



DEPARTMENT OF HEALTH & HUMAN SERVICES

NIOSH Reference: TN-21494  
Mfr. Reference: MAK-1706

Centers for Disease Control  
and Prevention (CDC)

National Institute for Occupational  
Safety and Health (NIOSH)  
National Personal Protective  
Technology Laboratory (NPPTL)  
626 Cochran Mill Road  
Pittsburgh, PA 15236-0070  
Phone: 412-386-4000  
Fax: 412-386-4051

July 19, 2017

CORRECTED LETTER  
ISSUED: August 9, 2017  
(Changes from original in bold)  
(Original enclosures are not included)

Mr. Alexander Freedman  
Makrite Industries, Inc.  
105 Palmer River Road  
Swansea, MA 02777

Dear Mr. Freedman:

The National Institute for Occupational Safety and Health (NIOSH) has reviewed your request accepted March 21, 2017. This request was for approval of the MAK699+ air purifying filtering facepiece respirator for protections against particulates at a N95 filter efficiency level. Reference assembly matrix **MAK699+AMaR0.xls** and dated 02/26/2017.

This request is granted. Approvals are granted only for documentation written in the English language. It is the manufacturer's responsibility to correctly translate materials desired in languages other than English. Approval number TC-84A-7841 has been assigned. This respirator is approved for protection against particulates at a N95 filter efficiency level.

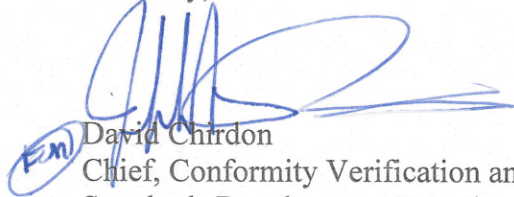
The final respirator approval label is included as an attachment to this letter. The abbreviated label has been accepted as submitted. The cautions and limitations which apply to this approval are on the approval label. Only those assemblies affected by this request, or where new approval numbers are assigned, apply to this approval action. Production approval labels cannot include information on unapproved configurations.

The approved assembly consists of the parts as listed on the approval label and the assembly matrix. Parts are to be marked with the numbers indicated on the approval label in a legible and permanent manner (marking cannot be removed without evidence of its previous presence).

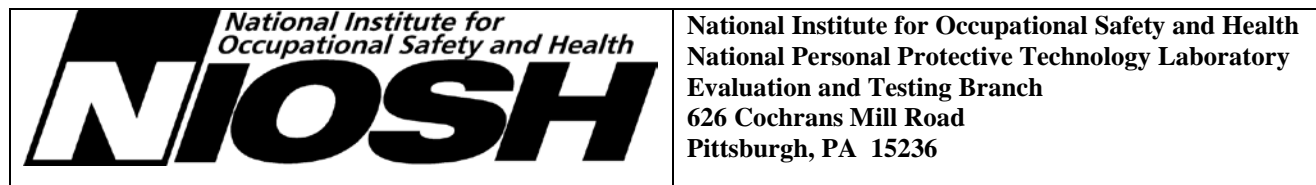
This certificate of approval is not an endorsement of the respirator by NIOSH, and such endorsement shall not be stated or implied in advertisements or other publicity. However, you may publicize the fact that this respirator has met the requirements of Title 42, *Code of Federal Regulations*, Part 84 (42 CFR 84).

No changes may be made to any respirators and accompanying documentation without prior written approval of NIOSH. Requests for changes must be submitted to NIOSH and a modification of this approval must be granted before changes are made.

Sincerely,

A handwritten signature in blue ink, appearing to be 'David Chirton', with a large flourish extending to the right. To the left of the signature, there is a small, circled handwritten mark that looks like 'EM'.

David Chirton  
Chief, Conformity Verification and  
Standards Development Branch



**TEST REPORT**

**Task Number:** 21494

**Manufacturer:** Makrite Industries, Inc.

**Prepared by:** Nichole Petitta

**Date:** April 13, 2017

**Tests Conducted by:** Nichole Petitta

**Respirator Tested:** MAK699+

**Background Information**

Respirator tested as per test request.

**Tests Assigned**

<b>Test Description</b>	<b>STP Number</b>
A. Exhalation Resistance	TEB-APR-STP-0003
B. Exhalation Valve Leakage Test	TEB-APR-STP-0004
C. Inhalation Resistance	TEB-APR-STP-0007
D. Sodium Chloride (NaCl) N95 Test	TEB-APR-STP-0059

**Overall Results**

The respirator system tested did meet the requirements of one or more of the procedures listed above.

**National Institute for Occupational Safety and Health  
Respirator Branch  
Test Data Sheet**



**Task Number:** TN-21494

**Reference No.:** CFR 84.180

**Test:** Exhalation Resistance Test

**STP No.:** 3

**Manufacturer:** Makrite Industries, Inc.

**Filter Type:** Filter Only

**Item Tested:** MAK699+

Sample	Maximum Allowable Resistance (MM of H2O)	Actual Resistance (MM of H2O)	Result
	Exhalation	Exhalation	
1	25	7.3	PASS
2	25	6.7	PASS
3	25	6.9	PASS

**Overall Result:** PASS

**Comments:**

Samples were tested on manometer 000283.

Was all equipment verified to be in calibration throughout all testing?  Yes  No

**Signature:**

**Date:** 4/12/2017

**Engineering Technician**

**Task Number:** TN-21494  
**Test:** Exhalation Resistance Test  
**Manufacturer:** Makrite Industries, Inc.

**Reference No.:** CFR 84.180  
**STP No.:** 3

**Signature:**



**Date:** 4/12/2017

**Engineering Technician**

**National Institute for Occupational Safety and Health  
Respirator Branch  
Test Data Sheet**



**Task Number:** TN-21494

**Reference No.:** CFR 84.182

**Test:** Exhalation Valve Leakage Test

**STP No.:** 4

**Manufacturer:** Makrite Industries, Inc.

**Item Tested:** MAK699+

<b>LEAKAGE</b>						
<b>Sample</b>	<b>Trial #1 (mL/min.)</b>	<b>Trial #2 (mL/min.)</b>	<b>Trial #3 (mL/min.)</b>	<b>Average (mL/min.)</b>	<b>Maximum Allowable (mL/min.)</b>	<b>Result</b>
<b>Valve 1</b>	13.90	14.63	15.85	14.79	30.00	PASS
<b>Valve 2</b>	25.84	25.10	24.02	24.99	30.00	PASS
<b>Valve 3</b>	0.00	0.00	0.00	0.00	30.00	PASS
<b>Overall Result: PASS</b>						

**Signature:**

**Date:** 4/17/2017

**Engineering Technician**

**Task Number:** TN-21494

**Reference No.:** CFR 84.182

**Test:** Exhalation Valve Leakage Test

**STP No.:** 4

**Manufacturer:** Makrite Industries, Inc.

**Item Tested:** MAK699+

**Comments:**

Samples were tested on Gilibrator 000494.

Was all equipment verified to be in calibration throughout all testing?  Yes  No

**Signature:**



**Date:** 4/17/2017

**Engineering Technician**

**National Institute for Occupational Safety and Health  
Respirator Branch  
Test Data Sheet**



**Task Number:** TN-21494  
**Test:** Inhalation Resistance Test  
**Manufacturer:** Makrite Industries, Inc.  
**Item Tested:** MAK699+

**Reference No.:** CFR 84.180  
**STP No.:** 7

**Filter Type:** Filter Only

Sample	Maximum Allowable Resistance (MM of H2O)	Actual Resistance (MM of H2O)	Result
	Inhalation	Inhalation	
1	35	10.6	PASS
2	35	10.3	PASS
3	35	9.2	PASS

**Overall Result:** PASS

**Signature:**

**Date:** 4/12/2017

**Engineering Technician**

**Task Number:** TN-21494  
**Test:** Inhalation Resistance Test  
**Manufacturer:** Makrite Industries, Inc.  
**Item Tested:** MAK699+

**Reference No.:** CFR 84.180  
**STP No.:** 7

**Comments:**

Samples were tested on manometer 000285.

Was all equipment verified to be in calibration throughout all testing?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
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**Signature:** 

**Date:** 4/12/2017

**Engineering Technician**

**National Institute for Occupational Safety and Health  
Respirator Branch  
Test Data Sheet**



**Task Number:** TN-21494

**Reference No.:** CFR 84.181

**Test:** Sodium Chloride (NaCl) - N95

**STP No.:** 59

**Manufacturer:** Makrite Industries, Inc.

**Item Tested:** MAK699+

Filter	Flow Rate	Initial Filter Resistance	Maximum Allowable Percent Leakage	Initial Percent Leakage	Maximum Percent Leakage	Result
1	85	10.3	5.00	2.170	2.170	PASS
2	85	12.5	5.00	1.360	1.820	PASS
3	85	11.2	5.00	1.230	1.700	PASS
4	85	10.5	5.00	0.625	1.060	PASS
5	85	11.5	5.00	1.370	2.000	PASS
6	85	10.7	5.00	1.260	1.860	PASS
7	85	11.4	5.00	1.110	1.560	PASS
8	85	10.9	5.00	1.250	1.950	PASS
9	85	11.3	5.00	1.250	1.860	PASS
10	85	11.1	5.00	1.180	1.740	PASS
11	85	10.8	5.00	1.200	1.890	PASS
12	85	10.5	5.00	0.907	1.460	PASS
13	85	10.9	5.00	1.170	1.700	PASS
14	85	11.3	5.00	1.940	2.710	PASS
15	85	11.1	5.00	1.420	1.980	PASS
16	85	11.7	5.00	1.430	1.880	PASS
17	85	10.8	5.00	1.320	1.870	PASS
18	85	11.3	5.00	1.330	1.770	PASS
19	85	10.2	5.00	1.430	1.950	PASS
20	85	11.2	5.00	1.630	1.990	PASS

**Overall Result:** PASS

**Signature:**

*Nichole L. Petetta*

**Date:** 4/12/2017

**Engineering Technician**

**Task Number:** TN-21494

**Reference No.:** CFR 84.181

**Test:** Sodium Chloride (NaCl) - N95

**STP No.:** 59

**Manufacturer:** Makrite Industries, Inc.

**Item Tested:** MAK699+

**Comments:**

Samples 1-10 were tested on TSI 8130 machine 000334 using timer 000217. Samples 11-15 were tested on TSI 8130 machine 000333. Samples 16-20 were tested on TSI 8130 machine 000332.

Was all equipment verified to be in calibration throughout all testing?  Yes  No

**Signature:**

*Nichole L. Petetta*

**Date:** 4/12/2017

**Engineering Technician**