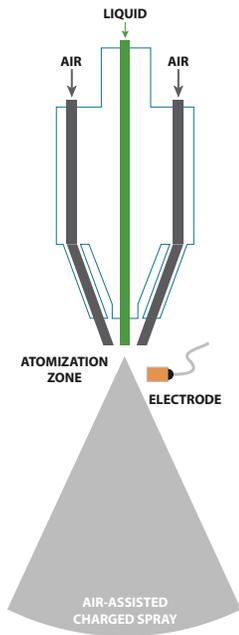


# What Everyone Should Know About Air-assisted Electrostatic Spraying

## What is Air-assisted Electrostatic Spraying?



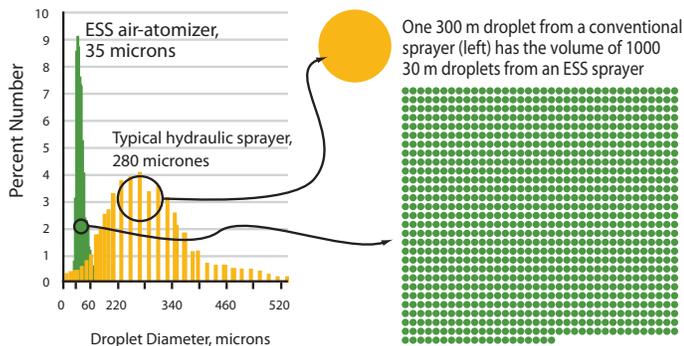
ESS Electrostatic Sprayers use electrostatic technology to give superior spray coverage. But just what is “electrostatic” technology?

At the tip of the ESS MaxCharge™ nozzle is a tiny electrode which applies an electrical charge to the spray. This electrical charging causes a natural force of attraction between the spray droplets and target surface, similar to the attraction between items of clothing created by the tumbling of a clothes dryer. The charge on the droplets is small, but the force pulling the spray towards the target is up to 75 times greater than the force of gravity. Droplets literally reverse direction and move upwards, against gravity, when passing a target surface. This remarkable phenomenon by which the spray coats the undersides and the backsides of the spray target is known as electrostatic “wraparound.”

In practical terms, this means that spray reaches the underside, the back side, and nooks or crevasses of the target surface.

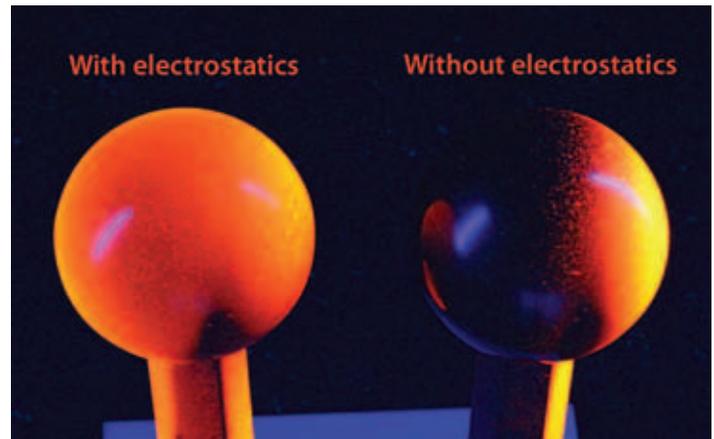
## Size Matters

None of this would be possible if the droplets were the size of those produced by conventional sprayers. Air-assisted electrostatic sprayers manufactured by ESS produce spray droplets which are 900 times smaller. The tiny droplets are blown toward the spray target in a high-speed air stream (the “air-assist”). The result is more than twice the deposition efficiency of other non-electrostatic air-assisted sprayers.



**Spray coverage** is the uniformity of spray droplets on target surfaces. Electrostatic sprayers achieve greater spray coverage by combining air turbulence with tiny, evenly-sized spray droplets. Dense coverage on the back and underneath results from electrostatic wraparound. The goal is to achieve an even coating with the disinfectant chemical. If the coverage is spotty or incomplete, chances increase that dangerous infective organisms will survive. With an electrostatic sprayer, the benefits are clear: Disease control is better because the chance of contact with the disinfecting chemical is greater.

## See for Yourself!



The black knob on the left was sprayed with fluorescent dye and with the electrostatic system turned *on*. However, the knob on the right was sprayed with the electrostatic system *off*. The spray coverage is so uneven that the back side of the knob remains untouched and is actually able to reflect the evenly-coated electrostatic knob.

## Benefits of Electrostatic Spraying

- **Safer for workers, students, and others in the area:** Low volume electrostatic spraying means less chemical exposure for everyone.
- **More effective:** The small droplet size and improved coverage substantially improves the bioavailability of disinfectant compounds.
- **Fewer sick days:** Disinfection limits transmission of many communicable diseases including bacterial infections, influenza and other viruses, and digestive diseases such as the Norwalk virus or *salmonella*.
- **Less toxic chemicals can be used:** The increased effectiveness allows more choices for disinfection and sanitization.
- **Better for the environment:** By using safer chemicals and reducing waste, the total environmental load is substantially lightened.

