# Product Data Sheet

**Isobutylene Diffusion Tube (PN: 411-0400-000)**

## • Description

The SemeaTech Isobutylene Diffusion Tube is composed of two main components: the diffusion tube and the chemical vial. This tube is specifically engineered to generate controlled quantities of isobutylene gas. It finds extensive application 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 isobutylene gas at a stable and precise rate, thereby. enabling users to achieve highly accurate measurement outcomes.

## • Specifications

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| Gas Type: | isobutylene |
| 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 isobutylene chemical reactions |
| Operating Temperature: | Optimal within certain temperature ranges according to manufacturer's specifications |

## • Features

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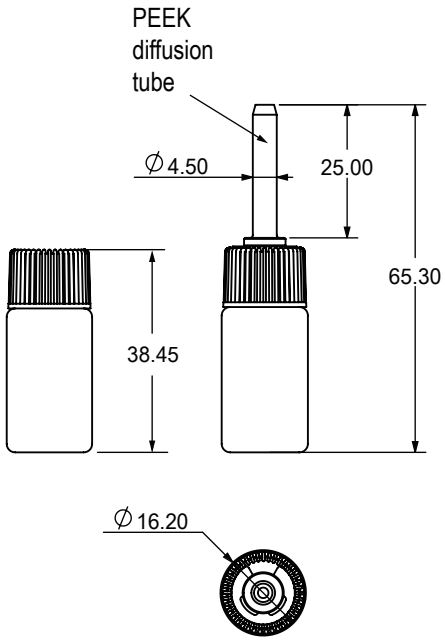
| High Precision: | Delivers isobutylene gas at a controlled release rate, ensuring precise calibration |
| Optimal Stability: | Maintains consistent gas release throughout the vial's lifespan |
| Compatibility: | Works seamlessly with a wide range of gas calibrators and analyzers |
| Ease of Use: |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

## • Product Dimensions




All dimensions in mm.

## • Safey Notes

1.This product must be used in a ventilated hood to comply with safety regulations.
2.This product is not designed or certified for operation in hazardous areas.
3.This product should be used in a temperature-stable environment for better accuracy.

## • Operating Instructions

**Step 1** Install the dehumidifier (shipped with the gas generator) at the air inlet of the gas generator.
**Step 2** Carefully loosening 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 diffusion 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** Power up the calibrator by pressing the power switch on back of the gas generator. This action activates the temperature display. And then, press the Gas ON/OFF button to initiate the air pump.
**Step 6** Refer to the Certificate of Calibration for the diffusion tube and set the operating temperature by pressing the up(▲) and down(▼) keys and set the flow rate by adjusting the gas flow knob. The upper level of the float in the glass tube should be used to measure the flow rate with reference to the scale on the side of the rotameter.
**Caution: Maintaining a non-zero flow rate contributes to extending the lifespan of the pump.**
**Step 7** Allow the generator to operate freely for 10 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 PID monitors or sensors.
**Step 8** Connect a Teflon tube (not included) with the calibration cap, between the gas outlet and your PID device that needs to be calibrated or tested.
**Step 9** Start the calibration or test process.
**Step 10** 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 power off.
**Step 14** Set the operating temperature by adjusting the two up(▲)/down(▼) keys to 30°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:** Do not block the intake filter on the back side of the calibrator. The filter needs to be checked periodically and replaced if it is dirty.
**Note 3:** When the color of the Desiccant inside the dehumidifier changes to light red, it is advised to replace the desiccant.
**Note 4:** The chemical vial is designed for single-use applications but may be reused under specific conditions: if the initial use duration is less than 6 hours, the vial can be sealed and stored for subsequent use. However, the total cumulative usage duration shall not exceed 12 hours, and the total number of use shall not exceed 3 times.

## • Certification Disclaimer

This Isobutylene Diffusion Tube was individually calibrated in SemeaTech Lab using qualified isobutylene cylinder gas as the standard. This Certificate of Calibration certifies that the Isobutylene Diffusion Tube is traceable to the GBW by an unbroken chain of standards for 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 PID sensors in industrial gas detectors.
Laboratory Research – Enables experimentation and testing that requires controlled amounts of isobutylene gas.