



Methan Tube® is an innovative, portable system that measures directly on site the true fermentation of organic substances. Methan Tube® analyzes any biomass you want to use and simulates your system's real biogas plant conditions by setting your digester temperature and using your own digestate. Methan Tube® enables you to test new diets both in terms of quality and quantity. Evaluations of biogas production are based on the pressure of the biogas produced inside the digesters. Afterwards, this data is processed by the software that turn tests into graphics and online curves of biogas production. Methan Tube® consists of a control panel, for temperature setup and cloud data collection, and 2 or 4 reactors connected at the panel. The 4-reactors version allows you to conduct 3 different tests at the same time instead of the 2-reactors version that allows one test per time. The control panel is the same for both versions: this allows you to upgrade the MT02 version in MT04 by just adding another pair of digesters anytime.

Methan Tube® has an online web-based software directly connected to the private cloud with no storage limits. It can be easily view from any devices. The web interface will help the customer to organize the test and manage the mini digesters. Through the log in area, the customer has full access to our database and can create a private database short listed easy to use. During the biogas fermentation the customer can see in real time the tubes pressures, biogas production in Nm<sup>3</sup>/ton fresh matter and biogas production in Nm<sup>3</sup>/ton based on organic dry matter. The software can value your product. The user can check immediately the performances of tested material in comparison with database products. Through our rich database, the software can predict the final performances of the feedstock being analysed after few days of tests. An algorithm will predict the final biogas production of the feedstock considering into account the first data and the discrepancy between stored data and collected data from the instrument. The real time curve will show collected data and predicted data on the same graph.

## THE HARDWARE

# methanTUBE



**methanTUBE**  
 Developed by  **BIOLOGICAL CARE**  **ENE A**  
NATURALLY ENERGY

## YOUR BIOGAS TESTER

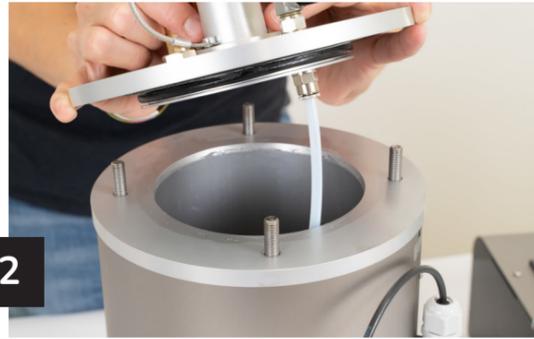


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## START NEW TEST



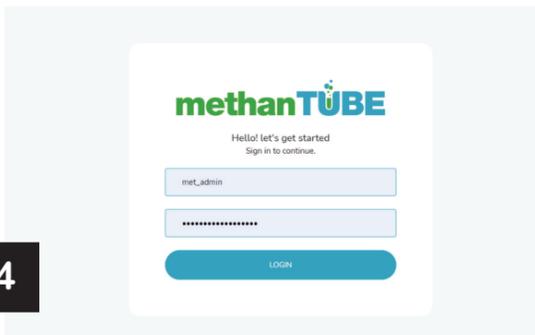
1 Make sure that the control panel is switched off via the button on the back.



2 Remove the lids from the tubes.



3 Collect the digesting material from the plant. Fill each tube with the collected sample, slowly pouring the material in the tube.



4 Before adding the biomasses in the digester, access "Userarea" and consult the "Substrates databases" to establish type and grams of products that can be inoculated in the tube.



5 Weigh the test material with an analytical scale by following these steps: in case of liquid biomass, weigh the empty syringe and tare. Shake the biomass before collecting the quantity with the syringe.



6 In case of solid biomass, take a representative sample and make it homogeneous. It should be reduced by size and homogenized as much as possible. Use the glass beaker for weighing.



7 Close the lids of each tube, making sure that the surface in contact with the lid is clean and dry. To ensure a better grip and closing of the lid is recommended to tighten the 4 screws crosswise.



8 Make sure that the heater's cables are connected to the respective cylinder and connect the pressure sensors to the control panel.



9 Start the tool's control panel via the button on the back. Make sure that the control panel is connected to the router via Ethernet cable. Access website's user area with your credentials.

## DEGASSING



1 Turn off the device via the button on the control panel. Unplug the power supply and the pressure sensor.



2 Take the device outdoors. Slowly open the degassing valve, to prevent leakage of inoculum. Wait for a few minutes and close back the valve.



3 Reconnect the digester to the control panel. Turn on devices using the button on the control panel.