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

Some pages have poor copy quality – our originals look the same.
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 missed 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/m3 for total dust and 15 Mppcf or 5 mg/m3 for the respirable fraction. The ACGIH intends to change the TLV of all nuisance particulates to 10 mg/m3 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
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 successfully, 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/l 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 1.5. 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. Thope
Market Supervisor
Occupational Protection Products

CAT/M

c: F. W. Bishoff - OSHA
R. McCullum - OSHA
J. O'Neill - OSHA
OSHA Area Directors
OSHA Regional Administrators
August 3, 1972

Mr. Donald H. Williams
Occupational Protection Products
30 Company
2001 Hudson Road
St. Paul, Minnesota 55119

Dear Mr. Williams:

We have reviewed the documents supporting the proposed design change for your No. 6720 respirator.

From a quality control point of view we find the proposed change acceptable. We question, however, the legibility of the 5-point news print, condensed type in this application. We will, therefore, withhold final approval until such a specimen is furnished. May we please send a tangle nose clip as soon as possible?

Sincerely,

Richard Lester
Quality Control Section
Engineering Branch

C:
E. J. Kloos
Tom Belliff
D. C. File
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. Dyrd
Occupational Protection Products

JFD/dw
Enclosure

cc: Mr. Alan Gudeman

Rejected - Label too small.
<table>
<thead>
<tr>
<th>DRAWING NO.</th>
<th>DATE REVISED</th>
<th>REVISION NUMBER</th>
<th>PURPOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-2518-0003-6</td>
<td>4/6/72</td>
<td>E</td>
<td>Added optional weld pattern and removed optional staple note.</td>
</tr>
<tr>
<td>12-2518-0003-6</td>
<td>7/27/72</td>
<td>F</td>
<td>U.S. Bureau of Mines approval numbers moved from mask to nose clip.</td>
</tr>
</tbody>
</table>
Approval and Testing  

May 24, 1972

In reply refer to:

112-0399-966

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

Attention: Mr. James E. Corbin

Gentlemen:

With reference to your letter of March 29, 1972, requesting approval certification of EM's No. 8710 single-use dust respirator under 29 CFR, Part 11:

This certificate of approval NO-216-132 is granted to cover the EM No. 8710 single use dust respirator for respiratory protection against nonasbestos and asbestos producing dusts, excluding but not limited to aluminum, asbestos, coal, flour, iron ore or iron stellite.

The enclosed specification for preparing the approval label E-9009-9 applies. You may prepare your own label from this specification or wait for copies of the official label which we will send on your request. As soon as it is finished by our Graphic Services Department. To either case, please submit proofs of your label design before printing it. The label shall be reproduced on each respirator container. The approval number, NO-216-132 and the words "for Dusts" shall be legibly marked on each respirator.

Your quality control manual for production of the No. 8710 respirator was reviewed by the National Institute for Occupational Safety and Health. On the basis of their review and subsequent accepted amendments, your quality control manual is approved.

EM drawing number 12-2418-0003-5 applies.

Any changes you wish to make in this respirator shall be submitted to and a notification of this approval shall be granted before the changes are made. (Ref: Note 21, section 21.52)
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 publish 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-216-132 respirators for our record when they are commercially available.

Very truly yours,

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

cc:
A. K. Godman
KROH
2014 Broadway
Cincinnati, Ohio 45202

Rep: Lab
Ed Tice
AET

EK/10/6/75
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. Gidwitz, Chief  
Control Research Section  
Engineering Branch, BLM
Mr. James N. Gardin, Project Manager
Occupational Protection Products
1 N Company
P.O. Box 109
St. Paul, Minnesota 55162

Dear Mr. Gardin:

We have reviewed your Quality Control Manual submitted to the Bureau of Mines 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 111. Section 1, Purpose, should be revised to reflect this accurately. The last sentence then becomes superfluous.

3. Page 19, first line. "Form HBO-1.1 should be HBO-1."

4. Page 20, line 16 should read "Oxygen."

5. Page 29, bottom line should read "HBO-1.0DP."

6. Page 73 - The "M" in "1M" was illegible in copy # 1/08 of the manual.

7. Page 49 - (a) Specify flow rates and fillers areas to be tested and
(b) specify ICP aerosol size and concentrations used in tests.

8. Page 53 - (a) Specify flow rates and fillers areas to be tested,
(b) specify ICP aerosol size and concentrations used in tests, and
(c) provide sufficient data to substantiate the upper limits for acceptance.
Approval and Testing

United States Bureau of Mines
4900 Forbes Avenue
Pittsburgh, Pennsylvania 15233

March 29, 1972

Dear Sir:

We are submitting for approval, the "3M" Brand Respirator No. 6710, 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 5 million particles per cubic foot. Accompanying this letter are the test data, two cartons (30) of respirators, user's instruction sheet, the O.C. Manual and the respirator drawings.

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. # 3M 60710-1-2 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.12-0131-0003-6.

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. 6710 Respirator passes these tests and meets the airflow resistance requirements of Paragraphs 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 dust 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,

James E. Corbin
Project Manager
Occupational Protection Products

JEC/MN
MINNESOTA MINING AND MANUFACTURING COMPANY
PERMISSIBLE
RESPIRATOR
FOR DUSTS

APPROVAL NO. 230-132

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

The approved assembly consists of 230-230-132 respirator.

LIMITATIONS.
Approved for respiratory protection against pneumoconiosis and silicosis producing dusts.

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.

Specifications for preparation of Approval Labels.
### Chamber Data

<table>
<thead>
<tr>
<th>Test No.</th>
<th>Material</th>
<th>Ventilation</th>
<th>Tubing</th>
<th>Rate</th>
<th>Sampling Devices</th>
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<tr>
<td></td>
<td>Coal Dust</td>
<td>2K 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

### Respiration

<table>
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<tr>
<th>Exercise</th>
<th>Time</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>Cough, and head, turn head side to side (3)</td>
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<td></td>
</tr>
<tr>
<td>Smile (1-1/2)</td>
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<td></td>
</tr>
<tr>
<td>Praise (1-1/2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recite alphabet (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talk (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breathe, shallow and deep (3)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Reception Exam

- Observer: [Signature]
- Test Subject: [Signature]
- Date: 2-30-72
### Coal Dust Tests Using Various Respirators

<table>
<thead>
<tr>
<th>Chamber Data</th>
<th>Sampling Devices</th>
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</thead>
<tbody>
<tr>
<td>Test No.</td>
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</tr>
<tr>
<td>Material</td>
<td></td>
</tr>
<tr>
<td>Ventilation</td>
<td></td>
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<td>Pulling H/D</td>
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<tr>
<td>Test</td>
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<tr>
<td>Cyclone E.</td>
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<tr>
<td>Ejector E.</td>
<td></td>
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<tr>
<td>Respirator</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td></td>
</tr>
<tr>
<td>Exercise</td>
<td>0-15 min.</td>
</tr>
<tr>
<td>Cough, nod head, turn head side to side (2)</td>
<td>V</td>
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<tr>
<td>Smile (1-1/2)</td>
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</tr>
<tr>
<td>From (1-1/2)</td>
<td></td>
</tr>
<tr>
<td>Recite alphabet (1)</td>
<td></td>
</tr>
<tr>
<td>Talk (3)</td>
<td></td>
</tr>
<tr>
<td>Breath, shallow and deep (3)</td>
<td>V</td>
</tr>
</tbody>
</table>

Complete 9:30 am

Respirator came from Chamber loan.

Test Subject: Smith, Becht, Tony

Test Date: 10-2-69

Test Material: Coke Dust

Test Unit: Dust Blower 220
October 11, 1979

Mr. Donald P. Wilmes
Occupational Health and Safety
3-M Company, Building 222-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
NBollinger:mr:10/18/79

CONCUR: RS

QA

DSR
MEMORANDUM

TO: Don Wilmes
3M

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

DATE: September 6, 1979

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: TN00159
213-299-004

Richard N. Ronk

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

[Signature]

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

DPW/lw

[Box of 20 respirators]
TO: CHIEF RESPIRATION SEC.  
THROUGH: CHIEF, QUALITY ASSURANCE SECTION  
FROM: QUALITY ASSURANCE SPEC.  
DATE: 10 OCT 1974  
INVEST. NO.:  
TASK NO.: C00117  

NEW APPROVAL ☐  EXTENSION ☑  AUDIT ☐  OTHER ☐  

MANUFACTURER: 3M  
REFERENCE: 3M LETTER DATED AUG 20, 1974  

SUBJECT: EXTENSION OF TC-21C-132  

QUALITY CONTROL PLANS: ACC ☑  REJ ☐  DATE  
PERFORMANCE TEST: ACC ☑  REJ ☐  DATE  

STATUS OF TASK: COMPLETE ☑  IN PROCESS ☐  TERMINATED ☐  ACTION REQ. ☐  OTHER ☐  

APPROVAL #: MODEL P/L DATE  
01632 5710 6/25/79  

APPROVAL #: MODEL P/L DATE  

SUMMARY: APPROVAL INCORPORATES CHANGES MADE NECESSARY BY INTRODUCTION OF A NEW MANUFACTURING PROCESS FOR FILTER MATERIAL.
July 18, 1980

Mr. Donald P. Wilmes
Occupational Health and Safety
3-M Company, Building 330-B
3-M Center
St. Paul, MN 55101

Dear Mr. Wilmes:

With reference to your letter of January 16, 1980, requesting an extension of approval 10-230-131:

An extension of approval 10-230-131 is granted to cover the use of the 5710 respirator as respiratory protection against dusts having a mass median aerodynamic diameter (MMAD) less than 0.3 micrometers or 2 million particles per cubic foot. Your drawing list for the 5710 respirator dated June 25, 1979, applies to this extension of approval.

The above respirator cannot be used as protection against asbestos, silica or any other carcinogens.

Your revised quality control plan for the 5710 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-012514-C and T-012515-C shall be prepared for use on each 5710 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 warnings, for our approval, before adopting them. Please send us one complete 5710 respirator to be used as 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,

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

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

Dear Mr. Wilmes:

By letter dated July 10, 1980, the SM Company was informed that extension of approval TC-205C-232 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 superseded the July 18th letter with regard to this issue is intended to express the concern 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 endorsing approval of dust, fume, and mist respirators for use against asbestos and other carcinogenic substances without following appropriate administrative procedures. Section 11.120(b) of Subpart K mentions respirators with replaceable filters, designed as respiratory protection against asbestos-containing dusts and mists. Section 11.130(b) mentions single-use dust respirators designed as respiratory protection against pneumoconiosis and fibrosis-producing dusts, or dusts and mists, lacking but not limited to 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 mesotheliomas, 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(b) can only be viewed as misleading.
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 month) 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 10 CFR, Part 11. Sections 11.134(a)(3) and 11.136(c) 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 11.136(b) 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,

[Signature]

Ron R. May, Ph.D.
Special Assistant to the Director
NIOSH, for Testing and Certification
January 16, 1990

Jim Oppold

NIOSH

Testing & Certification Branch

944 Chestnut Ridge Road

Morgantown, W. Virginia 26505

Dear Dr. Oppold:

Referencing my letter to Mr. Doe Campbell dated January 3, 1990 and the reply dated January 15, 1990, we wish to resubmit the

3M 8710 Respirator (TC-21C-123) for an extension of approval.

We request approval under Subpart X 11.130 (a) Replaceable Filter Dust Respirator and 11.130 (b) 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,

Don Wilmes

Occupational Health & Safety Products Division

Bldg. 230-B

DPR/LW

attachment
MEMORANDUM

TO: Nancy Bollinger

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: JADpold
JMDay
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)

FROM: Chief, Quality Assurance Section, YC3

DATE: February 14, 1980

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, 95-2315-023.

Ralph J. Touch, Jr.
MEMORANDUM

FROM: Chemist, Respirator Section, TCR

SUBJECT: Extension of approval TC-210-132 to include dust and mist for TWA 0.5 mg/m³

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

The M720 dust respirator has passed all of our approval testing.

Please keep us informed of your progress on this project.

Part Numbers Affected: M720 Respirator

Cc: Nancy McGinnis Sollinger

Our Reference: TM00004
J-II's Request for Extension of Approval TC-210-132 to Include Dusts

Background

On January 16, 1980, J-II requested an extension of approval TC-210-132 (Model No. 8720 respirator) to include dusts having a time-weighted average (TWA) less than 0.5 mg/m³. The 8720 has been previously approved as a single-use respirator for use as respiratory protection against pneumoconiosis and fibrosis-producing dusts. This extension will allow the use of the 8720 for particulates produced by mechanical means such as grinding, crushing, and mining of minerals.

The 8720 is limited in its usage as follows:

1. Do not wear in atmospheres immediately dangerous to life or health.
2. Do not wear in atmospheres containing less than 19.5% oxygen.

Tests

Silica Dust Test 13.140-4

1. Resistance to air flow will be measured before and after test.
2. Three completely assembled respirators will be tested at a continuous airflow rate of 35 lpm.
3. The relative humidity in the chamber will be 20-80% and the room temperature will be approximately 24°C.
4. The test concentration in the chamber will not be less than 50 or 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 micrometers, 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.

Passed | Failed | Date
---|---|---
Passed | Failed | Date
Passed | Failed | Date
Passed | Failed | Date
Passed | Failed | Date
Passed | Failed | Date
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Passed | Failed | Date
Passed | Failed | Date
September 25, 1980

Mr. Donald Wilkes
Quality Assurance
Occupational Health and Safety
3M Company, Building 23b-2
3M Center
St. Paul, MN 55101

Dear Mr. Wilkes:

With reference to your letter of September 12, 1980, requesting an extension of approval TC-21C-132:

An extension of approval TC-21C-132 is granted to cover the use of the 8710 respirator for respiratory protection against mists having a time-weighted average not less than 0.03 milligram per cubic meter or 2 million particles per cubic foot.

Your revised 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 HSL. 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-012563-C and T-012515-C shall be prepared for use on each 8710 respirator container.

Designs of your labels must be submitted to HSL for approval before printing, and proofs of the printed labels must be submitted to HSL 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 used as part of the record of this extension of approval. We shall retain several other items as additional record material. All other material will be returned unless we are otherwise advised by you.

Sincerely yours,

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

CC:

FILE COPY
September 12, 1980

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/m³. 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,

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

DPW/1w

attachments/enclosures
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 ΔP vs silica dust penetration and ΔP correlation data. We wish to use this quick Q.C. test as our release test. Generally, our existing O.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. Hilmes
Quality Assurance
Occ. Health & Safety Prods.

DPW/jw
Subject of Application: EXT TC-24C-132

Type of Application: New  Extension  Update  Other

Manufacturers Description of Application Request

Extension to include waste having time-weighted average not less than 0.5 mg/m³

NEW MODELS CONTAINED IN APPLICATION FOR APPROVAL

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EXTENSION OF APPROVALS REQUESTED

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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

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

DATE: September 23, 1980

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: TN00550

cc:
Chief, TCB
Chief, FIG, TCB
Respirator Section File (Z)
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 mg/m³. 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/m³.  

**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/m³ 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**  

<table>
<thead>
<tr>
<th>Test</th>
<th>Inhalation Resistance (at 100% R.H.)</th>
<th>Exhalation Resistance (at 100% R.H.)</th>
<th>Chamber Concentration (mg/m³)</th>
<th>Leakage (mg)</th>
<th>Overall Test Type</th>
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<td>40</td>
<td>6.4</td>
<td>13.2</td>
<td>20</td>
</tr>
</tbody>
</table>

**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.  
EXTENSION OF APPROVAL APPLICATION FORM

Project Number 7400 550 Company 3M

Extension of approval made 9/12/80 to cover the use of
the 7710 as respirator protective equipment.

Parts List

Pre-test Data

Fee Set $300

Record Cards Filed 9/12/80

Log Book Entry 9/12/80

Respirator models and approval numbers affected:

TC-21C-132

Required Performance Tests for this Application

1) Street Passed / Failed Date 9/24/80
2) GP
3) Passed / Failed Date
4) Passed / Failed Date
5) Passed / Failed Date
6) Passed / Failed Date
7) Passed / Failed Date
8) Passed / Failed Date
9) Passed / Failed Date
10) Passed / Failed Date
11) Passed / Failed Date
12) Passed / Failed Date
13) Passed / Failed Date
14) Passed / Failed Date
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 weighted average) less than 0.05 mg/m³. 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/m³.

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/m³ 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

<table>
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<tr>
<th>Test</th>
<th>Inhilation Resistance (mm of H2O)</th>
<th>Exhalation Resistance (mm of H2O)</th>
<th>Chamber Concentration (mg/m³)</th>
<th>Leakage (mg)</th>
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<td>4.3</td>
</tr>
</tbody>
</table>

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.


3. QA Acceptance, Robert Justiss, September 25, 1980

**600 Problems According to Review Committee**
March 18, 1994

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

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
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
St. Paul, MN 55144
Authorized Representative Mr. D.P. Wilmes

Our Authorized 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  X Minor revision

G. Type of product X 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
X High Efficiency Particulate Air-Purifying (HEPA)
X Standard Efficiency Particulate Air-Purifying
X Single Use Filter  Replaceable or Reusable
Vapor & Gas Removing
Cartridge  ___Canister
___Non-Powered  ___Powered (PAPR)
Mouth Piece  ___Quarter Mask
X Half Mask  ___Full Facepiece
Hood  ___Helmet
Atmosphere Supplying: 

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<td>Mouth Piece</td>
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<td>Type A2</td>
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<tr>
<td>Demand</td>
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Combination air-purifying atmosphere supplying: Check all items above that apply.

Extension and Minor Revisions: Describe exactly and completely all changes and additions and what and how the previously approved product is affected. Specify related TC and TN numbers.

A minor revision to add alternate model, 8710 SIDOR Version. Other minor changes to the 8710 and 6982 respirator parts lists are described in the "Attachment to Section H. Current Submittal Summary." This revision does not affect the form, fit, function or performance of the respirators.

I. Intended protection and safe design

Air-Purifying: State all contaminants for which approval is sought:
Dusts and mists having a time-weighted average not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot.

Add additional sheets, if necessary, and label as "Section I. Intended Protection and Safe Design."

Atmosphere Supplying: The materials used in the construction of the respirator(s) may be exposed to oxygen at pressures above atmospheric pressure and are safe and compatible for their intended use.

Yes  No
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-055926 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-P-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]
Signature of Authorized Representative

D. P. Wilmes  3M/OH&ES  Bldg. 260-3A-07
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 affect 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
THROUGH:
FROM: Q.A. SPECIALIST
INITIALS:

NEW APPROVAL: Extension: Min. Rev.: X Other:
MANUFACTURER:
N/A

SUBJECT:
MINOR RVS TO 8710--INCLUDES VENEZUELAN

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P/L DATE

SUMMARY:
Certification and Quality Assurance Branch
Accountability Tracking Sheet

Company: 311  Nature of request: -

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

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<td>6. Samples received</td>
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</table>

9. Testing completed, review of results & report--
Met Requirements  Fails  Not Applicable

10. Review completed by QA--

11. Preparation of Approval/Failure documentation--

12. App/Fail doc. to K:\final--

13. Added to Certified Equipment List (NEW # only)--

14. Typing of documentation completed--

15. Final review by Preparer--

16. Email to MSHA (NEW # only)--

17. Signature of Branch/Section Chief--

18. Completion Date (as shown on final letter)--

Original copy to be placed in folder upon completion  Track 5.WH

No tests  VERIFIED
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-210-132

Dear Mr. Wilmes:

An extension of approval TC-210-132 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
Justice
Coffey

NTOSH:DSR:CB:krc:6-2-87, Doc. 2419E
May 22, 1987

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

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. O. P. Wilmes. His alternate is
Dr. D. W. Gosselin.

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.

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.
### Quality Assurance

- **Mfg Ltr Date**
  - TN#: 1
  - TN#: 2
  - TN#: 3

### Description of Application:

### New Models for Initial Certification:

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### New Models for Extension to NIOSH Certification:

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### Minor Revision or Extension of NIOSH Certification:

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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: 1-800-247-2941.

DO NOT USE FOR PAINT SPRAY!

FOR DUSTS AND MISTS TO: 81C-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 (a) (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 wear respirators when concentrations of contaminants are immediately hazardous to life and health, are unknown or when concentrations exceed TWA 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.

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: 1-800-247-3341.
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 respirator 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 enter concentrations of contaminants are immediately hazardous to life and health, are unknown or when concentrations exceed IDLH 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.

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

6. The seal of the respirator on the face should be checked prior to each wearing. To check fit, place both hands completely over the respirator and exhale vigorously. If air leaks around nose, readjust the nosepiece as described in step 4.

Impairment Notice

WARRANTY DISCLAIMER: RECOGNIZING THE LIMITATIONS OF ANY MANUFACTURER'S ABILITY TO INDETERMINATE FACTORS, MANUFACTURER MAKES NO WARRANTY EXPRESS OR IMPLIED OF QUALITY, EXCEPT OF TITLE AND AGAINST PATENT INFRINGEMENT. LIMITATION OF LIABILITY: IN NO EVENT SHALL MANUFACTURER BE HELD LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES, WHETHER DIRECT, INDIRECT, OR INCIDENTAL ARISING FROM THE USE OR INABILITY TO USE THIS PRODUCT. ANY IMPLIED WARRANTIES ARE LIMITED TO THE PERIOD OF TIME SHOWN HEREIN AND EXCLUSIVE.
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
May 14, 1987

Mr. Donald Williams
3M Company
3M Center: 4154, 260-3-12
St. Paul, Minnesota 55144

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

Subject: Extensions of Approvals TC-216-132 and TC-216-401

Dear Mr. Williams:

Extensions of approvals TC-216-132 and TC-216-401 are granted to cover the use of an alternate cover web and the addition of the "Dustman" warning label.

Your temporary lists dated 3/9/87 for the 2710, 9920 (TC-216-132), 9710, 3716 and 3700 (TC-216-401) respirators apply to these extensions of approvals.

Your revised quality control plan for the above respirators was reviewed by us. 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,

[Signature]

Nancy J. Holliker, Chief
April 16, 1987

Ms. Nancy Belling
NIOSH Certification Lab, Room 16
944 Chestnut Ridge Road
Morgantown, WV 26506

Dear Ms. Belling:

Robert Justias called Jim Woodward of our QA group this afternoon to discuss our March 30, 1987 submission on 8710' / 9783 (NIOSH Task 03716).

Mr. Justias asked that we add the numbers 0-41-7500-7070-2-V18-2 and 0-41-7500-7133-5-V18-2 for the visual standards for printing of the US versions of 8710 (70-0701-7268-2) and 9783 (70-0701-7261-5) 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. Justias also asked that we revise this submission to include the newly received Approval Number (TO-210C-401) for the international versions of 8710 and 9783. 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
OHASB Division / 3M
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.
OHAS, Bldg 260-3-02
3M Center
St. Paul, MN 55144

Our NIOSH representative is Mr. D. P. Wilmes. His alternate is Dr. D. L. Gosselin.

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-210-132 (October 20, 1986) and TC-210-____ (____/____) as shown in the enclosed Appendix B.

User instructions enclosed as Appendix C are the same as our February 17, 1986 submission (amended March 8 and March 17) - NIOSH task number 02680.

Samples are enclosed for your evaluation of the US versions of 5710 and 5885 which have been printed with the "Dustman" warning label. We are seeking an extension of TC-210-132 for this product. We are also
We are also seeking a new approval for the international versions 9710, 9710S, and 6963 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 03880 - 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 component 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, 9710 international would be printed:

3M No. 9710
For Dusts and Mists
TC-210—

The filter media in all products is identical, so filtration performance should be similar for all products. We are including samples of US versions 9710 and 6963 with the submission, as well as 3M test results for both products.

Enclosed as Appendix D are Component 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 512-733-4935, should you wish to discuss technical details of the submission.

Regards,
PERMISSIBLE RESPIRATOR FOR DUSTS AND MISTS

MINESAFEY 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 0.5 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: April 16, 1987
From: Chief, Air Purifying Respirator Section GB
       Division of Safety Research
Subject: Your request for see 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: 49 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:
Extensions of Approvals TC-21C-132 and TC-21C-401

Background:
On March 30, 1987, NMM requested approval to use an alternate cover web in their S710, S710S 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°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 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:
8710 Dust and Mist Respirator

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.


NIOSH/MSHA approved
for dusts and mists
(including asbestos & lead)*
Contents: 20 Respirators
8710S
Dust and Mist Respirator

Warning:
1. As with the use of any respiratory device, the wearer must be trained in the proper use of the
device. The wearer must be completely familiar with all instructions for use of the device.
2. Before assigning any respirators to be worn, a qualitative or quantitative face fit test must be performed.
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 the 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.

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

2. Never alter or modify the device.
3. 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.

For more information and assistance on 3M Brand Health and Safety Products, contact your local
3M representative or call 866-678-2287. In Minnesota, call (866) 733-6234. For Sales
Assistance contact Toll Free:
1-800-926-4350. In Minnesota, call (866) 733-6234. In Canada, contact:
3M Canada Inc., P.O. Box 7572, Terminal A, London, Ontario,
Canada N5A 4T1. (519) 451-2500.
6983
Automotive Dust Respirator

Important — Before using respirator, read Fitting Instructions and Warning on box.

NIOSH/MSHA approved for dusts and mists (including asbestos & 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 respirator 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 mists 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 1-800-243-3600. In Minnesota, call 612-731-6234. For sales assistance contact Toll Free, 1-800-251-1057. In Minnesota call 612-731-8029. In Canada, contact 3M Canada Inc., P.O. Box 5757, Terminal A, London, Ontario, Canada N6A4T1, (519) 451-3506.
8710 Dust and Mist Respirator

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 respirator to be worn, a qualitative or quantitative face fit test must be performed. Refer to OSHA regulations 1910.134 (a) (8).
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 wear 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.

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

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: 1-800-243-5941.

DO NOT USE FOR PAINT SPRAY
FOR DUSTS AND MISTS TC-21C-132, 3M No. 8710.
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 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 (A)(3).
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.

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 loosely below your hand.

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

3. Pull the top strap over your head and position it around the neck below the ears.

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

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

6. Pinch the nosepiece using one hand until it is less effective respirator performance.

7. The seal of the respirator should be checked prior to each wearing.

8. Exhale vigorously, if air flows around nose, adjust the nosepiece as described in step 4.

9. If air leaks at the respirator edges, work the strap back along the sides of your head. If you CAN NOT achieve a proper seal, DO NOT enter the contaminated area. See your supervisor.

NOSHMISHA Approved

I Desire - Having a PEL (Permissible Exposure Limit) not less than 600 micrograms per cubic meter of air, including but not limited to cotton, cadmium, chromium, lead and manganese in dusts having a FEL (Geometric Mean Exposure Limit) not less than 1 million particles per cubic foot of air, including dusts and fumes produced by welding, grinding, or cutting steel, and the inhalation of silica, dusts produced by cutting, grinding, and sanding, and the inhalation of airborne manganese, lead, and other materials.

II. Mail - Most of maintenance involving a FEL (Permissible Exposure Limit) not less than 1 million particles per cubic meter, including dusts produced by cutting, grinding, and the inhalation of silica, dusts produced by cutting, grinding, and the inhalation of airborne manganese, lead, and other materials. It is recommended that this respirator be washed after use to remove dusts and fumes produced by welding, grinding, or cutting steel, and the inhalation of silica, dusts produced by cutting, grinding, and sanding, and the inhalation of airborne manganese, lead, and other materials.

II. Mail - Most of maintenance involving a FEL (Permissible Exposure Limit) not less than 1 million particles per cubic meter, including dusts produced by cutting, grinding, and the inhalation of silica, dusts produced by cutting, grinding, and the inhalation of airborne manganese, lead, and other materials. It is recommended that this respirator be washed after use to remove dusts and fumes produced by welding, grinding, or cutting steel, and the inhalation of silica, dusts produced by cutting, grinding, and sanding, and the inhalation of airborne manganese, lead, and other materials.

Warranty: This respirator is warranted by 3M meets the requirements of applicable regulations. 3M makes no warranty of merchantability or fitness for a particular purpose. In the event of any dispute arising out of the use of this respirator, 3M's sole and exclusive remedy is the exchange of the respirator. All other claims are expressly disclaimed and the user agrees to defend, indemnify, and hold 3M harmless from and against any and all claims, damages, losses, judgments, and expenses arising out of the use of this respirator.
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 pass it around the neck below the ears.

4. Place your fingertips at both ends of the headbands at the top of the mask 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.

6. The seal of the respirator on the face should be fit checked prior to each wearing. To fit the respirator, place both hands on the respirator and exhale vigorously. If air flows around nose, readjust the nosepiece as described in step 4.

7. A tight seal on the respirator face is needed for proper respiration.

NOSH/MSHA Approved

Dusts—Having a PC and respirable dust that is dustier than 0.35 respirable dust per cubic meter of air, including but not limited to dust, cotton, calcium, aluminum, and magnesium, or dusts having a PC of more than 0.35 respirable dust per cubic meter of air, including but not limited to aluminum, coal, iron ore, and free silica, resulting in the possibility of severe respiratory disease. By using the respirator, you are brevity in an environment where you may be exposed to these materials.
October 6, 1986

Nancy Ballinger
NHC
Testing & Certification Laboratory
844 Chestnut Ridge Road
Morgantown, WV 26505

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

Dear Ms. Ballinger:

We wish to remove asbestos approval for the following respirators:

TC-2102-132
-5710, 8599, 8983

Our new representative is Mr. D. D. Williams. His alternate is
Mr. D. W. Gosselink.

Please notify our NHC representative of required fee.
Respirator systems involved in this request are air-purifying respirators.

Approval label draft, Appendix B
User instructions & packaging, Appendix C
Attached

Thank you for your assistance.

Sincerely,

Donald E. Wiles
DMSP Division
Building 280-3A-02
CPT Jak
Our References: 11-6299

October 20, 1986

Mr. Ronald P. Wilmes
3M Company
3M Center, D5G 250-2-2
St. Paul, Minnesota 55144

Reference: Your letter of October 8, 1986

Subject: Extensions of Approvals

Dear Mr. Wilmes:

Extensions of approvals as set forth in the enclosed list are granted to cover the removal of asbestos containing dusts and fumes.

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 in part of these extensions of approvals.

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 samples 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. 8654 and 8520 (TC/210-132) are not approved by MSHA/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
October 14, 1988

[Signature]

[Company]

[City, State, Zipcode - 1988]

[Signature]

[Company]

[City, State, Zipcode - 1988]

To the Certification Officer, Division of Safety Research, I have received the following information for the 1988 certification program:

Date of Application: October 6, 1988

Subject of Application: Removal of Ash tests Approval for Non-high Efficiency Products

[Handwritten numbers: 12/2/87]

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<td>2. Preparation of analytical</td>
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[Handwritten note: L.A.I.]
ITEM:

8) Parts List Provided
   Yes
   1 Copy

9) Parts List Included
   Yes
   Drawing Number & Revision
   Part Number & Date
   Classification of Defect
   Revisions Level
   Specification & Revision Level
   Title or Part/Sequence

10) Engineering Documents
    Yes
    1 Copy

See P.104 letters for original engineering document requirements.

11) Quality Assurance manual
    Yes if New
    or Revised

Addl. Comments are attached in addition to the attached copy of your application letter dated October 4, 1981.

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 requested. If no response is received at the end of this period, the project will be terminated and all material returned.

Please advise if you wish us to furnish further advice.

Sincerely yours,

Clyde J. Bellinger, Chief
Certification Branch
Division of Safety Research

cc:
Coffey
Justice
Perry
Powell
Hill
Simple to put on

1. Place respirator with nosepiece at top of head. Pull strap over head and position at back of head. Pull the hook of the strap under the chin.

2. Canister -- insert with nosepiece at bottom, allowing headstrap to hang freely below head.

3. Canister under chin with nosepiece at top, next to nose.

Warning:

1. This respirator contains only dusts and mists. It is recommended for use in areas where a low concentration of particulate matter is present. It is not suitable for use in areas with high concentrations of particulate matter.

2. If the mask does not fit properly, it may not provide adequate protection.

3. If you are unsure of the concentration of particulate matter, consult a qualified professional.

NIOSH/MSHA approved **
for dusts and mists

CLEAR VISION
Low profile design lets you see where you are going. When you are there. Glasses or safety goggles.

MAINTENANCE FREE
Nothing to clean. Just throw it away.

LIGHTEST
Weight less than half the weight of a hardhat.

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

EASY BREATHING
Sounding and speaking normally. You'll be easily understandable at normal tones.

TECHNICAL SPECIFICATIONS

Weight: 30 grams
Material: Polyurethane
Filter: N95
Filter Efficiency: 95%

Occupational Health and Safety Products Division
3M
2001 3M Center
St. Paul, MN 55144
3M Customer Service: 1-800-328-1371

Copyright © 1985 3M Company
All rights reserved.
General Dust and Sanding Respirator

Quantity:
1 Box 15 Respirators

8560/8710*
General Dust and Sanding Respirator

NIOSH/MSHA approved**
for dust and mist

* 8560 is part no. only. Package contains 15, 8710 NIOSH/MSHA approved respirators.
** Reference to NIOSH/MSHA approval is for 8710 respirator only.
Simple to put on

1. Pull loop over head and position at top back of head. Pull lower loop over head and position around nose bridge area.

2. Pull head band snugly around head.

3. Using both hands, adjust nosepiece to shape of nose.

4. To check fit,, pull the handles over ears and outside face. If air flows around nose, tighten nosepiece. If an area on the respirator edge, wrap fingers back along the side of the head. If you cannot achieve a proper fit, return to sterilized area. See your supervisor.

WARNING:

1. This respirator provides only dust protection. It is not designed to be used by people with impaired vision, hearing, or those with any condition that may make it difficult to hear and understand verbal instructions.

2. Use this respirator only when you are wearing hearing protection when necessary, as required by the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA).

3. Do not use this respirator if you have any allergies or are allergic to the contents of the respirator.

4. Leave the respirator unattended when not in use or during breaks.

5. Use of this respirator should be supervised by a qualified and authorized workplace safety officer.

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

CLEAR VISION
Large vision design allows you to work where you are going. Just put on, Breathe well, have a clear view.

EASY BREATHING/
SPEAKING
Breathes and speaks normally. You'll be easily understandable.

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

LIGHTWEIGHT
Weight is less than half the weight of any traditional styles.

CONTOURED
Soft metal nosepiece adapts closely with nose, bridge of nose.
Non-woven filter material pancake shape, comfort of the nose, select from.

Automotive Trade Division 3M
223-6NW, 3M Center
St. Paul, MN 55144
MADE IN U.S.A.
PERMISSIBLE RESPIRATOR FOR DUSTS AND MISTS

MINESAFETY 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.

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

MINNEAPOLIS 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.

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 3M part numbers: 8710, 8530 or 8983 (TC-21C-132) respirator.
November 6, 1986

Ms. Nancy Bollinger
NIOSH
Certification Lab, Room 15
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. Bosselink. NIOSH to notify our representative of required fees.

If you have any questions, please contact me.

Very truly yours,

[Signature]
D.P. Wilmes
GH&SP Division/3M
Bldg. 260-3-02

BPM/gp
enclosures
<table>
<thead>
<tr>
<th>Approval Number</th>
<th>Model Number(s)</th>
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<tr>
<td>TC-21C-132</td>
<td>8710, 6983, 8550</td>
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</table>
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
Simple to put on

1. Place the hard exhalation valve on the face and place the headband around the head, making sure it's even all around.
2. Pull on the chin straps behind the ears.
3. Secure the noseclip to the nose to keep the mask in place.
4. Pull the headband behind your head and adjust to fit your face.

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

CLEAR VISION
Low profile design lets you see what you are doing. Easier to wear glasses or safety goggles.

LIGHTWEIGHT
Weights less than half the weight of a handkerchief.

CONTOUR FIT
Soft, metal nosepiece adapts closely over bridge of nose. Non-woven filter material conforms contiguously to facial features.

EASY BREATHING/SPRINGING
Breathes and speaks normally. You'll be easily understandable at normal tones.

MAINTENANCE FREE
A one day mask will throw it away; nothing to clean.

WARNING
This respirator removes only dusts and mists from the air.

1. It is for use in industries and workplaces where the concentration of airborne dusts and mists is less than 10 times the PEL.
2. Do not use in situations where the concentration of contaminants are hazardous to life or health or where concentrations exceed the PEL.
3. Do not use the respirator if it appears damaged or missing required parts.
4. Exposed to contaminants and immediately discards the respirator if used outside of the workplace or where the respirator may become contaminated.
5. Replace or throw away the respirator when it becomes contaminated or exposed to any hazardous conditions.

NOTE: Before using any respirator, refer to the manufacturer's instructions on respirator usage.
NIOSH/MSHA approved for dusts (including asbestos & lead dusts)

3M Automotive Dust Respirator

Part No. 021200 06983

Quantity: 1 Box 15 Respirators
AUTOMOTIVE DUST RESPIRATOR

6983 Automotive Dust Respirator

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

Part No. 021200 06983

Quantity: 1 Box 15 Respirators
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/1w
attachments
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/1w
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-210-132

Dear Mr. Wilmes:

An extension of approval TC-210-132 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
PIC
R. Justiss

CCoffey:nkr:6/30/82

CONCUR: RS
June 7, 1982

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
Occupational Health and Safety Products Division/3M

/js

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

TO: Technical Report Reviewer

FROM: Acting Chief, TCE

DATE: 6/30/82

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.

Dr. Warren R. Myers 6/30/82
signature of reviewer 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
DATE QA ACCEPTED 6-26-68

PROJECT # 01123

MANUFACTURER 3m

LETTER DATED Dec 17 1967

Subject of Application:

Type of Application: New Extension Update Other

Manufacturers Description of Application Request

Change Letter Media 1-8710

Entire Letter Removed

NEW MODELS CONTAINED IN APPLICATION FOR APPROVAL

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EXTENSION OF APPROVALS REQUESTED

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<td>2-12-63</td>
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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 m²/minute shall be used.

3. Air exhaled through the respirator will be 35°C ± 2°C 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.
The Testing and Certification Branch has received the following application for the NIOSH certification program:

Date of Application: **Jul 17, 1984**

Date Received by NIOSH: **Jul 24, 1984**

Subject of Application: **Extension of 29 CFR 1910.138**

Change in Filter Media

Task Number Assigned: **T-01178**

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<td>7) Fees</td>
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**Note:** The Form 138 has been signed in the lower left corner with the date **Mar 15, 1985**.
8710
Dust and Mist Respirator

New Approval

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

Contents: 20 Respirators

Simple to put on

Warning

*If you have any special requirements regarding the respirator, be sure to consult your doctor or other qualified health professional before using.
8710 Dust and Mist Respirator

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

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

MAINTENANCE FREE
All you need is a wash
Every 30 days

INSTRUCTION
EASY BREATHING

AND HERE'S THE PROOF: BETTER PROTECTION, PEACE OF MIND.

3M Occupational Health and Safety Products Division
2200 W. 3M Center
St. Paul, MN 55113
Made in U.S.A.
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. 26-J-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 3710 and 6983 respirators and the removal of models 8520 and 8550 and the steel noseclip version of the 4710 respirator.

Your drawing lists dated 3-17-87 for the 3710 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
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 10, 1987 (NIOSH Task Number 03663).

Submitted for approval for Dusts/Mists having a PEL not less than .05 mg per m³ and asbestos containing ducts and mists are the international versions of the 3M 8710 (aluminium 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 612-773-4985, 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
- User Instructions
- Systems & component parts list
- Required prints and C/Ds
- Finished Product Standards

Appendix B
Appendix C
Appendix D
Appendix E
Appendix F

Regards,

[Signature]

D. P. Wilmes
OH&SP Division / 3M
Bldg 260-3-02
3M Center
St Paul, MN 55144
March 6, 1987

Ms. Nancy Bollinger
NIOSH
Certification Lab, Room 1C
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 m³ 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 use 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 6620 and 6650 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. Gosselin. 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
- User instructions
- Systems & component parts list
- Required prints and C/Ds

Appendix B
Appendix C
Appendix D
Appendix E

Regards,

D. P. Wilmes
OH&SP Division / 3M
Bldg 260-3-02
3M Center
St Paul, MN 55144
March 17, 1987

Chief, Air Purifying Respirator Section CB
Division of Safety Research

Your request for fee and/or additional test material

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

Christopher C. Coffey

cc: Project File
    Manufacturer File
February 17, 1987

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

Dear Ms. Bollinger:

Submitted fog approval for Dust/Mists having a PEL not less than .05 mg per m^2 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
Approval Label Draft
User instructions Draft
Systems & component parts list
Required prints and C/Ds
Finished Product Standards

Appendix A
Appendix B
Appendix C
Appendix D
Appendix E
Appendix F

Regards,

D. P. Wilmes
OH&SP Division/3M
PERMISSIBLE RESPIRATOR FOR DUSTS AND MISTS

MINING 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.
PERMISSIBLE RESPIRATOR FOR DUSTS AND MISTS

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

APPROVAL NO. TC-21C-401

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 and asbestos containing dusts and mists.

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.
NEW MODELS FOR INITIAL CERTIFICATION:

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EXTENSION OF APPROVAL APPLICATION FORM

Project Number T NO3643 Company 3 M
Extension of approval made 2/17/67 to cover

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Log Book Entry: 11/30/67 3/11/68

Respirator models and approval numbers affected:
TC-216-1328710 9723

Required Performance Tests for this Application

1) Silica dust - cont. flow  Passed  Failed  Date 3-2-87
2)  
3)  
4)  
5)  
6)  
7)  
TN03663
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 headbands.

3M also requested an extension of approval (TC-21C-132) to cover updates 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 product.

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°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 0.4 to 1.6 micron, 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, 8710B 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, S. Justiss, 3-23-87
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 respirator to be worn, a qualitative or quantitative face fit test must be performed.
3. Refer to OSHA regulations 1910.134(e)(5).
4. This respirator removes only dusts and mists but will not provide protection against fumes, gases, vapors, paint spray operations or in atmospheres containing less than 19.5% oxygen.
5. Do not use this product or when concentrations exceed 250 PEL.
6. Do not discard replace respirator if it becomes damaged or breathing resistance becomes excessive.
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 1-800-444-ESP.

Technical Service Toll Free, 1-800-243-4420.
In Minnesota, call (800) 723-6934. For Sales Assistance contact Toll Free, 1-800-358-1667.
8710S
Dust and Mist Respirator

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 respirator 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.

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: 1-800-274-3941.
DO NOT USE FOR PAINT SPRAY!
FOR DUSTS AND MISTS TC-21C-02, 3M No. 6993

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 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 (a) (6).
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 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.

Fitting Instructions To Be Followed Each Time Respirator Is Worn

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

2. Position the respirator under your nose 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 over 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.

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 your face, 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

1. Dusts—Having a PEL permissible exposure level not less than 0.50 mg/m³ (2.0 mg/L) as an 8-hour time-weighted average (TWA) that contains any pre-existing dusts and/or mists. Dusts having a PEL permissible exposure level not less than 0.50 mg/m³ (2.0 mg/L) as a 15-min. period average (PCA) that contains any pre-existing dusts and/or mists.

II. Melts — Melts of materials having a T.I. generation exposure level of less than 5.0 mg/m³ as an 8-hour time-weighted average (TWA) or 15-min. period average (PCA) that contains any pre-existing dusts and/or mists. Melts of materials having a T.I. generation exposure level of less than 5.0 mg/m³ as an 8-hour time-weighted average (TWA) or 15-min. period average (PCA) that contains any pre-existing dusts and/or mists.

Important Notice

WARRANTY: The manufacturer hereby warrants to the original purchaser that the products described in this manual shall be free from defects in material and workmanship and will perform in accordance with the specifications and limitations set forth herein for a period of one (1) year from the date of purchase, unless otherwise noted. This Warranty is exclusive and is given in lieu of any implied warranty, including any implied warranty of merchantability or fitness for a particular purpose. The remedies set forth herein are exclusive.