

• Description

The SemeaTech Hydrogen Chloride Diffusion Tube is composed of two main components: the diffusion tube and the chemical vial. This device is specifically engineered to generate controlled quantities of hydrogen chloride gas. It finds extensive applications across various industrial and laboratory settings, particularly for the calibration of gas sensors and detectors, scientific research, and the testing of leak detection systems. Thanks to its advanced diffusion technology, the tube releases hydrogen chloride gas at a stable and precise rate, thereby enabling users to achieve highly accurate measurement outcomes.

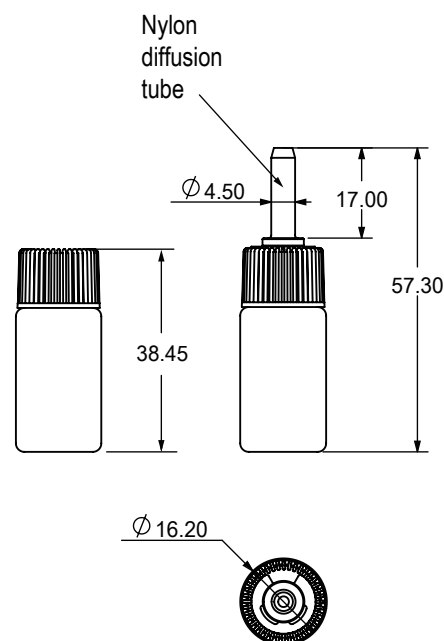
• Specifications

Gas Type:	Hydrogen chloride
Release Method:	Narrow tube diffusion
Release Rate:	Varies with environmental conditions and temperature
Compatibility:	Can be used with standard gas calibration systems
Tube Material:	Resistant to hydrogen chloride chemical reactions
Operating Temperature:	Optimal within certain temperature ranges according to manufacturer's specifications
Size:	Length ≈57mm Diameter ≈16mm
Weight:	≈8.0g
Shelf life:	12 months
Storage conditions:	Store in the refrigerator, protect from light, and position vertically

• Features

High Precision:	Delivers hydrogen chloride gas at a controlled release rate, ensuring precise calibration
Optimal Stability:	Maintains consistent gas release throughout the vial's lifespan
Compatibility:	Works seamlessly with a wide range of gas calibrators and analyzers
Ease of Use:	Its straightforward design makes it suitable for diverse laboratory and industrial settings

• Product Dimensions



All dimensions in mm.

• Safety Notes

1. This product must be used in a ventilated hood to comply with safety regulations.
2. When operating the chemical vial, do not touch the bottleneck with bare hands; please wear gloves, glasses and other PPE.



• Operating Instructions

Step 1 Install the dehumidifier (shipped with the gas generator) at the air inlet of the Gas Sensor Calibrator.

Step 2 Carefully loosen the cap of the vial that houses the chemical standards. Exercise caution to prevent any accidental spills. Once done, securely attach the diffusion tube to the vial.

Step 3 Take the dilution chamber out and unscrew the cap of the dilution chamber located atop the calibrator. Use a tweezer (shipped with the calibrator) to place the diffusion tube (opening up) with the vial slowly into the dilution chamber and then replace the cap, ensuring it is tightly fastened.

Step 4 Reinsert the dilution chamber into the generator and make certain the tubing is securely and correctly attached to the chamber ports.

Step 5 Connect the calibration cap between the gas outlet and your HCL device that needs to be calibrated or tested.

Caution: Any spillage of chemical standards from the vial, even if it is minimal, on the surface of the vial or inside the dilution chamber will significantly impact the accuracy of the calibrator until the spill completely evaporates. In the event of spillage, immediately remove all residues with filter paper or cotton swabs until the surface is free of contamination.

Step 6 Power up the calibrator according to the operation instructions of the gas generator.

Step 7 Refer to the Certificate of Calibration for the diffusion tube to set the operating temperature (with the up/down keys) and the flow rate (by adjusting the gas flow knob). To read the flow rate, reference the top of the float in the glass tube against the scale on the side of the rotameter.

Caution: Maintaining a non-zero flow rate contributes to extending the lifespan of the pump.

Step 8 Allow the generator to operate freely for 60 minutes or longer before its initial use. After this period, the output gas concentration will stabilize, making it suitable for the calibration or bump test of HCL monitors or sensors.

Step 9 Start the calibration or test process.

Step 10 After calibration is completed, use a tweezer to take out the diffusion tube with the vial from the dilution chamber.

Step 11 Detach the vial from the diffusion tube, then screw the cap securely back onto the vial.

Step 12 Properly store the diffusion tube for future use.

Step 13 Allow the flow control system to operate for approximately 10 minutes to clear any remaining trapped gas before powering off.

Step 14 Set the operating temperature by adjusting the two up/down keys to 0°C.

Step 15 Power off.

Note 1: Leaving the diffusion tube with the vial inside the dilution chamber after each use will result in the buildup of gas concentration within the diffusion chamber, prolonging the time it takes for the calibrator to stabilize the output gas concentration for the next use.

Note 2: When the color of the desiccant inside the dehumidifier changes to light red, it is advised to replace the desiccant.

Note 3: This chemical vial is designed for single-use applications and intended to provide a stable gas concentration output consistently for 8 hours. However, it may be reused under specific conditions as outlined below:

1. If the initial use lasts less than 4 hours, the vial can be hermetically sealed and reused within 2 days of the initial use, with the output gas concentration decreasing by 5%.
2. Regardless of usage intervals, the total cumulative usage duration of the vial must not exceed 8 hours.
3. Additionally, the total number of times the vial is used, including both the initial use and any subsequent reuse, must not exceed 2 times.



- **Certification Disclaimer**

This Hydrogen Chloride Diffusion Tube was individually calibrated in the SemeaTech lab using qualified hydrogen chloride cylinder gas as the standard. This Certificate of Calibration certifies that the Hydrogen Chloride Diffusion Tube is traceable to the GBW by an unbroken chain of standards for the duration specified. SemeaTech adheres rigorously to ISO 9001 procedures during the entire manufacturing process.

- **Application**

Gas Detector/Sensor Calibration – Used to test and confirm the accuracy of HCL sensors in industrial gas detectors.
Laboratory Research – Enables experimentation and testing that require controlled amounts of hydrogen chloride gas.