TRISTAR II® 3030

micromeritics®

QUICK START GUIDE

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ABOUT THIS GUIDE

This quick start guide will help you start an analysis with supplied reference material and a pre-defined method. See the Operator's Manual for general instructions for operating the instrument.

The following symbols or icons indicate safety precautions and/or supplemental information and may appear in this manual:

NOTE — Notes contain important information applicable to the topic.

CAUTION — Cautions contain information to help prevent actions that may damage the instrument or components.

WARNING — Warnings contain information to help prevent actions that may cause personal injury.

GENERAL SAFETY

Do not service or modify this instrument without authorization from Micromeritics Service Personnel. It does not include any user-serviceable parts.

Any piece of laboratory equipment can become dangerous to personnel when improperly operated or poorly maintained. Individuals operating and maintaining Micromeritics instruments should be familiar with its operation and should be thoroughly trained and instructed on safety.

- Read the operator manual for any special operational instructions for the instrument.
- Know how the instrument functions and understand the operating processes.

- Wear the appropriate personal protective equipment when operating this instrument — such as eye protection, lab coat, protective gloves, etc.
- When lifting or relocating the instrument, use appropriate lifting and transporting devices designed for heavy equipment. Ensure that enough personnel are available to assist with the movement of the instrument.
  The TriStar II weighs approximately 37 kg (82 lb).
- Always pay attention to the safety instructions provided on each label affixed to the instrument and do not alter or remove the labels. When inspecting the instrument, ensure that the safety labels have not become worn or damaged.
- The TriStar II 3030 sound level is below 80 dBA. Hearing protection is optional.
- The TriStar II 3030 has a safety shield. Ensure it is in place when operating the instrument.
- Proper maintenance is critical to personnel safety and smooth instrument operation and performance. Instruments require regular maintenance to help promote safety, provide an optimum end test result, and to prevent costly down time. Failure to practice proper maintenance procedures can lead to unsafe conditions and shorten the life of the instrument.
- If using CO_2 for analyses, ensure an exhaust line is connected to the vacuum pump and the exhaust is run to a ventilation system or out of the building.
- Improper handling, disposal, or transportation of potentially hazardous materials can result in serious injury or damage to the instrument. Always consult the SDS when working with hazardous substances. Safe operation and handling of the instrument, supplies, and accessories are the responsibility of the operator.

INTENDED USE

The instrument is intended to be operated by trained personnel familiar with the proper operation of the equipment recommended by the manufacturer and as well as relevant hazards involved and prevention methods. Other than what is described in this manual, all use is seen as unintended use and can cause a safety hazard.

The instrument is intended to be used as per applicable local and national regulations.

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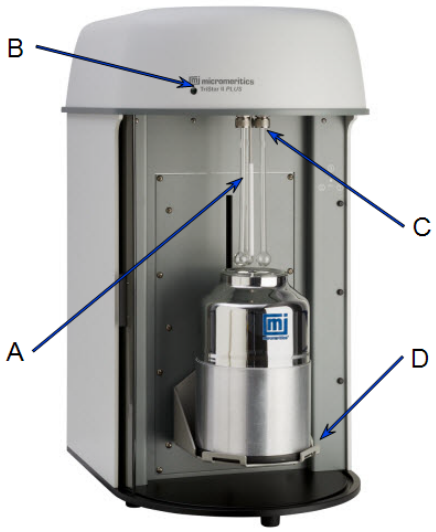
1 Analyzer Components for TriStar II Plus

Parts and accessories are located on the Micromeritics web page.

Front Components

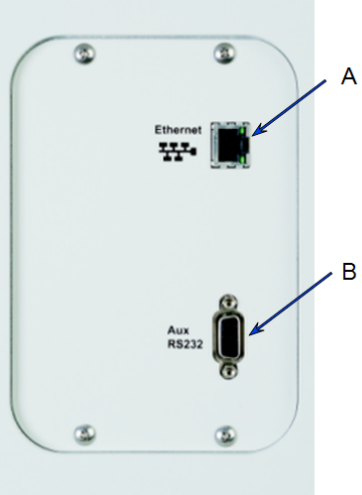


A. P_0 tube
B. Power indicator light
C. Sample ports
D. Elevator

Front Components

Component	Description
P_0 tube	For measuring the saturation pressure.
Power indicator light	Blinks when power is applied to the analyzer; illuminates when the analysis program is initiated and ready for operation.
Sample ports	For installing up to three sample tubes.
Elevator	Allows placement of the Dewar around the sample and P_0 tubes. The elevator is raised automatically when the analysis is started and lowers automatically upon completion. During analysis, the elevator optionally lowers after the free space measurement to allow evacuation, then is raised and continues the analysis.

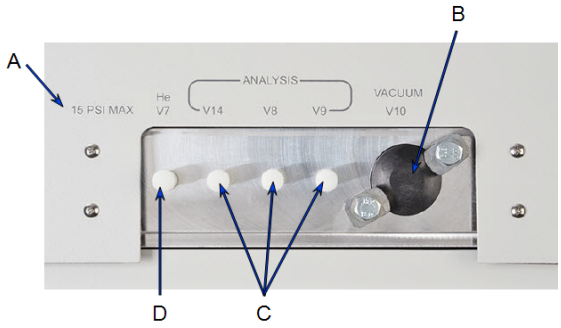
Side Panel Components



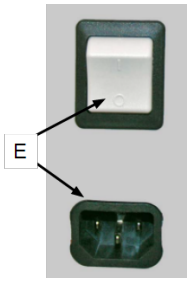
A. Ethernet port
B. RS-232 port

Component	Description
Ethernet Port	Port for a shielded Ethernet cable allowing communication between the analyzer and the computer.
RS-232 port	Not used.

REAR PANEL COMPONENTS



Rear panel



Power cord connector and power switch

Rear Panel Components

Component		Description
A	Maximum inlet pressure	Indicates the maximum inlet pressure that can be used.
B	Vacuum pump connector	For attaching the vacuum pump hose.
C	Gas inlets	Inlet ports for analysis gases.
D	Helium inlet	Inlet port for helium.
E	Power cord connector and power switch	For connecting the analyzer to the power supply and for powering the analyzer on and off.

Gas Requirements and Purity

Improper handling, disposal, or transportation of potentially hazardous materials can result in serious injury or damage to the instrument. Always consult the SDS when working with hazardous substances. Safe operation and handling of the instrument, supplies, and accessories are the responsibility of the operator.

Gas cylinders or an outlet from a central source should be located near the analyzer.

Appropriate two-stage regulators which have been leak-checked and specially cleaned are required. If applicable, pressure relief valves should be set to no more than 30 psig (200 kPag). All gases should be of a purity listed below. Gas regulators can be ordered from Micromeritics. Parts and accessories are located on the Micromeritics web page.

Gas	Purity
(CGA 580) N_2 (CGA 580) He (CGA 580) Kr	99.999% 99.999% 99.995% (Required for krypton units only)

Cryogen Requirements

Liquid nitrogen is commonly used as the cryogen to cool the sample during analysis. Micromeritics offers the Model 021 liquid nitrogen transfer system to store liquid nitrogen in the lab and easily transfer it to the analysis dewar (www.micromeritics.com).

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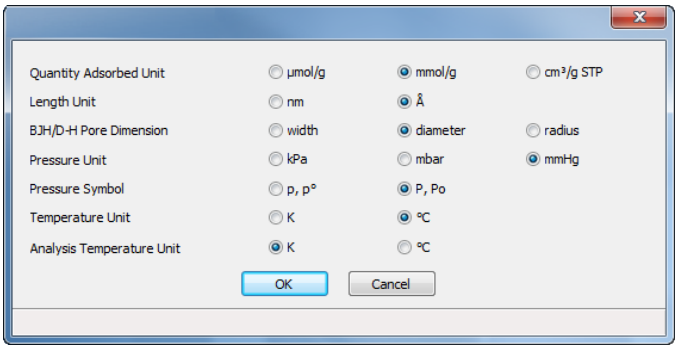
2 SELECT THE PREFERRED UNITS OF MEASURE

Start the analyzer.

Options > Units

Use to specify how data should appear on the application windows and reports. This menu option is not available if using *Restricted* option presentation in a standard installation environment.



3 Prepare and Run an Analysis

Prepare for Analysis

Weigh and degas the sample using the reference material and reference material booklet included in the accessories kit.

It is recommended to perform the tasks in the provided order.

1. Select a sample tube and a stopper.
2. Clean and label the sample tube and stopper.
3. Tare the balance.
4. Weigh the sample tube and stopper.
5. Record as *empty sample tube mass*.
6. Weigh out an amount of reference material.
7. Load the reference material into the sample tube.
8. Weigh the tube with sample and stopper and record as *before degas mass*.
9. Degas the sample.
10. Reweigh the sample tube and stopper after degas.
11. Determine the clean sample mass by subtracting the *empty sample tube mass* from the *after degas mass*.
12. Insert a filler rod and isothermal jacket on the sample tube.
13. Install sample tube on an analysis port.
14. Fill and install the Dewar.
15. Close the safety shield.

RUN AN ANALYSIS

1. Go to ***Unit 1 > Sample Analysis***.
2. Click **New** for the port the sample tube is installed on.
3. Click **Replace All**.
4. Select **Sample Information** from the library list.
5. Open the **examples** folder.
6. Select any of the sample files that correspond to the reference material.
7. Enter the clean sample mass determined above, and click **Save As**.
8. Edit the file name as needed, and click **Save**.
9. Click **Close**.
10. Click **Start**.

Up to three samples can be analyzed at a time by installing multiple tubes and selecting sample files for those ports.