

Agilent V-groove, Inert High TDS Nebulizer

User Guide

The Agilent V-groove nebulizer (p/n G8020-69001) includes the following components:

- Sample inlet line, nebulizer connector to sample tubing (1/16") (4 in Figure 2)
- Gas inlet line, nebulizer to gas adaptor for 5000-series ICP-OES (3 in Figure 2)
- Gas adaptor for 5000-series ICP-OES nebulizer gas outlet (2 in Figure 2)
- Gas adaptor for MP-AES or 700 /Vista Series ICP-OES (1 in Figure 2)
- Cleaning wire, for gas orifice (see Figure 3)



Figure 1 Agilent V-groove, inert high TDS nebulizer

Not included in box:

- Nebulizer connection kit to connect Agilent V-groove nebulizer to AVS switching valve (p/n 5005-0445)

WARNING



Chemical Hazard

Always run rinse solution through the sample introduction compartment components prior to removing the nebulizer, spray chamber, or tubing. Nitric acid, hydrochloric acid and strong alkali solutions are very corrosive and can cause severe burns when they come into contact with skin. Other chemicals used during analysis may also be hazardous. It is essential that appropriate protective clothing be worn at all times when handling these acids or any other chemicals. If chemicals contact the skin, wash off with copious amounts of water and seek medical attention immediately.

Installation

- 1 Set up the nebulizer as shown in the following image. Choose the correct fittings based on your instrument.

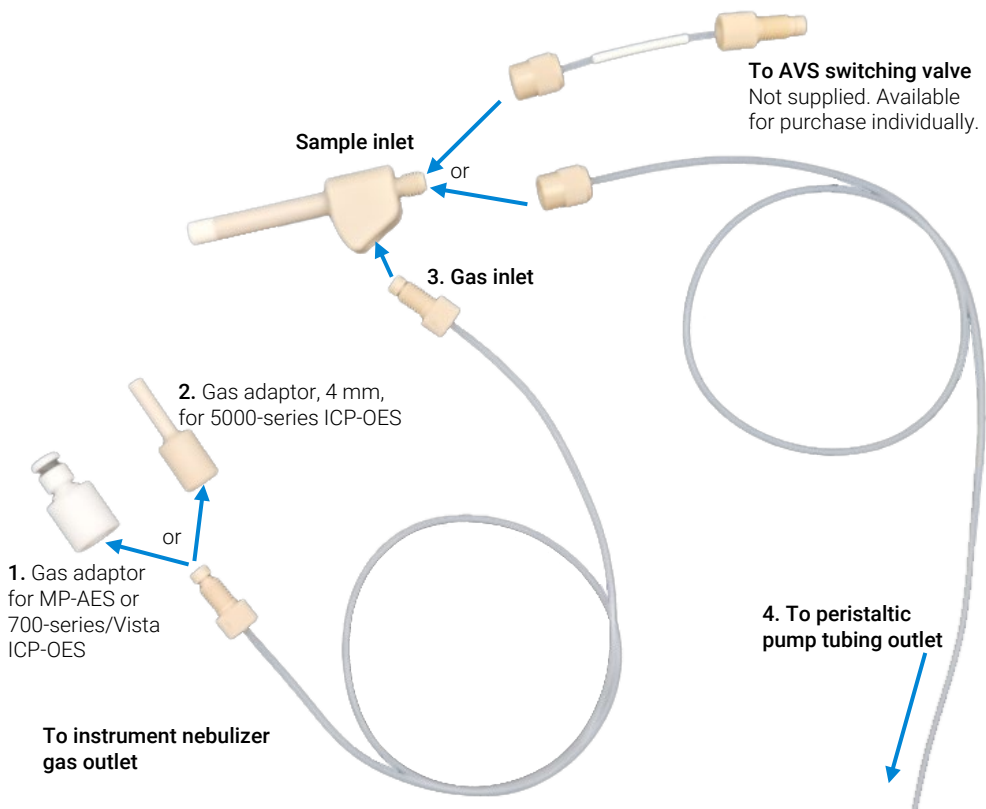


Figure 2 V-groove, inert high TDS nebulizer assembly instructions

- 2 Once assembled, insert the nebulizer fully into the spray chamber, and then secure it.

Maintenance

To maintain optimum performance, always rinse the nebulizer after use to reduce the chance of blockage of the gas orifice as aspirated sample dries e.g., with salt drying over the gas orifice.

Clean the nebulizer at least weekly.

CAUTION Do not sonicate the nebulizer in an ultrasonic bath. The vibrations from the bath could damage the nebulizer internally.

Cleaning the nebulizer

For best performance, it is essential that the sample orifice is clear, and that the tip of the nebulizer and the V-groove are clean and easily wettable.

- 1 Clean the nebulizer by soaking in pure water, dilute detergent solution, or a suitable solvent (depending on the application) for 30 minutes.
- 2 Ensure the nebulizer is submerged **with the tip facing up** – this helps to prevent any debris from making its way into the gas orifice.
- 3 Rinse thoroughly with de-ionized water maintaining a vertical 'tip up' orientation.
- 4 Dry the nebulizer by passing a stream of filtered air, argon, or nitrogen through the gas inlet, ensuring the gas flows out of the tip of the V-groove.
- 5 Then re-install into the spray chamber.

Removing a blockage

If the gas flow drops, or the nebulizer back pressure has increased above the operating limit (indicated by the instrument diagnostics display), or there is visible spluttering of larger droplets, the gas orifice may be fully or partially blocked.

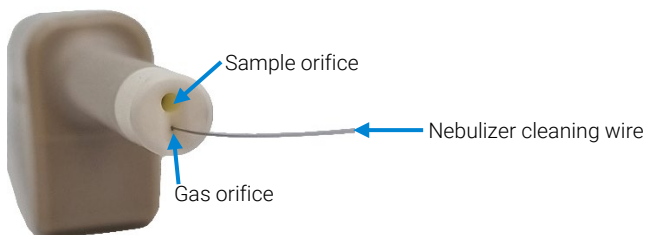


Figure 3 Agilent V-groove, inert high TDS nebulizer orifice cleaning

To clear the orifice:

- 1 Remove the nebulizer from the spray chamber and disconnect the gas line from the nebulizer.
- 2 Insert the nebulizer cleaning wire (supplied), carefully into the gas orifice from the face of the tip.
- 3 Push the wire through until the blockage clears and there is no resistance on the cleaning wire.
- 4 Remove the cleaning wire.
- 5 Rinse the nebulizer thoroughly with de-ionized water, maintaining a vertical 'tip up' orientation.
- 6 Dry the nebulizer by passing a stream of filtered air, argon, or nitrogen through the gas inlet, ensuring the gas flows out of the tip of the V-groove.
- 7 Then re-install into the spray chamber.

CAUTION

Take care that the gas orifice is not damaged or enlarged, as this will permanently degrade the nebulizer performance.

Chemical compatibility

The inert construction of the V-groove nebulizer ensures that virtually any solvent, including hydrofluoric acid, can be nebulized. This nebulizer is also suitable for use with samples that contain high dissolved solids, and slurries (recommended tolerance up to 30% dissolved solids and particle size < 350 µm). While dilute sulfuric acid may be used routinely, prolonged use of concentrated sulfuric acid should be avoided.

Re-ordering information

Description	Part number
V-groove, inert high-TDS, nebulizer for Agilent ICP-OES/MP-AES systems, 1/pk	G8020-69001
Sample inlet line, V-groove nebulizer to sample tubing (1/16"), 1/pk	5005-0447
Gas inlet line, V-groove nebulizer to 5000-series ICP-OES carrier outlet, 1/pk	5005-0446
Adaptor for V-groove gas connection to MP-AES or 700-series/Vista ICP-OES, 1/pk	5005-0448
Cleaning wire, for gas orifice, 0.3 m, 3/pk	5005-0451
Nebulizer connection kit, V-groove nebulizer to AVS switching valve, 1/pk	5005-0445

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