

**ANSI/ASABE S641 MAY2018**  
**Droplet Size Classification of Aerial Application Nozzles**



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# **ANSI/ASABE S641 MAY2018**

Approved May 2018 as an American National Standard

## **Droplet Size Classification of Aerial Application Nozzles**

*Developed by the MS-23/6 Application Sys & US TAG ISO TC23/SC6 Committee. Approved as an ASABE standard May2018; approved by ANSI May 2018.*

**Keywords:** Droplet size classification, Aerial sprays, Reference nozzles

### **1 Purpose and scope**

**1.1** This Standard defines droplet size categories for the classification of aerial application spray atomizers, relative to specified reference flat fan nozzles discharging into a high-speed air stream, which enhances atomization simulating aerial application conditions. The purpose of classification is to provide the nozzle user with droplet size information for use in making application decisions to meet pesticide product label and other regulatory requirements related to pesticide spraying by aircraft.

**1.2** This Standard defines a means for relative nozzle comparisons only based on droplet size. Other spray factors related to drift or efficacy such as droplet velocities, droplet densities, discharge height, evaporation and target impaction are not addressed by this Standard.

**1.3** This Standard is based on ASAE/ANSI S572, but accommodates narrower, high speed wind tunnels used to reflect aerial application factors. Primarily, this relates to the requirement for an active air stream/high-speed wind tunnel (rather than “static air or so that no stream of air enhances atomization”) and the selection of reference nozzles. Differences in measurement setups, methods and systems may impact numerical results from lab to lab, like ASAE/ANSI S572. The reference nozzles provide relative classification references that can be evaluated under airspeeds associated with aerial application conditions that cause secondary breakup. The drop size reference curves provided by this standard are equivalent to those in ASAE/ANSI S572, but allow for evaluation in aerial application airspeeds.

### **2 References**

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ANSI/ASAE S572, Spray Nozzle Classification by Droplet Spectra

ASAE S327, Terminology and Definitions for Application of Crop or Forestry Production and Protection Agents

ASTM E1260, Standard Test Method for Determining Liquid Drop Size Characteristics in a Spray Using Optical Non-Imaging Light-Scattering Instruments

ASTM E1296, Standard Terminology Related to Liquid Particle Statistics

ASTM E2872, Standard Guide for Determining Cross-Section Averaged Characteristics of a Spray Using Laser-Diffraction Instruments in a Wind Tunnel Apparatus