



# Mudgas Tube<sup>®</sup> White Paper

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### **Aliquot, Ltd.**

Specializing in the manufacture and sale of gas and fluid sampling containers, designed specifically for simplifying sampling and maximizing subsequent scientific analysis.

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## INTRODUCTION

The Mudgas Tube, developed by Aliquot, Ltd., represents a significant innovation in gas/fluid sampling technology tailored for the oil and gas industry. This white paper explores the design, functionality, and advantages of the Mudgas Tube, providing an in-depth analysis of its impact on sampling accuracy and operational efficiency.

## PRODUCT OVERVIEW

The Mudgas Tube is a transparent sampling vessel designed for use in flow-through sampling manifolds. Its transparency allows for visual inspection of the sample (i.e. contaminants), ensuring accurate and reliable data collection. The tube is built to withstand harsh field conditions, making it a robust choice for field operations.

## DESIGN AND FUNCTIONALITY

The Mudgas Tube utilizes a familiar flow-through manifold system, which simplifies integration into existing sampling setups. This design ensures consistent and representative sampling of gases and fluids from drilling operations. The transparent material provides an added advantage of immediate visual confirmation of sample quality, reducing the need for additional equipment and steps in the sampling process.

## ADVANTAGES

1. **Accuracy:** Mudgas Tubes ensure high accuracy in sampling by providing a clear visual confirmation of the sample (most importantly, the absence of contaminants).
2. **Durability:** Constructed from high-quality materials, the tube is designed to withstand the demanding conditions of oil and gas field operations.
3. **Efficiency:** The integration with existing manifold systems streamlines the sampling process, reducing downtime and improving overall operational efficiency. Additionally, this design allows for easily automating analyses in the laboratory.
4. **Inert materials:** Materials used to construct Mudgas Tubes have been used in this application for over 20 years. Similarly, reduced amounts of aluminum mean reduced hydrogen production when water is present.

## APPLICATIONS

The primary application of the Mudgas Tube is in the oil and gas industry, where accurate gas and fluid sampling is critical for analysis and decision-making. It is particularly useful in drilling operations where real-time data on gas and fluid composition can significantly impact operational decisions.

## CONCLUSION

The Mudgas Tube by Aliquot, Ltd. offers a robust, efficient, and accurate solution for gas and fluid sampling in the oil and gas industry. Its innovative design and durable construction make it an essential tool for enhancing sampling accuracy and operational efficiency.

For more information, visit [www.MudgasTube.com](http://www.MudgasTube.com)



## ADDITIONAL FEATURES

**Valves:** Aerosol-type valves were chosen for Mudgas Tubes, as traditional tire-stem valves can be unreliable and are more easily fouled. The larger sealing surfaces of these valves can isolate small particles that could otherwise cause leaks. Valves are opened by downward pressure on the valve stem, or by tilting the valves to the side.

**Removable Valve Actuators:** Though the current Mudgas Tubes flow in either direction, actuators are “color-coded” for easy identification and direction-dependent sampling (this will be useful for additional container types currently under development). These valve actuators also allow the Mudgas Tube to be used in preexisting mud-gas sampling manifolds. The actuators can also be easily removed in the laboratory for direct access to the valve stem underneath.

**Protection:** Overcaps and weather-resistant bands are provided to protect the valves during shipment.

**Adapters:** Available tire-stem/Schrader valve adapters facilitate controlled valve operation and sample isolation. Additionally, the valve stem on Mudgas Tubes are capable of accepting numerous additional fittings and valves (e.g. Luer slip fittings).



tire-stem adapter



Luer with septum



Luer with tubing



secondary valve



removable valve actuator

valve opens via downward (~5 - 7 lb.) or lateral pressure



## APPLICATIONS

The Mudgas Tube is primarily used in the oil and gas industry for mud-gas logging, wellhead sampling, bradenhead sampling or other pressurized sampling applications. It can also be used for collecting water or other fluid samples. Additionally, these containers were constructed to easily configure with automated analytical equipment, to both simplify and expedite sample throughput.

For more detailed information, you can visit the Mudgas Tube website: [www.MudgasTube.com](http://www.MudgasTube.com)



	C1	C2	C3	iC4	nC4	iC5	nC5	N <sub>2</sub>	O <sub>2</sub> +Ar
ACTUAL	0.101	0.100	0.100	0.103	0.098	0.100	0.100	78.42	20.88
LAB 1	0.099	0.104	0.096	0.099	0.086	0.083	0.075	79.14	20.15
LAB 2	0.098	0.101	0.102	0.093	0.081	0.076	0.067	78.63	20.73

# Mudgas Tube

## SPECIFICATIONS

### GENERAL SPECIFICATIONS

**Materials:** Constructed from a combination of inert plastics, aluminum, and rubber, designed for durability and performance in field conditions.

**Volume:** Each Mudgas Tube has a capacity of 90 ml.

**Flow Rate:** Optimal flow rate is 1 to 3 liters per minute. However, slower flow rates are acceptable (additional flow time recommended).

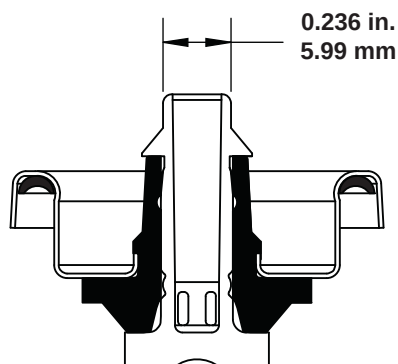
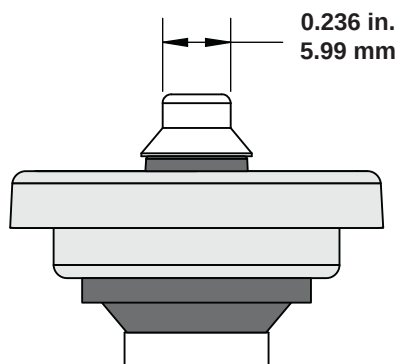
**Temperature Range:** Operates effectively in temperatures from -30°F to 120°F (-25°F to 165°F with caution; the elastomers in the valves become more rigid in colder temperatures but remain functional).

### PRESSURE AND COMPATIBILITY

**Pressure Limits:** The Mudgas Tube is rated from -30" of Hg, up to 15 PSIG, and suitable for both hazardous and non-hazardous gas samples. Non-hazardous samples less than 15 PSIG do not need to be shipped as hazardous. Flammable gases can be shipped under *UN2037 Receptacles, small containing gas (flammable)*. (HAZMAT shippers are included for up to 25 Mudgas Tubes).

**Pressurized Sampling:** With the use of a regulating sampling device, the Mudgas Tube can be used for high-pressure samples up to 3000 PSIG, reducing the pressure to <15 PSIG for safe sampling.

**Valve System:** Red and black valve actuators are compatible with existing mud gas sampling manifolds. The valve stem can be accessed by removing the actuators for sample extraction in the laboratory. Numerous types of familiar fittings can be affixed to the valve stem to enhance sample extraction. The valve can be opened with downward pressure (~5 lb. of force), or by tilting laterally.



9 in.  
230 mm

