BETE frequently provides estimated drop sizes to assist our customers in nozzle selection. This document describes the information contained in our standard droplet size distribution curves. **Figure 1** shows an example where we analyze the TF 10 FCN operating at a differential pressure of 40 PSI

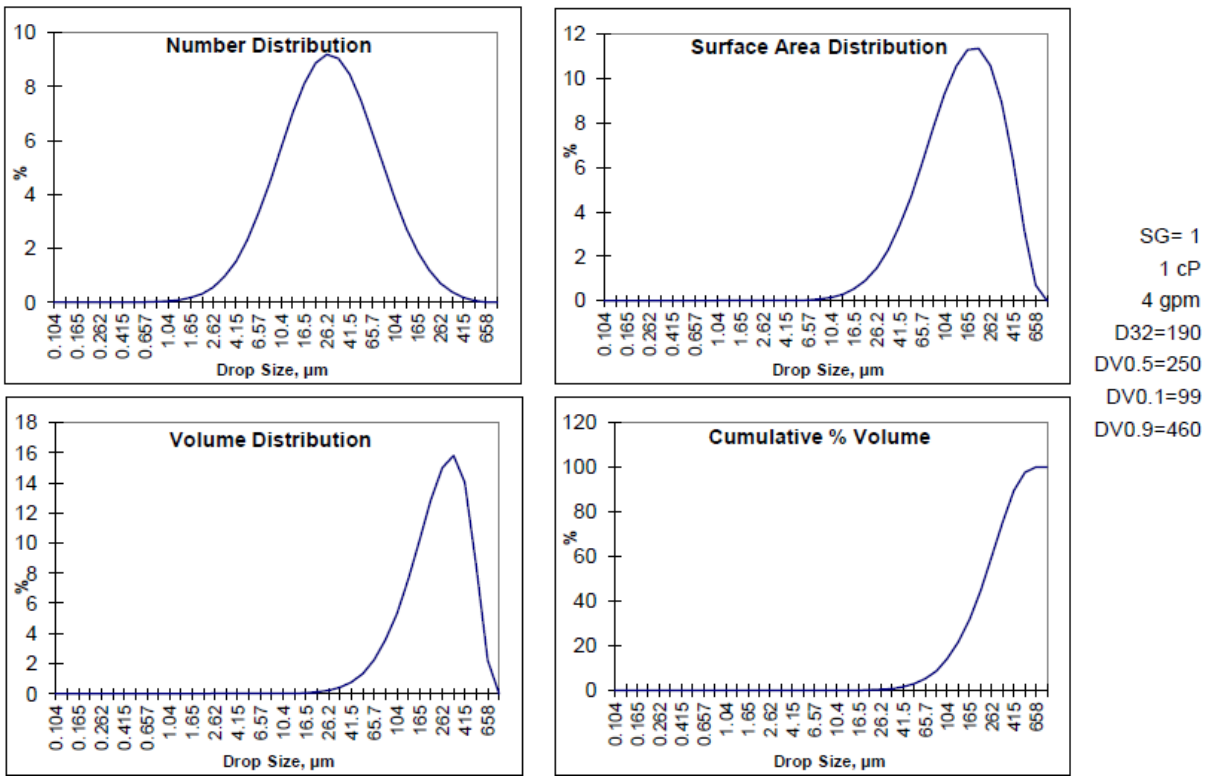


Figure 1

Droplet Diameters

D32 represents the surface area to volume ratio of the spray produced by a nozzle.

- This is typically considered the most useful "average" drop size for processes involving complex chemical interactions, mass transfer, or heat transfer between the sprayed liquid and the gas to be treated.

DV0.5 represents the median droplets in the spray produced by a nozzle. 50% of the volume of the spray is in droplets below the DV0.5, the remaining 50% is in droplets above the DV0.5.

- This is the alternative to D32 for representing the "average" drop size of a spray.

DV0.1 represents the smaller droplets in the spray produced by a nozzle. 10% of the volume of the spray is in droplets below the DV0.1.

- This is typically useful when estimating entrainment rates of a spray into a process gas stream.

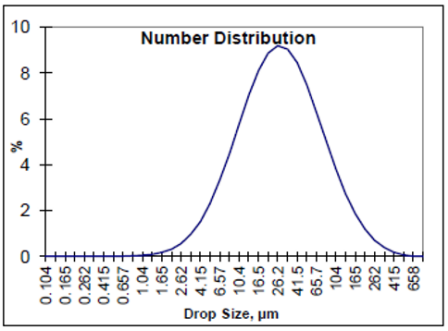
DV0.9 represents the larger droplets in the spray produced by a nozzle. 90% of the volume of the spray is in droplets below the DV0.9, the remaining 10% is in droplets above the DV0.9.

- This is typically useful when ensuring evaporation rates of a spray into a process gas stream.

Number Distribution

From this curve we can determine the most common droplet diameter of the spray at a given moment. The curve shows the spectrum of droplet diameters (x-axis) versus the percentage of the total droplets in the spray that has said diameter (y-axis).

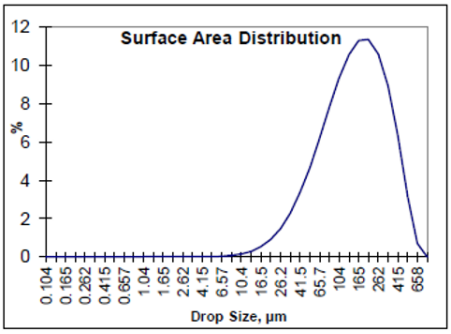
By looking at the top of the curve we can determine that ~9% of the droplets have a diameter of around 26.2 µm.



Surface Area Distribution

From this curve we can determine which size droplets make up the most surface area of the spray at a given moment. The curve shows the spectrum of droplet diameters (x-axis) versus the percentage of total spray surface area presented by droplets of said diameter (y-axis).

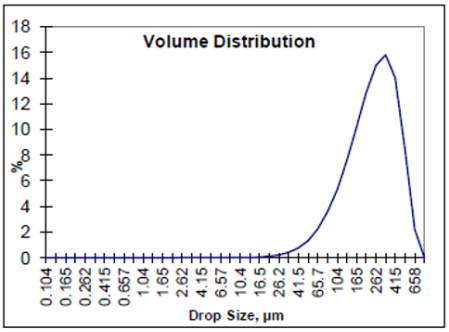
By looking at the top of the curve we can determine that droplets with a diameter of around 165 µm make up ~11% of the total spray surface area.



Volume Distribution

From this curve we can determine which size droplets make up the highest percentage of volume of the spray at a given moment. The curve shows the spectrum of droplet diameters (x-axis) versus the percentage of total spray volume contained in droplets of said diameter (y-axis).

By looking at the top of the curve we can determine that droplets with a diameter of around 262 µm make up ~16% of the total spray volume.



Cumulative % Volume

From this curve we can determine what percentage of the total spray volume has droplet sizes less than a particular droplet diameter. The curve shows the spectrum of droplet diameters (x-axis) versus the percentage of total spray volume that has a diameter less than or equal to said diameter (y-axis).

By looking part way up the slope, we can determine that ~60% of the total spray volume is composed of droplets smaller than 262 µm. By looking at the top of the curve we can determine that ~100% of the total spray volume is composed of droplets smaller than ~550 µm.