



# Moldex Fit Test Kit User Instructions

Qualitative Fit Testing with Bitter Solutions

**MOLDEX**

# FIT TEST KIT

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# 1. Introduction

## 1. Introduction

### 1.1 What is qualitative Fit Testing?

- ▶ A simple but effective method for checking that a tight fitting facepiece seals adequately to the wearer's face (FFP and half masks).
- ▶ Pass/fail test that relies on the test person's response to a test agent.
- ▶ If the test person can taste the test agent through the mask at any time, the test is failed.

### 1.2 What is Bitter?

- ▶ An odourless substance which is used in Fit Testing for its strong bitter taste.
- ▶ Developed for cleaning products to prevent children from drinking them.
- ▶ Drinking water after the Fit Test will quickly remove the taste.

### 1.3 Why Fit Test?

- ▶ To select a mask model which matches the test persons facial features and seals adequately to their face.
- ▶ To check that the wearer can put the mask on correctly.
- ▶ Required by legislation in some countries (UK).



# 1. Introduction

## 1.4 Equipment

The Moldex Fit Test Kit comes with equipment required to carry out multiple tests.



- ▶ 1x Test Hood
- ▶ 2x Nebulisers (for sensitivity and test solution)
- ▶ 1x 30 ml Bitter sensitivity solution\*
- ▶ 1x 30 ml Bitter fit test solution\*
- ▶ 4x Replacement nebuliser inserts
- ▶ 2x Nebuliser cleaning pins
- ▶ 1x User instructions USB stick

\* Replacement solutions available



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## 1.5 Additional equipment needed:

- ▶ Paper towels
- ▶ Stopwatch
- ▶ Plain drinking water
- ▶ Protective gloves





## 2. Prior to Fit Testing

## 2. Prior to Fit Testing

### 2.1 Preparing the solutions

We suggest to wear gloves during this procedure. 



- 1 Remove the sealing caps from the nebuliser.\*



- 2 Insert the tip of the bottle into the round opening. Gently squeeze the bottle to dispense the desired amount of solution. Don't dispense too much solution, 20 drops (2.5ml) per person is ample.

- 3 Carry out these steps for both, the sensitivity and the test solution.\*

\* The nebuliser for sensitivity solution is marked with a red ring.



## 2. Prior to Fit Testing

### 2.2 Checking the nebulisers



*Make sure caps are removed*



*You should see a fine mist*

- 1 Make sure both caps are removed from the nebuliser.
- 2 Check if nebulisers are working by spraying against a dark background. You should see a fine mist.
- 3 If you cannot see the mist then the nebuliser may be blocked from crystallised Bitter Solution. See maintenance section for further instructions.
- 4 Continue to check the nebulisers throughout the Fit Test.

### 2.3 Instructing the test person

- ▶ The wearer should not eat, drink [except still, unflavoured water], smoke [including E-cigarettes] or chew gum for at least 30 minutes before the test.
- ▶ Explain the reasons for Fit Testing and the Fit Test procedures to the test person.



## 2. Prior to Fit Testing

### 2.4 Prepare and pack the hood

#### To Prepare



- 1 Open the Velcro straps.



- 2 Lay the hood flat on the table.



- 3 Unfold hood and push the hood from the inside into a 3D shape. The hood is now ready to use.

#### To Package



- 1 Place the hood with viewing window facing up. Fold the upper end first and fold it towards the viewing window.



- 2 Then follow with the long sides and the short side. Fix the sides with the Velcro strips.



- 3 Place the hood in the lid of the case and hold it with your thumbs while closing it.

### 3. Sensitivity Test

This test is done to ensure that the test person can detect the taste of Bitter at sufficiently low levels to make the Fit Test valid.

#### 3.1 Putting on the hood



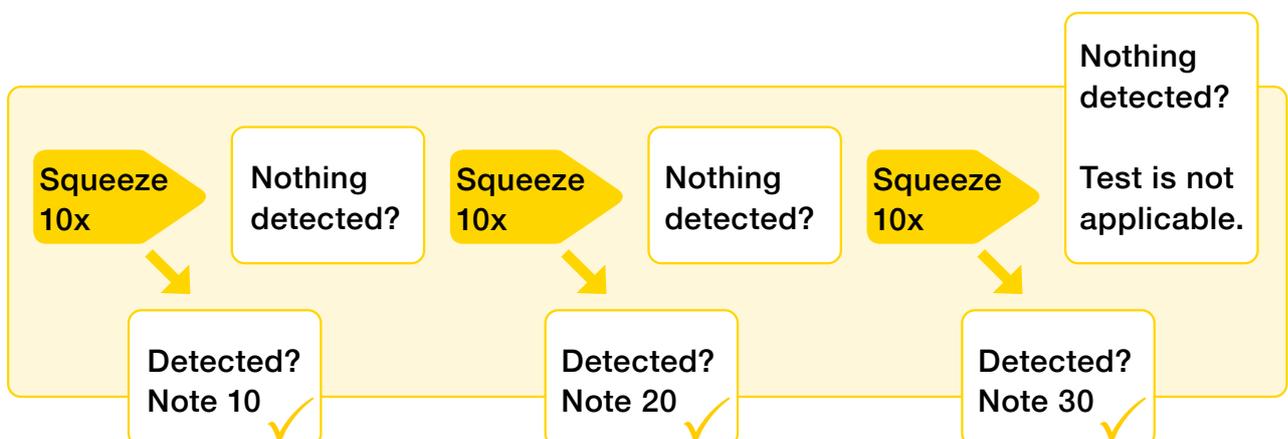
- 1 Instruct test person to put on the hood without a respirator.
- 2 Position the hood forward so there is about 10 cm gap between the test person's face and the hood window.
- 3 The hood should sit on the shoulders.
- 4 The test person holds the hood in position.



#### 3.2 Performing Sensitivity Test



- 1 The test person breathes through the mouth, with tongue slightly forwarded.
- 2 Ask the test person to indicate as soon as they taste the Bitter.
- 3 Inject up to 10 full squeezes until the person being tested indicates they can taste the Bitter Sensitivity Solution.
- 4 If nothing is detected, repeat the procedure up to a further 2 times.
- 5 If nothing is detected after 30 squeezes, the test person cannot be tested with this test method. Please contact Moldex for information on alternative methods.
- 6 Note the number of squeezes required. This will determine the amount of Bitter Test Solution used during the Fit Test.



### 3.3 After Sensitivity Test



- 1 Remove the hood.
- 2 Ask test person to wipe mouth and wash hands.
- 3 Drinking water helps to remove the taste of Bitter solution.
- 4 Wait a few minutes before proceeding to Fit Test.





## 4. Fit Test

### 4. Fit Test

#### 4.1 Putting on the mask

- 1 Ask test person to put on and adjust the mask.
- 2 Inspect the fit of the mask and ask the person to perform a fit check.
- 3 If necessary, correct the fit. Make sure the chin properly moves into the mask and that the mask sits correctly on the nose.
- 4 Any assistance given should be recorded on the test report and to the employer as additional training might be required.
- 5 If testing a half mask, then particulate filters must be used.

The test person should wear the mask for 5 minutes prior to the Fit Test.



## 4. Fit Test

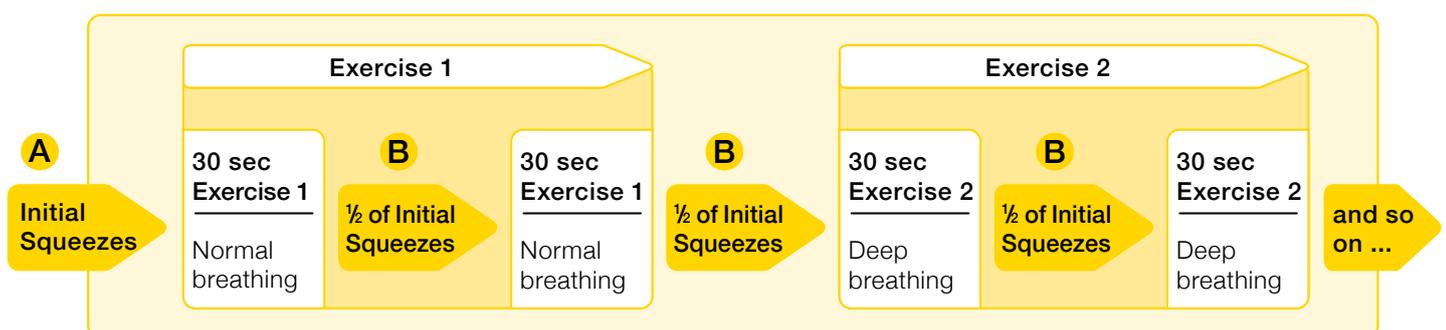
### 4.2 Preparing the test solution atmosphere and perform Fit Test



- 1 Instruct the test person to put on the test hood.
- 2 The results of the Sensitivity Test dictate the amount of Bitter test solution to be used during the Fit Test.

Number of Squeezes administered in Sensitivity Test	A Number of initial Squeezes of test solution	B Number of Squeezes of test solution to be administered every 30 seconds
1–10	10	5
11–20	20	10
21–30	30	15

- 3 Use the Bitter test solution nebuliser to inject the initial amount of squeezes into the hood. **A**
- 4 Now 7 exercises need to be performed (See following page). Every 30 seconds top up the test solution inside the hood by administering half the initial amount of squeezes. **B**



### 4.3 Test Exercises

- ▶ Instruct the test person to breathe through the mouth, with tongue slightly forwarded.
- ▶ Ask the test person to indicate if Bitter is being tasted at any time during the test.
- ▶ The test person should perform the following exercises for 60 seconds each.

#### 1 Normal breathing

The test person should breathe normally with no head movements or talking.

#### 2 Deep breathing

The test person should breathe slowly and deeply, taking care so as not to hyperventilate.

#### 3 Turning head side to side

The test person should slowly turn their head from side to side while inhaling at each side.

#### 4 Moving head up and down

The test person should slowly move their head up and down while inhaling in the up position.

#### 5 Talking

The test person should talk out loud and slowly (for example counting backwards from 100).

#### 6 Bending over

The test person should stand and bend at the waist as if to touch their toes, and then return to an upright position. Repeat 10-15 times.

#### 7 Normal breathing

The test person should breathe normally with no head movements or talking.



## 5. Test results

### 5. Test results

- ▶ If the entire test is completed without the test person detecting the bitter taste of Bitter, the test is passed.
- ▶ If the test person detects the bitter taste at any point the test is failed and should be stopped. The test can be repeated.
- ▶ Sometimes test persons are not sure if they taste something. In this case finish the test and at the end ask the test person to lift the mask. The test person will now taste Bitter and give a clear answer if he/she has really detected Bitter during the test.

#### 5.1 Repeating the test

- ▶ Before retesting a minimum 15 minute waiting period must be observed to allow the taste of the test agent to be removed completely. Offer the test person a drink of water. Both the sensitivity test and fit test should be repeated.
- ▶ Ideally, the test is performed on the next day. For some people it takes two hours and longer until they loose the Bitter taste.
- ▶ If the second test fails, repeat test with another size and/or model of Moldex mask.
- ▶ Before restarting the test it is important to review the fit of the mask for any obvious failures.



## 5. Test results

### 5.2 Most common reasons for failed Fit Tests

- ▶ Incorrect fitting of respirator
- ▶ Facial hair [e.g. beard, stubble etc.]
- ▶ Excessive facial movement during the talking section
- ▶ Sweating
- ▶ Make-up or face creams
- ▶ Jewellery such as nose studs
- ▶ Unusual facial features
- ▶ In general Moldex masks pass in fit test procedures but it is quite normal that every now and then someone will fail. This doesn't show that there is a problem with Moldex masks in general. It is proof that the fit test procedure is working and shows how important it is to do fit testing.
- ▶ There are persons that have problematic face shapes relating to respiratory protection and that is why Moldex has different masks and sizes to choose from. Test again with some other type of FFP. The Air Plus or the 7000 Series almost always fit.



## 5. Test results

### 5.3 Fit test record

Complete the Moldex Fit Test record and explain the result to the candidate.  
We recommend the employer and employee both keep a copy of the Fit Test record.

### 5.4 How often should you Fit Test?

- ▶ We recommend annual Fit Testing.
- ▶ There are situations where repeat testing should be carried out e.g. if the test person loses or gains weight, or develops any facial changes like scars.

### 6. Maintenance

- ▶ Immediately after completing the test, pour away any unused solution in the nebulisers and ampoules.
- ▶ Rinse both nebulisers with warm water and dry with paper towel.
- ▶ The hood can be cleaned with a damp cloth and mild soapy water.
- ▶ Do not fold the hood across the window panel.

#### 6.1 Unblocking nebulisers



- ▶ If you cannot see a fine mist when using the nebuliser then it may be blocked.
- ▶ Use the pins provided to unblock the nozzles.
- ▶ If necessary, replace the nebuliser insert.



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