

# Use of Self Contained Breathing Apparatus

## School of Chemistry

### **PURPOSE:**

This SOP outlines the procedures to ensure that equipment is in the “ready to use status” and is used correctly. It also ensures that personnel stay familiar with that equipment.

### **PRIMARY RULES:**

- SCBA must only be used in an emergency situation and only by trained personnel
- Never use breathing apparatus on your own. Always work in pairs
- Breathe normally
- Be comfortable
- Check your apparatus visually
- Perform the “positive” and “negative” tests.

### **DEFINITIONS:**



**Second-stage regulator (SSD)** – what attaches the supply-air tube to the face mask (pictured above)

**Airflow controller** – red dial on second-stage regulator. Provides an increased flow of air to the face mask. Used if breathing is laboured. User can control amount of air entering face mask. Turn anti-clockwise to open.\*

**Purge valve** - black rubber button at the centre of SSD (marked “SURVIVAIR”). Press to deliver a constant flow of air to the face mask. Can also be used to clear fogging in face mask or a burst of air to cool face.\*

**Air saver switch** – grey button on second-stage regulator. Disengages purge valve.

\*Beware of increased air consumption. Check pressure dial.

### **PROCEDURES:**

#### **Step 1 INSPECT SCBA BEFORE DONING**

- Visually inspect equipment.
  - Check condition of mask (facepiece, head harness & lens for cuts, scratches, missing buckles), backpack (straps & buckles for cuts, tears), cylinder (dents, gouges), hoses (cuts, cracks, bulges), SSD (damage, debris).
  - Report any obvious damage that would preclude safe and proper use of the SCBA.

## Step 2 DON THE SCBA

- Don the cylinder and backpack, connect/adjust straps and waist belt to ensure correct and comfortable fit.
- Ensure the pressure indicator is in a position so the dial is easy to read. Ensure straps are not twisted and hoses are not routed through harness webbing.
- Don the face mask and adjust straps to correct fit, starting the two chin straps and then working your way up.

## Step 3 PERFORM TESTS

- Perform the **negative test**. Prior to attaching the supply air tube to the face mask, block the end of the inhalation tube on the mask with the palm of your hand while trying to inhale. If the facepiece is fitted correctly, it will collapse against your face. If not, make further adjustments of the straps and retry. Exhale through the exhalation valve, no sticking should be evident.
- Perform the **audible alarm test**. Ensure the airflow controller is turned fully clockwise and the air saver switch has been pressed. Open cylinder valve fully and then close 1/4 turn, to pressurise the line. Ensure cylinder pressure is now showing greater than 250 bar (ideally 300 bar). Do not use if less than 250; tag the cylinder for refilling. Close cylinder valve. Purge the line by pressing the purge valve.
  - Whistle alarm must sound at around 50 bar.
- Turn cylinder valve back on, ensuring the airflow controller is turned fully clockwise and the air saver switch has been pressed.
- Attach SSD to face piece and inhale - regulators should deliver on inhalation without excessive effort, free flow, or fluttering.
- Perform the **positive test** (leak test). While breathing normally, insert a finger under the edge of the face mask and create a deliberate leak. Doing this should cause a high airflow from this point.

DO NOT USE IF EITHER OF THESE TESTS FAIL<sup>+</sup>.

## Step 4 REMOVE THE SCBA

- Ensure purge valve is closed, press air saver switch.
- Loosen head harness straps and remove facemask.
- Turn cylinder valve clockwise to OFF position.
- Remove SSD from facemask.
- Undo the waist belt and loosen shoulder straps. Remove apparatus.
- Release any air trapped in the system by partially turning the airflow controller ON and then OFF again.
- Whistle alarm must sound as air pressure reduces to zero.

## Step 5 CLEAN AND REPLACE SCBA INTO STORAGE CABINET

- Wipe out inside of facemask thoroughly with non-alcoholic wipes.
- Replace facemask into protective plastic bag.
- Replace facemask neatly into storage cabinet. Give the backpack/tank assembly to the Building Evacuation Controller (BEC), who will notify the SCBA maintenance contractor to refill the tank.
- Place a “Caution” tag on the cabinet to notify potential users that the unit is out of service.

**<sup>+</sup>If SCBA is not functioning properly, it must be taken out of service and reported to the BEC. The BEC will be responsible for ensuring that the out of service unit is tagged out and passed on to the SCBA maintenance contractor for further evaluation and repair.**