the sale, use or misuse of 3M OH&SP products, or the user's inability to use such products. **THE REMEDIES SET FORTH HEREIN ARE EXCLUSIVE.**

8710

**Simple to put on**



1. Before wearing, presretch each strap by grasping and pulling the strap between both hands at 1-2 inch intervals around the entire length of the strap.



2. Cup respirator in hand, with nosepiece at forehead, allowing headbands to hang freely below hand.



3. Cup respirator under chin with nosepiece up. Hold firmly by the headbands.



4. Put top band over head and position at top back of head. Put bottom band over head and position around neck below ears.



5. Using both hands, mold metal nosepiece to shape of nose.



6. To check fit, cup both hands over respirator and exhale vigorously. If air flows around nose, tighten nosepiece. If air leaks at respirator edges, work straps back along the side of the head. If you cannot achieve a proper fit do not enter contaminated area. See your supervisor.

**Warning**

- 1) This respirator removes only dusts and mists from the air. It is not designed to be used for protection against fumes, gases, vapors, acid spray operations or in atmospheres containing less than 19.5% oxygen.
- 2) Do not use when concentrations of contaminants are immediately hazardous to life or health or when concentrations exceed 10X PEL.
- 3) Discard and replace respirator if it becomes damaged or breathing resistance becomes excessive.
- 4) Leave the contaminated area immediately if breathing becomes difficult or if dizziness or other distress occurs.
- 5) Never repair or modify this device.
- 6) Use of this or any respirator should be in accordance with applicable safety and health standards, respirator selection tables, or pursuant to the recommendations of an industrial hygienist.
- 7) Failure to follow all instructions and warnings on the use of this product and/or wear this respirator during all times of exposure can reduce respirator effectiveness and render protection.

tables, or pursuant to the recommendations of an industrial hygienist.

FOR MORE INFORMATION and assistance, call 3M Health and Safety Products, contact your local 3M representative or call 3M's Technical Service toll free, 1-800-942-4636. In Minnesota, call 612-733-6234. In Canada, contact 3M Canada Inc., P.O. Box 527, Toronto 9, London, Ontario, Canada M6A4T1, (519) 451-2320.

NOTE: Before assigning any respirator to be worn, a qualitative or quantitative fit test must be performed. Refer to OSHA regulations 1910.134 (f) (5).

**NIOSH/MSHA approved for dusts and mists (including asbestos & lead)\***

**CLEAR VISION**

Low profile design lets you see where you are going, what you are doing. Easily wear glasses or safety goggles.

**LIGHTWEIGHT**

Weights less than half the weight of a handkerchief.

**CONTOUR FIT**

Soft metal nosepiece adjusts closely over bridge of nose. Non-woven filter material conforms comfortably to facial features.

**EASY BREATHING/SPEAKING**

Breathe and speak normally. You'll be easily understandable at normal tones.

**MAINTENANCE FREE**

At the end of a day, throw it away. Nothing to clean.



ANOTHER STEP TOWARDS BETTER OCCUPATIONAL HEALTH AND SAFETY

Occupational Health and Safety Products Division 3M

3M Company  
3M Center  
St. Paul, MN 55144  
Phone 612-733-6234  
3M Technical Service





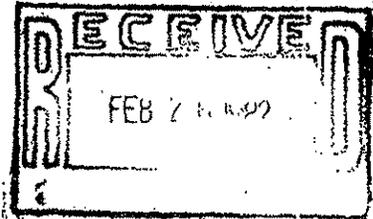


TN 01173

Occupational Health and  
Safety Products Division/3M

3M Center  
St. Paul, Minnesota 55144  
612/733 1110

February 17, 1982



Nancy Bollinger  
NIOSH  
Testing & Certification Branch  
944 Chestnut Ridge Road  
Morgantown, W. Virginia 26505

Dear Ms. Bollinger:

Submitted for extension of approval TC-21C-132 is the 3M #8710. The extension is requested to cover a change in the filter media and to allow some optional cover webs.

The Q.C. plan is attached. Separate parts lists, flow charts, drawings, and final product standards have been included to cover the respirator with an aluminum noseclip and a galvanized noseclip separately. Production samples have also been included. The fees for testing will be included under separate cover.

If you have any questions regarding this extension request, please let me know.

Yours very truly,

Donald P. Wilmes  
OH&SP Division  
Bldg. 230-B

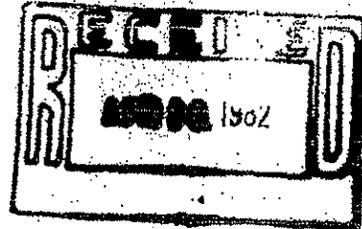
DPW/lw  
attachments

Occupational Health and  
Safety Products Division/3M

3M Center  
St. Paul, Minnesota 55144  
612/733 1110

**3M**

April 16, 1982



Nancy Bollinger  
NIOSH  
Testing & Certification Branch  
944 Chestnut Ridge Road  
Morgantown, W. Virginia 26505

Dear Ms. Bollinger:

Per our letter of February 13, 1982, we submitted 3M #8710  
for extension of approval (TN 01173).

One of the items to be covered under the extension, was  
the use of two possible types of noseclips. The originally  
submitted Quality Plan contained two separate material lists  
to cover this option. That format was later found to be  
confusing. To eliminate the confusion, we have since  
combined the two material lists into one. This new  
material list is enclosed with this memo.

Since the product with different types of noseclips could  
be produced at different times, the flow charts remain as  
originally submitted.

If you have any question regarding this matter, please let  
me know.

Yours very truly,

D. P. Wilmes  
OH&SP Division  
Bldg. 230-B

DPW/lw



Our Reference: TN01173

June 30, 1982

Mr. Donald P. Wilmes  
Quality Assurance  
3M Company, 3M Center  
Building 230-B  
St. Paul, MN 55144

Reference: Your letter of February 17, 1982

Subject: Extension of approval TC-21C-132

Dear Mr. Wilmes:

An extension of approval TC-21C-132 is granted to cover a change in the filter media and to allow some optional cover webs for the 8710 respirator.

Your drawing list for the 8710 respirator dated 6/2/82 applies to this extension of approval.

Your revised quality control plan for the above respirator was reviewed by NIOSH. On the basis of that review, the quality control plan is accepted as part of this extension of approval.

Please submit samples of respirator packaging, bearing all required labels, instructions, and markings, for our approval, before adopting them. We shall retain several items as record material. All other material will be discarded unless we are otherwise advised by you.

Sincerely yours,

Nancy J. Bollinger  
Acting Chief  
Testing and Certification Branch  
Division of Safety Research

Enclosure

cc:  
F. Lee  
FIG  
R. Justiss

CCoffey:nkr:6/30/82

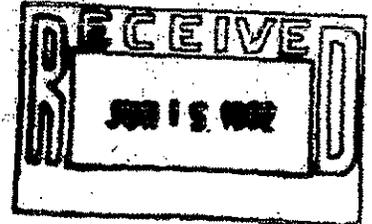
CONCUR: RS \_\_\_\_\_

Occupational Health and  
Safety Products Division/3M

3M Center  
St. Paul, Minnesota 55144  
612/733 1110

June 7, 1982

3M



Ms. Nancy Bollinger  
NIOSH  
Testing & Certification Branch  
944 Chestnut Ridge Road  
Morgantown, W. Virginia 26505

Dear Ms. Bollinger:

SUBJECT: Request for extension of approval  
TC-21C-132. Task number 01173. ✓

Further review of the Quality Plan for this revision indicated a few minor date and format problems with the submitted documentation. Enclosed with this letter are three copies of the revisions to the documentation.

If you have any questions regarding this matter, please let me know.

Yours very truly,

*D. P. Wilmes (sig)*

D.P. Wilmes  
Occupational Health and  
Safety Products Division/3M

/js

bc: P.F. Guehler  
B.D. Johnson  
D.P. Wilmes

# MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
CENTER FOR DISEASE CONTROL  
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

TO : Technical Report Reviewer

DATE: 6/30/82

F16

FROM : Acting Chief, ICB

SUBJECT: Review of Technical Report On Task # 1173

Please review the attached technical report and complete the following:

As official reviewer of this technical report I fully concur with its recommendations with

no exceptions.

exceptions of minor typographical errors noted on this copy of the report.

Harren R. Myers

signature of reviewer

6/30/82

date

I request a review meeting.

signature of reviewer

date

Reviewer will return this completed form to the Branch Office within 48 hours of receipt.

Nancy J. Bollinger



TN01173  
Christopher Coffey  
6/30/82

*Sam*  
7/16 6/30

Extension of approval TC-21C-132

Background

On February 17, 1982, 3M requested an extension of approval for their 8710 (TC-21C-132) respirator to cover a change in the filter media, optional cover webs and two types of nose clips: galvanized and aluminum.

Tests

A. Silica Dust 11.140-4

1. Resistance to air flow will be measured before and after test (11.140-9).
2. Three completely assembled respirators will be tested at a continuous airflow rate of 32 lpm.
3. The relative humidity in the chamber will be 20-80% and the room temperature will be approximately 25°C.
4. The test concentration in the chamber will not be less than 50 nor more than 60 milligrams of silica dust per cubic meter.
5. The particle size distribution of the silica dust will have a geometric mean of .4 to .6 micro meters, the standard geometric deviation will not exceed 2.
6. The test will last 90 minutes with samples of the concentration taken every 30 minutes.
7. The total amount of leakage shall not exceed 1.5 milligrams.

B. Silica Dust - Single Use 11.140-5

1. Resistance to airflow will be measured before and after test. See Table 11.140-9.
2. One respirator will be tested with a breathing machine at the rate of 24 respirations per minute with a minute volume of 40 LPM. A breathing machine can with a work rate of 622 Kg m<sup>2</sup>/minute shall be used.
3. Air exhaled through the respirator will be 35°C ± 2° with 94 ± 3% relative humidity.
4. The test concentration in the chamber will not be less than 50 nor more than 60 milligrams of silica dust per cubic meter.
5. The particle-size distribution of the silica dust will have a geometric mean of .4 to .6 micrometer, the standard geometric deviation will not exceed 2.
6. The test will last 90 minutes with samples of the concentration taken every 30 minutes.
7. The total amount of leakage shall not exceed 1.8 milligrams.

March 15, 1982

FILE COPY

COMPANY 3M

NIOSH Representative: Mr. Wilmes

The Testing and Certification Branch has received the following application for the NIOSH certification program:

Date of Application Feb 17, 1982

Date Received by NIOSH Feb 26, 1982

Subject of Application Extension 3M 8710 TC 210-132  
Change in Filter Media

Task Number Assigned I-01173

ITEM	REQUIRED	RECEIVED	ITEMS INCOMPLETE
1) Copies of Application	2	<u>4</u>	_____
2) Classification of Device Air Purifying Atmosphere Supplying	Yes if New or Functional Revision	<u>N/A</u>	_____
3) Presubmission Data: Test Data 30 CFR 11 Reference	Yes if New or Revised	<u>N/A</u>	_____
4) Label Drafts	Yes if New or Revised	<u>N/A</u>	_____
5) User Instructions	Yes if New or Revised	<u>N/A</u>	_____
6) Test Samples	Yes if New or Revised	<u>✓</u>	_____
7) Fees		_____	<u>✓</u>

3M

8710

# 8710 Dust and Mist Respirator



NIOSH/MSHA approved  
for dusts and mists  
(including asbestos & lead)\*

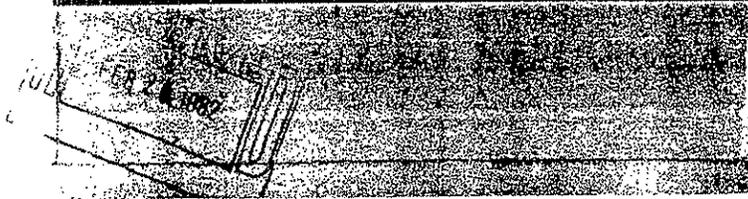
Contents: 20 Respirators

Simple to put on



Warning

If you have any questions regarding the proper use of the 8710 Dust and Mist Respirator, contact your Industrial Hygienist or call 3M Occupational Health and Safety Department, 3M Center, St. Paul, MN 55144. Toll Free 800-333-3333.



3M

8710

# 8710 Dust and Mist Respirator



NIOSH/MSHA approved  
for dusts and mists  
(including asbestos & lead)\*

Contents: 20 Respirators

Simple to put on



### Warning

- 1. This respirator is not to be used in atmospheres containing oxygen-deficient air, or in atmospheres containing concentrations of any of the following gases or vapors: carbon monoxide, hydrogen cyanide, ammonia, or sulfur dioxide.
- 2. This respirator is not to be used in atmospheres containing concentrations of any of the following gases or vapors: carbon monoxide, hydrogen cyanide, ammonia, or sulfur dioxide.
- 3. Use only the approved 3M 8710 Dust and Mist Respirator for protection against dusts and mists.
- 4. Do not use this respirator if the filter is damaged or the seal is broken.
- 5. Do not use this respirator if the filter is expired.
- 6. Do not use this respirator if the filter is not the correct type for the hazard.
- 7. Do not use this respirator if the filter is not the correct size for the hazard.
- 8. Do not use this respirator if the filter is not the correct color for the hazard.
- 9. Do not use this respirator if the filter is not the correct shape for the hazard.
- 10. Do not use this respirator if the filter is not the correct material for the hazard.

If you have any questions regarding the proper use of the 8710 Dust and Mist Respirator, contact your Industrial Hygienist, or call 3M OSHA/MSHA Technical Services Toll Free 800-328-1329.

**NIOSH/MSHA approved  
for dusts and mists  
(including asbestos & lead)\***

NIOSH/MSHA Approved

**CLEARVIEW™**  
 Clearview™ is a  
 new type of respirator  
 that is easy to use,  
 comfortable and  
 clear.

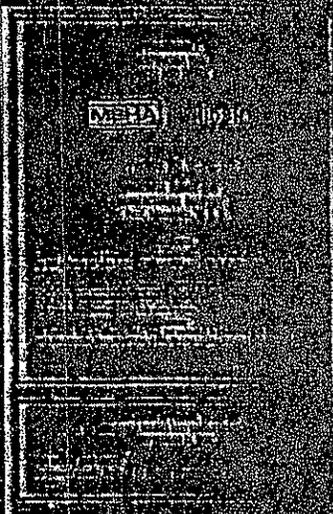


**EFFICIENT**  
 Clearview™ is  
 designed to provide  
 excellent protection  
 against dusts and  
 mists.

**MAINTENANCE  
FREE**  
 At the end of a day,  
 throw it away. No  
 need to clean.

**EASY  
BREATHING  
SPEAKING**  
 Clearview™ has  
 a special design  
 that allows you to  
 breathe and speak  
 comfortably.

**Important Notice to Purchaser**



ANOTHER STEP TOWARD BETTER OCCUPATIONAL HEALTH AND SAFETY

Occupational Health and Safety Products Division, 3M  
 2207W, 3M Center  
 St. Paul, MN 55144  
 Made in U.S.A.





DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Our Reference: TN 03663

Centers for Disease Control  
National Institute for Occupational  
Safety and Health — ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505-2888

March 30, 1987

Mr. Donald Wilmes  
3M Company  
3M Center; Bldg. 260-3-02  
St. Paul, Minnesota 55144

Reference: Your letters of February 17 and March 6 and 17, 1987

Subject: Request for approval of the 8710, 8710S and 6983 disposable  
half mask respirators

Dear Mr. Wilmes:

Approval TC-21C-401 is granted to cover the 8710, 8710S and 6983  
disposable half mask respirator for respiratory protection against dusts  
and mists having a time-weighted average not less than 0.05 milligram per  
cubic meter or 2 million particles per cubic foot and asbestos containing  
dusts and mists.

The following limitations apply to this approval:

Not for use in atmospheres containing less than 19.5 percent oxygen.

Not for use in atmospheres immediately dangerous to life or health.

Follow the manufacturer's instructions for discarding the respirator.

This respirator shall be selected, fitted, used and maintained in  
accordance with the Mine Safety and Health Administration, Occupational  
Safety and Health Administration, and other applicable regulations.

In making renewals or repairs, parts identical with those furnished by  
the manufacturer under the pertinent approval shall be maintained.

The approved assembly consists of the following 3M parts: 8710, 8710S or  
6983 (TC-21C-401) respirator. These parts are to be marked with the  
indicated numbers in a legible and permanent manner (marking cannot be  
removed without evidence of its previous presence).

The enclosed approval label designs are to be used in preparing the  
approval labels. Designs of your labels must be submitted to NIOSH for  
approval before printing, and proofs of the printed labels must be  
submitted to NIOSH for further approval before their final production.

Our Reference: TN 03663

March 30, 1987

Mr. Donald Wilmes  
3M Company  
3M Center; Bldg. 26J-3-02  
St. Paul, Minnesota 55144

Reference: Your letters of February 17, March 6 and 17, 1987

Subject: Extension of Approval TC-210-132

Dear Mr. Wilmes:

An extension of approval TC-210-132 is granted to cover the updated materials, fibers for the inner shell and resin for the filter web in the 8710 and 6983 respirators and the removal of models 8520 and 8550 and the steel noseclip version of the 8710 respirator.

Your drawing lists dated 3-17-87 for the 8710 and 6983 respirators apply to this extension of approval.

Your revised quality control plan for the above respirators was reviewed by NIOSH. On the basis of that review, the quality control plan is accepted as part of this extension of approval.

The enclosed approval label designs are to be used in preparing the approval label.

Designs of your labels must be submitted to NIOSH for approval before printing, and proofs of the printed labels must be submitted to NIOSH for further approval before their final production.

Please submit samples of respirator packaging, bearing all required labels, instructions, and markings, for our approval, before adopting them. We shall retain several items as record material. All other material will be discarded unless we are otherwise advised by you.

Sincerely yours,

Nancy J. Bollinger, Chief  
Certification Branch  
Division of Safety Research

cc:  
Hill  
Justiss  
✓ Coffey

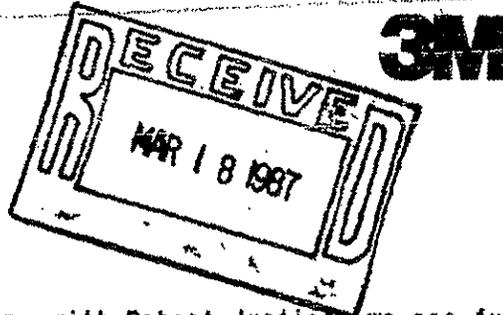
TN 03663

Occupational Health and  
Safety Products Division/3M

3M Center  
St. Paul, Minnesota 55144-1000  
612/733 1110

March 17, 1987

Ms. Nancy Bollinger  
NIOSH  
Certification Lab, Room 16  
944 Chestnut Ridge Road  
Morgantown, WV 26505



Dear Ms. Bollinger:

Per conversation this morning with Robert Justice, we are further amending our submission of February 16, 1987 (NIOSH Task Number 03663).

Submitted for approval for Dusts/Mists having a PEL not less than .05 mg per m<sup>3</sup> and asbestos containing dusts and mists are the International versions of the 3M 8710 (aluminum noseclip version), 3M 8710S (steel noseclip version) and 3M 6983. These products will only be sold outside the US. All products are essentially the same. 6983 is the same as 8710 except that it has white rather than yellow headbands.

Also submitted for update of certain materials, notably fibers for the inner shell and resin for the filter web, are the US versions of 8710 and 6983, which again are identical except for color of headbands. We consider these material changes minor. These products do not now carry an asbestos approval, and are intended for sale with Dust/Mist approval TC-21C-132 within the US. We had earlier sold the steel noseclip version of 8710 with approval TC-21C-132. We request that it be removed from TC-21C-132 as it has been added to the approval requested in the preceding paragraph. We request that 8520 and 8550 designations be removed from approval TC-21C-132, as we do not sell these products.

The filter media in all products is identical, so filtration performance should be similar for all products. We are including samples of 8710 and 6983 with the submission, as well as 3M test results for both products.

From: Minnesota Mining & Manufacturing Co.  
3M Center  
St. Paul, MN 55144

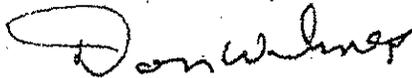
Our NIOSH representative is Mr. D. P. Wilmes. His alternate is Dr. D. W. Gosselink. NIOSH to notify our representative of the required fees.

This submission was prepared by Mr. E. J. Woodward, who may be reached at 612-733-4935, should you wish to discuss technical details of the submission.

This amendment to the submission includes revised versions of the following appendices from the original submission:

Approval Label Draft	Appendix B
User instructions	Appendix C
Systems & component parts list	Appendix D
Required prints and C/Ds	Appendix E
Finished Product Standards	Appendix F

Regards,



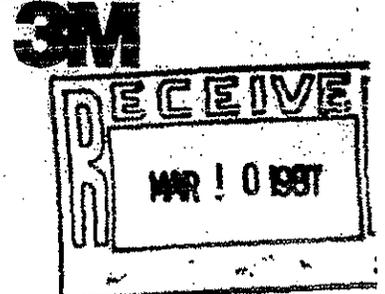
D. P. Wilmes  
OH&SP Division / 3M  
Bldg 260-3-02  
3M Center  
St Paul, MN 55144

Occupational Health and  
Safety Products Division/3M

3M Center  
St. Paul, Minnesota 55144-1000  
612/733 1110

March 6, 1987

Ms. Nancy Bollinger  
NIOSH  
Certification Lab, Room 16  
944 Chestnut Ridge Road  
Morgantown, WV 26505



Dear Ms. Bollinger:

Per conversations this morning with Robert Justiss, we are amending our submission of February 16, 1987 (NIOSH Task Number 03663).

Submitted for approval for Dusts/Mists having a PEL not less than .05 mg per m<sup>3</sup> and asbestos containing dusts and mists are the International versions of the 3M 8710 (both steel and aluminum noseclip versions) and 3M 6983. These products will only be sold outside the US. All products are essentially the same. 6983 is the same as 8710 except that it has white rather than yellow headbands.

Also submitted for update of certain materials, notably fibers for the inner shell and resin for the filter web, are the US versions of 8710 and 6983, which again are identical except for color of headbands. We consider these material changes minor. These products do not now carry an asbestos approval, and are intended for sale with Dust/Mist approval TC-21C-132 within the US. We had earlier sold the steel noseclip version of 8710 with approval TC-21C-132. We request that it be removed from TC-21C-132 as it has been added to the approval requested in the preceding paragraph. We request that 8520 and 8550 designations be removed from approval TC-21C-132, as we do not sell these products.

The filter media in all products is identical, so filtration performance should be similar for all products. We are including samples of 8710 and 6983 with the submission, as well as 3M test results for both products.

From: Minnesota Mining & Manufacturing Co.  
3M Center  
St. Paul, MN 55144

Our NIOSH representative is Mr. D. P. Wilmes. His alternate is Dr. D. W. Gosselink. NIOSH to notify our representative of the required fees.

This submission was prepared by Mr. E. J. Woodward, who may be reached at 612-733-4935, should you wish to discuss technical details of the submission.

This amendment to the submission includes new versions of the following appendices from the original submission:

Approval Label Draft	Appendix B
User instructions	Appendix C
Systems & component parts list	Appendix D
Required prints and C/Ds	Appendix E

Regards,



D. P. Wilmes  
OH&SP Division / 3M  
Bldg 260-3-02  
3M Center  
St Paul, MN 55144



DEPARTMENT OF HEALTH & HUMAN SERVICES

COPY

Memorandum

Date March 17, 1987
From Chief, Air Purifying Respirator Section CB
Division of Safety Research
Subject Your request for fee and/or additional test material

To Mr. Donald Wilmes
3M Company
3M Center; Bldg. 260-3-02
St. Paul MN 55144

The application for the update of materials used in the 8710

was received on 2-17-87

Test Material Requested:

Test Material Received:

Test Material Received Under Separate Cover:

A Fee of \$100.00 is Requested.

A Fee of \$ was Received.

Additional Information Requested:

Our Reference: TN03663

Handwritten signature of Christopher C. Coffey and printed name Christopher C. Coffey

cc: Project File
Manufacturer File

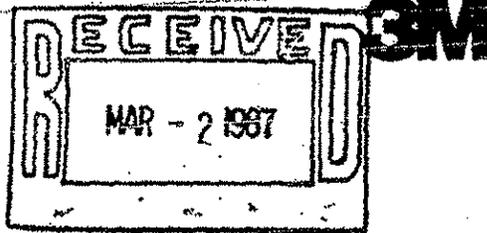
Occupational Health and  
Safety Products Division/3M

TN 03663  
✓

3M Center  
St. Paul, Minnesota 55144-1000  
612/733 1110

February 17, 1987

Ms. Nancy Bollinger  
NIOSH  
Certification Lab, Room 16  
944 Chestnut Ridge Road  
Morgantown, WV 26505



Dear Ms. Bollinger:

Submitted for approval for Dusts/Mists having a PEL not less than .05 mg per m<sup>3</sup> and asbestos containing dusts and mists are the 3M 8710A, 3M 8710SA, and 3M 6983A. These products will only be sold outside the US. All three products are essentially the same. 8710SA is a steel noseclip version of 8710A; while 6983A is the same as 8710A except that it has white rather than yellow headbands.

Also submitted for update of certain materials, notably fibers for the inner shell and resin for the filter web, are 8710 and 6983, which are identical except for color of headbands. We consider these material changes minor. These products do not now carry an asbestos approval, and are intended for sale with Dust/Mist approval TC-21C-132 within the US. We request that 8520 be removed from this approval, as we do not sell this product.

The filter media in all products is identical, so filtration performance should be similar for all products. We are including samples of 8710 and 6983 with the submission, as well as 3M test results for both products.

From: Minnesota Mining & Manufacturing Co.  
3M Center  
St. Paul, MN 55144

Our NIOSH representative is Mr. D. P. Wilmes. His alternate is Dr. D. W. Gosselink. NIOSH to notify our representative of the required fees.

This submission was prepared by Mr. E. J. Woodward, who may be reached at 612-733-4935, should you wish to discuss technical details of the submission.

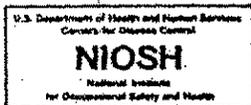
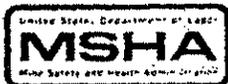
Pre-submission test data	Appendix A
Approval Label Draft	Appendix B
User instructions Draft	Appendix C
Systems & component parts list	Appendix D
Required prints and C/Ds	Appendix E
Finished Product Standards	Appendix F

Regards,

*D. P. Wilmes*

D. P. Wilmes  
OH&SP Division/3M

**PERMISSIBLE  
RESPIRATOR FOR  
DUSTS AND MISTS**



MINE SAFETY AND HEALTH ADMINISTRATION  
NATIONAL INSTITUTE FOR OCCUPATIONAL  
SAFETY AND HEALTH

**APPROVAL NO. TC-21C-132**

ISSUED TO:

**MINNESOTA MINING AND  
MANUFACTURING COMPANY**  
St. Paul, Minnesota, U. S. A.

**LIMITATIONS**

Approved for respiratory protection against dusts and mists having a time-weighted average not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Not for use in atmospheres immediately dangerous to life and health.

Not for use in atmospheres containing toxic gases or vapors.

**CAUTION**

This respirator shall be selected, fitted, used, and maintained in accordance with Mine Safety and Health Administration, Occupational Safety and Health Administration, and other applicable regulations.



DATE QA ACCEPTED - 3/23/87

PROJECT # 03663

ACCEPTED BY - R. D. Justice, Jr.

MANUFACTURER 3M

LETTER DATE Feb 17, 1987

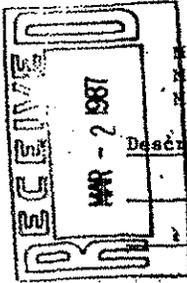
Type of Application: (x) New ( ) Extension ( ) Other (x) Update

Date Project Closed: Approved Denied

QUALITY ASSURANCE

Mfg Ltr Date TN# .1 =
Mfg Ltr Date TN# .2 =
Mfg Ltr Date TN# .3 =

Description of Application:



NEW MODELS FOR INITIAL CERTIFICATION:

Table with columns: MODEL, P/L DATE, MODEL, P/L DATE, SUB ASSY P/L, P/L DATE. Includes handwritten entries for models 8710A, 8710SA, and 8983A with P/L date 3/17/87.

NEW MODELS FOR EXTENSION TO NIOSH CERTIFICATION:

Table with columns: TC#, MODEL, P/L DATE, TC#, MODEL, P/L DATE.

MINOR REVISION OR EXTENSION OF NIOSH CERTIFICATION:

Table with columns: TC#, MODEL, P/L DATE, TC#, MODEL, P/L DATE. Includes handwritten entry for model 8710 with TC# 210-132 and P/L date 3/17/87.



EXTENSION OF APPROVAL APPLICATION FORM

Project Number TN03663 Company 3M

Extension of approval made 2/17/87 to cover new inner shell

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Parts List	Req. <u>1 1</u>	Recd. <u>2/17/87</u>
Pre-test Data	Req. <u>1 1</u>	Recd. <u>2/17/87</u>
Fee Set <u>\$102</u>	Req. <u>3/17/87</u>	Recd. <u>1 1</u>
<del>Log Book Entry</del> <u>1 1</u>	Log Book Entry. <u>11, p. 50 3/17/87</u>	

Respirator models and approval numbers affected:

TC-21C-1328710  
69P3

Required Performance Tests for this Application

- |                                    |  |                                 |                     |
|------------------------------------|--|---------------------------------|---------------------|
| 1) <u>silica dust - cont. flow</u> | Passed <input checked="" type="checkbox"/> | Failed <input type="checkbox"/> | Date <u>3-26-87</u> |
| 2)                                 | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date _____          |
| 3)                                 | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date _____          |
| 4)                                 | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date _____          |
| 5)                                 | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date _____          |
| 6)                                 | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date _____          |
| 7)                                 | Passed <input type="checkbox"/>            | Failed <input type="checkbox"/> | Date _____          |

TNO3653  
Christopher Coffey  
March 30, 1987

3M's request for approval of the 8710, 8710S and 6983 respirators

Background:

On February 17, 1987, 3M requested approval of the international version of the 8710 (aluminum noseclip version), 8710S (steel noseclip version) and 6983 for protection against dusts and mists having a time-weighted average not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot and asbestos containing dusts and mists. The 6983 is the same as the 8710 except that it has white rather than yellow handbands.

3M also requested an extension of approval (TC-21C-132) to cover update of the fibers for the inner shell and resin for the filter web and to remove the steel noseclip version of the 8710 and 8520 and 8550 designations since they do not sell the produce.

Tests:

A. Silica Dust for Replaceable Filters 11.140-4

1. Resistance to air flow will be measured before and after test (11.140-9).
2. Three completely assembled respirators will be tested at a continuous airflow rate of 32 Lpm.
3. The relative humidity in the chamber will be 20-80 percent and the room temperature will be approximately 25°.
4. The test concentration in the chamber will not be less than 50 nor more than 60 milligrams of silica dust per cubic meter.
5. The particle size distribution of the silica dust will have a geometric mean of 0.4 to 0.6 micrometer; the geometric standard deviation will not exceed 2.
6. The test will last 90 minutes with samples of the concentration taken every 30 minutes.

Based on the test results I recommend that the 8710, 8710S and 6983 be granted approval and extension of approval TC-21C-132 be granted.

References:

1. 30CFR11
2. Application letter, D. Wilmes, 2-17-87
3. QA Acceptance, R. Justisa, 3-23-87



8710

# 8710 Dust and Mist Respirator

**IMPORTANT — BEFORE USING RESPIRATOR,  
READ FITTING INSTRUCTIONS  
AND WARNING ON BOX.**

NIOSH/MSHA approved  
for dusts and mists  
(including asbestos & lead)\*  
Contents: 20 Respirators

## Warning:

1. As with the use of any respiratory device, the wearer must first be trained in the proper use of the product.
2. Before assigning any respirators to be worn, a qualitative or quantitative face fit test must be performed. Refer to OSHA regulations 1910.134 (e) (5).
3. This respirator removes only dusts and mists from the air. It is not designed to be used for protection against fumes, gases, vapors, paint spray operations or in atmospheres containing less than 19.5% oxygen.
4. Do not use when concentrations of contaminants are immediately hazardous to life and health, are unknown or when concentrations exceed 10X PEL.
5. Discard and replace respirator if it becomes damaged or breathing resistance becomes excessive.
6. Leave the contaminated area immediately if breathing becomes difficult or if dizziness or other distress occurs.
7. Never alter or modify this device.
8. Use of this or any respirator should be in accordance with applicable safety and health standards, respirator selection tables, or pursuant to the recommendations of an industrial hygienist.
9. Failure to follow all instructions and warnings on the use of this product and/or failure to wear this respirator during all times of exposure, can reduce respirator effectiveness and wearer protection.

**FOR MORE INFORMATION and assistance on 3M Brand Health and Safety Products, contact your local 3M representative or call OH&SP Technical Service Toll Free, 1-800-243-4630. In Minnesota, call (612) 733-6234. For Sales Assistance contact Toll Free, 1-800-328-1667. In Minnesota call (612) 733-8029. In Canada, contact 3M Canada Inc., P.O. Box 5757, Terminal A, London, Ontario, Canada N6A4T1. (519) 451-2500.**

3M CONFIDENTIAL

**3M**

**8710S**

# 8710S Dust and Mist Respirator

**IMPORTANT — BEFORE USING RESPIRATOR,  
READ FITTING INSTRUCTIONS  
AND WARNING ON BOX.**

NIOSH/MSHA approved  
for dusts and mists  
(including asbestos & lead)\*  
Contents: 20 Respirators

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## Warning:

1. As with the use of any respiratory device, the wearer must first be trained in the proper use of the product.
2. Before assigning any respirators to be worn, a qualitative or quantitative face fit test must be performed. Refer to OSHA regulations 1910.134 (e) (5).
3. This respirator removes only dusts and mists from the air. It is not designed to be used for protection against fumes, gases, vapors, paint spray operations or in atmospheres containing less than 19.5% oxygen.
4. Do not use when concentrations of contaminants are immediately hazardous to life and health, are unknown or when concentrations exceed 10X PEL.
5. Discard and replace respirator if it becomes damaged or breathing resistance becomes excessive.
6. Leave the contaminated area immediately if breathing becomes difficult or if dizziness or other distress occurs.
7. Never alter or modify this device.
8. Use of this or any respirator should be in accordance with applicable safety and health standards, respirator selection tables, or pursuant to the recommendations of an industrial hygienist.
9. Failure to follow all instructions and warnings on the use of this product and/or failure to wear this respirator during all times of exposure, can reduce respirator effectiveness and wearer protection.

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3M

3M CONFIDENTIAL

6983

6983

# Automotive Dust Respirator

**IMPORTANT — BEFORE USING RESPIRATOR, READ FITTING INSTRUCTIONS AND WARNING ON BOX.**



### WARNING

This respirator helps protect against certain dusts and mists. Misuse may result in sickness or death. For proper use, see supervisor or box or call 3M: 1-800-247-3941.

**DO NOT USE FOR PAINT SPRAY!**

FOR DUSTS AND MISTS TC-21C-132, 3M No. 6983

**NIOSH/MSHA approved for dusts and mists (including lead)\***

**Contents: 15 Respirators**

### Warning:

1. As with the use of any respiratory device, the wearer must first be trained in the proper use of the product.
2. Before assigning any respirators to be worn, a qualitative or quantitative face fit test must be performed. Refer to OSHA regulations 1910.134 (e) (5).
3. This respirator removes only dusts and mists from the air. It is not designed to be used for protection against fumes, gases, vapors, paint spray operations or in atmospheres containing less than 19.5% oxygen.
4. Do not use when concentrations of contaminants are immediately hazardous to life and health, are unknown or when concentrations exceed 10X PEL.
5. Discard and replace respirator, if it becomes damaged or breathing resistance becomes excessive.
6. Leave the contaminated area immediately if breathing becomes difficult or if dizziness or other distress occurs.
7. Never alter or modify this device.
8. Use of this or any respirator should be in accordance with applicable safety and health standards, respirator selection tables, or pursuant to the recommendations of an industrial hygienist.
9. Failure to follow all instructions and warnings on the use of this product and/or failure to wear this respirator during all times of exposure, can reduce respirator effectiveness and wearer protection.

**FOR MORE INFORMATION and assistance on 3M Brand Health and Safety Products, contact your local 3M representative or call OH&SP Technical Service Toll Free: 1-800-243-4630. In Minnesota, call (612) 733-6234. For Sales Assistance contact Toll Free, 1-800-328-1657. In Minnesota call (612) 733-8029. In Canada, contact 3M Canada Inc., P.O. Box 5757, Terminal A, London, Ontario, Canada N6A4T1. (519) 451-2500.**

Appendix C-2.2

## Fitting Instructions To Be Followed Each Time Respirator Is Worn



1. Cup the respirator in your hand, with the nosepiece at your fingertips, allowing the headbands to hang freely below your hand.



2. Position the respirator under your chin with the nosepiece up.



3. Pull the top strap over your head resting it high at the top back of your head. Pull the bottom strap over your head and position it around the back below the ears.



4. Place your fingertips from both hands at the top of the metal nosepiece.



5. Mold the nose area to the shape of your nose by pushing inward while moving your fingertips down both sides of the nosepiece.



Pinching the nosepiece using one hand may result in less effective respirator performance.

6. The seal of the respirator on the face should be fit-checked prior to each wearing. To check fit, place both hands completely over the respirator and exhale vigorously. If air flows around nose, readjust the nosepiece as described in step 4. If air leaks at the respirator edges, work the straps back along the sides of your head. If you **CAN NOT** achieve a proper fit **DO NOT** enter the contaminated area. See your supervisor.

### \*NIOSH/MSHA Approved

- I Dusts—Having a PEL (permissible exposure limit) not less than 0.05 milligrams per cubic meter of air, including but not limited to coal, cotton, cadmium, chromium, lead and manganese; or dusts having a PEL (permissible exposure limit) not less than 2 million particles per cubic foot of air, including but not limited to aluminum, flour, iron ore and free silica, resulting principally from the disintegration of a solid, e.g., dust clouds produced in mining, quarrying, and handling and in dust produced during industrial operations, such as grinding, crushing, and the general processing of minerals and other materials.
- II Mists -- Mists of materials having a PEL (permissible exposure limit) not less than 0.05 milligrams per cubic meter or 2 million particles per cubic foot, e.g., mist produced by spray cooling with viscous emulsions, chromic acid mist produced during chromium plating, and other mists of materials whose liquid vehicle does not produce harmful gases or vapors.

PERMISSIBLE  
RESPIRATOR FOR  
DUSTS AND MISTS

**MSHA**      **NIOSH**

APPROVAL NO. ZC 212132

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### Important Notice

WARRANTY, in the event of a defect in the product, shall be limited to the replacement of the product or a refund of the purchase price. 3M does not warrant the product to be free of defects or to be suitable for use in any particular application. The user shall be responsible for determining the suitability of the product for the intended application. THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OF QUALITY, EXCEPT OF TITLE AND AGAINST PATENT INFRINGEMENT.

LIMITATION OF LIABILITY: 3M shall not be liable for any consequential or special damages, including lost profits, arising out of the use of the product. THE REMEDIES SET FORTH HEREIN ARE EXCLUSIVE.

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