

# **ALLEGRO INDUSTRIES**

## **BITREX<sup>TM</sup>**

### **QUALITATIVE FIT TEST KIT INSTRUCTIONS**

#### **PART NO. 2041**

Read and understand all instructions before using this product.

Open carton carefully and inspect product for damage caused by carrier.  
If any damage is found, report and submit claim to carrier.



**Your ALLEGRO Qualitative Bitrex Fit Test Kit includes:**

- 1) Test hood
- 2) Nebulizer #1 (sensitivity)
- 3) Nebulizer #2 (fit test)
- 4) Sensitivity Solution Applicator Kit
- 5) Fit Test Solution Applicator Kit
- 6) Two sets of replacement nebulizer inserts

**WARNING**

When crushing the applicator tubes to release the product, it is important to wear rubber or latex gloves. It is also important to “pinch” the applicator tube to break the glass ampoule when releasing the liquid into the tube. **DO NOT BEND THE TUBE!** (See Diagram 1 and 2)

**Correct**



**Diagram 1**

**Wrong**



**Diagram 2**

**Preparation**

1. Remove Sensitivity Test Applicator and/or the Fit Test Applicator from its storage box. With the fill tip pointed upward, pinch along the full length of the applicator tube using your thumb and forefinger until glass ampoule inside of the applicator tube is thoroughly crushed. (**Warning: It is important to keep the applicator tip pointed upward when pinching the tube. This is to prevent the solution from squirting out during the pinching process.**) (See diagram 3)



**Diagram 3**

2. Remove the End Cap from the nebulizer. Insert the applicator tip into the opening of the nebulizer. Squeeze along the applicator tube to transfer the solution from the applicator down into the nebulizer until the applicator is completely drained of the solution. (**Warning: Do not attempt to remove the tip of the applicator. It contains a porous filter which is designed to allow the solution to pass through it while filtering out the glass ampoule particles. It is also not necessary to puncture a hole or cut the tip of the applicator. The applicator tip already has the proper hole size in it to allow the solution to squirt into the nebulizer.**)

(See Diagram 4 and 5) (Note: It is recommended that the protective end cap be replaced back on the nebulizer until the test is ready to be performed.)



Diagram 4

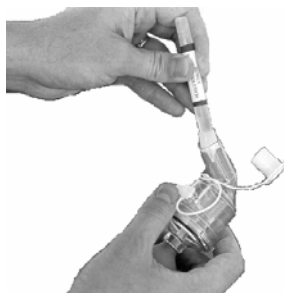


Diagram 5

3. Once the applicator solution has been drained into the nebulizer, it can safely be disposed.
4. When the subject is ready and has been instructed on the testing procedure you are ready to begin by removing both the End Cap and the Breather Vent Plugs of the test nebulizer.

### **Sensitivity Test**

This test is conducted to assure that the person being fit tested can detect the bitter taste of the Bitrex solution at very low levels. The sensitivity test solution is a diluted mixture of fit test solution.

The test subject should not eat, drink, or chew gum for at least 15 minutes before the test.

- 1) Explain the fit test procedures to the subject.
- 2) Have the subject don the hood without a respirator.
- 3) Position the hood forward so there is about six inches between the subject's face and the window. This is especially important for the fit test -- it helps to ensure even dispersion of the aerosol and allows free movement of the subject's head while wearing a respirator.
- 4) Instruct the subject to breathe through their mouth with tongue extended.
- 5) Using the sensitivity test solution nebulizer #1 inject the aerosol into the hood through the hole in the window. Inject ten squeezes of the bulb, fully collapsing and allowing the bulb to expand fully on each squeeze. The nozzle is directed away from the nose and mouth of the person being tested.
- 6) Ask the subject if they can detect the bitter taste of the Bitrex solution. If tasted, note the number of squeezes and proceed to the fit test (the test threshold is noted as ten regardless of the number of squeezes actually completed).
- 7) If the subject does not taste the sensitivity solution, inject an additional 10 full squeezes of the aerosol into the hood. Repeat with 10 more squeezes of the aerosol into the hood if still not tasted.
- 8) If the Bitrex is not tasted after 30 squeezes, the test subject is unable to taste Bitrex and may not perform the fit test.
- 9) Remove the hood and give the subject a few minutes to clear the taste from his/her mouth.

### **Fit Test**

- 1) Have the test subject don and fit check the respirator per the instructions provided with the respirator.

**NOTE:** The fit test is to be performed using a particulate filter (P100 rating).

- 2) Have the test subject don and position the hood as before, and to breath through their mouth.
- 3) Using the fit test nebulizer #2, inject the fit test aerosol through the hole in the hood using the same number of full bulb squeezes as required in the sensitivity test, i.e. 10, 20 or 30 squeezes.

- 4) To maintain an adequate concentration of aerosol during this test, inject one-half of the number of squeezes used in step #3 above, every 30 seconds.
- 5) Instruct the subject to indicate if they detect the bitter taste of Bitrex at any time during the test.
- 6) After the initial aerosol is injected, instruct the test subject to perform the following exercises for 60 seconds each\*
  - a) Normal breathing.
  - b) Deep breathing -- breaths should be deep and regular.
  - c) Turning head from side to side-- movement should be complete with one turn every second.
  - d) Nodding head up and down -- movement should be complete and made about once per second.
  - e) Talking, reciting the alphabet or reading aloud a prepared text. The "Rainbow Passage" (see below) is suggested.
  - f) Bending over- The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist.
  - g) Normal breathing.
- 7) If the entire test is completed without the subject detecting the bitter taste of the Bitrex aerosol, the test is successful and the respirator fit is deemed adequate.
- 8) If the bitter taste of Bitrex is detected, the test has failed, a different Respirator must be tried, and the entire procedure is repeated (threshold screening and fit testing).

\*Certain OSHA Standards require specific exercises in addition to the ones listed. Examples of these are:

<u>Substance</u>	<u>Regulation</u>	<u>Exercise</u>
Asbestos	CFR 1910.1001	Jog in place
Benzene	CFR 1910.1028	Grimace, bend over or jog in place.
Formaldehyde	CFR 1910.1048	Grimace, bend over or jog in place

Individual standards should be referenced for other specific exercises required.

#### **"The Rainbow Passage"**

**When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond his reach, his friends say he is looking for the pot of gold at the end of the rainbow.**

**OSHA** The ALLEGRO 2041 qualitative fit test kit meets the performance criteria for fit testing tight-fitting facepiece respirators under current OSHA standards.

### **Cleaning**

Immediately after completing the test, unused solutions can be poured into any wastewater treatment system. Rinse the nebulizer with warm water to prevent clogging. Wipe out the inside of the hood with a damp cloth or paper towel to remove any deposited Test Solution.

### **REPLACEMENT PARTS**

<u>Part No.</u>	<u>Description</u>
2041-11K	Sensitivity Solution Kit
2041-12K	Test Solution Kit
2040-03	Nebulizer with Labels
2040-04	Test Hood

### **IMPORTANT NOTICE - WARRANTY**

This warranty is void if the goods are not used in compliance with the printed directions enclosed with the goods, or if the goods are used for any significant period in “extreme environments.” “Extreme environments” are those conditions in which the goods are exposed to temperatures greater than 125 degrees F or less than -25 degrees F, or in which the goods are exposed to moisture for prolonged periods.

Disclaimers and Liability Limitations: This warranty does not cover normal wear and tear of the products. The liability of Allegro Industries will be expressly limited to the replacement or repair, at the sole discretion of Allegro Industries, of any returned goods in accordance with the above stated warranty. There are no other warranties or representations with respect to the nature and quality of the goods.

IT IS EXPRESSLY AGREED THAT THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.