



BETE Fog Nozzle Inc.  
Applications Engineering Department



Phone: 413-772-0846  
Fax: 413-772-6729  
Web: www.bete.com

## Gas Cooling / Quenching Application Instruction Sheet

Thank you for your inquiry for gas quenching assistance. By taking a few minutes to review this instruction sheet, you will allow us to recommend the most applicable BETE nozzle for your application in the shortest amount of time possible.

The three sheets involved in the gas cooling / quenching application process are:

- This instruction sheet
- The data sheet (sheet A)
- The system sketch sheet (sheet B)

After reading this instruction sheet, the next step is to fill out the data sheet. Explanations of each piece of information we require are as follows.

### Gas Cooling / Quenching Data Sheet:

#### Gas Conditions Section:

- **Pressure:** The pressure of the gas being cooled / quenched. Please be sure to indicate absolute or gauge.
- **Inlet Temperature:** The temperature of the gas at the inlet.
- **Target Temperature:** The final temperature you are trying to achieve at the outlet.
- **Inlet Humidity:** The absolute or specific humidity. While this is sometimes difficult to obtain, it is a critical piece of information. We ask you make every effort to include this with your inquiry.
- **Gas Flow:** The flow rate of the gas in terms of one of the units given.

#### Water Conditions Section:

- **Pressure:** The maximum available pressure your pumping system can provide.
- **Temperature:** The temperature of the water being used to cool / quench the gas.
- **Water Cleanliness:** If you answer "No" to this question please be sure to include the free passage requirement in the next question.
- **Air Availability:** The purpose of this question is to find out if an air atomizing nozzle can be used as air atomizing nozzles are almost always more effective in gas cooling/quenching applications. If air is available, please give the pressure and capacity that can be used.
- **Complete Evaporation:** Indicate if the droplets must be completely evaporated at the outlet.

#### System Geometry Section:

- This section asks for the basic system dimensions. Please indicate the geometry of the inlet and outlet. *We ask that this information be confirmed by drawing a basic sketch on sheet B.*

### Gas Cooling / Quenching Sketch Sheet:

A sketch is important for us to know what is between the inlet and outlet in order to properly calculate the maximum allowable droplet size. The sketch does not have to be detailed, in fact the simpler, the better. Please label all basic dimensions.

Once these sheets are completed, please fax them to the number shown at the top of this page.

Thank you for your inquiry.



BETE Fog Nozzle Inc.  
Applications Engineering Department



Phone: 413-772-0846  
Fax: 413-772-6729  
Web: www.bete.com

## Sheet A Gas Cooling / Quenching Application Data Sheet

### Company Information:

Company Name:	
Contact Name:	
Telephone:	Fax:
Email:	
Project / Reference:	

### Gas Conditions:

Pressure:	<input type="checkbox"/> psi <input type="checkbox"/> bar <input type="checkbox"/> kPa <input type="checkbox"/> kg/cm <sup>2</sup> ( <input type="checkbox"/> Gauge or <input type="checkbox"/> Absolute)
Inlet Temperature:	<input type="checkbox"/> °F <input type="checkbox"/> °C
Target Temperature:	<input type="checkbox"/> °F <input type="checkbox"/> °C
Inlet Humidity:	<input type="checkbox"/> lb <sub>m</sub> water / lb <sub>m</sub> Dry Air <input type="checkbox"/> kg water / kg Dry Air
Gas Flow:	<input type="checkbox"/> ACFM <input type="checkbox"/> SCFM <input type="checkbox"/> Nm <sup>3</sup> /hr <input type="checkbox"/> Am <sup>3</sup> /hr

### Water Conditions:

Pressure:	<input type="checkbox"/> psi <input type="checkbox"/> bar <input type="checkbox"/> kPa <input type="checkbox"/> kg/cm <sup>2</sup> ( <input type="checkbox"/> Gauge or <input type="checkbox"/> Absolute)
Temperature:	<input type="checkbox"/> °F <input type="checkbox"/> °C
Is the water clean enough such that clogging is not a concern?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If you answered "No" to the above question, what free passage is required?	
Can air be used in the atomizing process to give a finer spray?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If air can be used, what is the available pressure and capacity?	
Is complete evaporation needed?	<input type="checkbox"/> Yes <input type="checkbox"/> No

### System Geometry:

Inlet Dimensions:	<input type="checkbox"/> Inches <input type="checkbox"/> Feet <input type="checkbox"/> mm <input type="checkbox"/> meters
Inlet Geometry:	<input type="checkbox"/> Round <input type="checkbox"/> Square <input type="checkbox"/> Rectangular <input type="checkbox"/> Other
Outlet Dimensions:	<input type="checkbox"/> Inches <input type="checkbox"/> Feet <input type="checkbox"/> mm <input type="checkbox"/> meters
Outlet Geometry:	<input type="checkbox"/> Round <input type="checkbox"/> Square <input type="checkbox"/> Rectangular <input type="checkbox"/> Other
Quench Length:	<input type="checkbox"/> Inches <input type="checkbox"/> Feet <input type="checkbox"/> mm <input type="checkbox"/> meters



BETE Fog Nozzle Inc.  
Applications Engineering Department



Phone: 413-772-0846  
Fax: 413-772-6729  
Web: [www.bete.com](http://www.bete.com)

## Sheet B

### Gas Cooling / Quenching Application Sketch Sheet

Please provide a basic sketch of the quench system components. The sketch does not have to be detailed. In fact, the simpler, the better. Please include the following in the sketch:

- Basic dimensions
- Anticipated or known nozzle locations
- Gas direction
- Any other information you think will assist us in selecting the best nozzle for your application