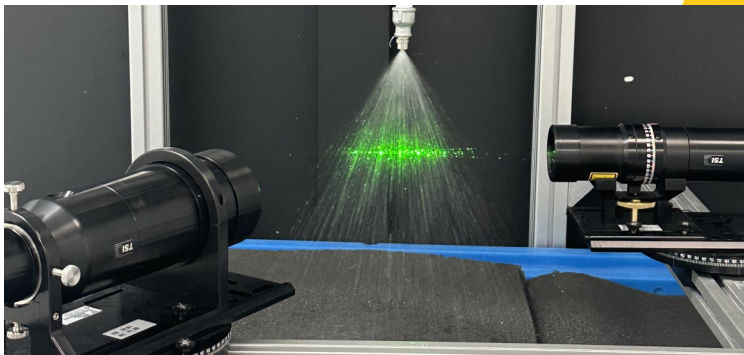


## ADVANCING SPRAY DRYING PERFORMANCE

With over 50 years of experience in spray drying technology, DELAVAN has established itself as an industry leader. Our team of highly skilled engineers and technicians are dedicated to innovation and excellence, ensuring that our products and services consistently meet the highest standards.

Here are a few key reasons why DELAVAN stands out:

1. **Cutting-Edge Technology:** We continuously invest in research and development to bring you the latest advancements in spray drying technology, ensuring maximum efficiency and optimal performance.
2. **Custom Solutions:** Understanding that each customer's needs are unique, we offer tailored solutions designed to meet your specific requirements, ensuring you achieve the best possible results.
3. **Comprehensive Support:** Our commitment to our customers extends beyond the sale. We provide extensive technical support and service, ensuring your equipment operates at peak performance throughout its lifecycle.
4. **Proven Track Record:** Our extensive portfolio of successful projects across various industries demonstrates our capability and reliability in delivering top-notch spray drying solutions.



Precision Tested.  
People Trusted.

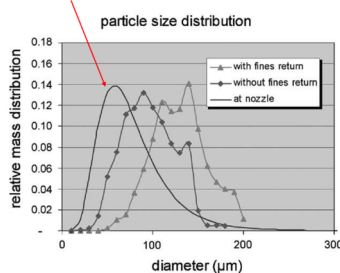
## ADVANCING SPRAY DRYING PERFORMANCE

### Technical Expertise

Almost every dryer requires a unique solution depending on feed material, capacity, and operating conditions. Delavan understands the issues inherent in spray drying and will recommend the right nozzle for the best possible performance.

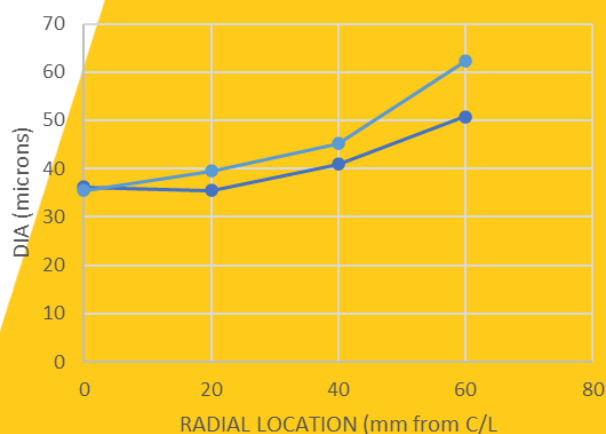
#### Spray Drying Droplet to Powder

Match droplet formed to product



DELAVAN<sup>®</sup>  
SPRAY TECHNOLOGIES

#### D32 - RADIAL LOCATION



### SDX V Optimise the droplet for the product powder

So 2 further selections we get flow of 867 L/hr with a set pressure of 220 bar + check on droplet of water

#### SDX<sup>®</sup> Calculator - Other Liquids

Pressure Units:

SDX<sup>®</sup> Orifice Number 703-:

SDX<sup>®</sup> Swirl Chamber:

Input Pressure:  bar

Specific Gravity:

Solids Percentage:

#### SDX<sup>®</sup> Results - Other Liquids

The estimated flowrate of water is 867.89 lph at 220 bar

The estimated spray angle is 081°

#### SDX<sup>®</sup> Results - Droplet Size

The Sauter Mean Diameter of water droplets is:

54.811 µm

This result is based on using water at 1,020.54 lph with a spray angle of 081° and a pressure drop of 220.00 bar

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# ADVANCING SPRAY DRYING PERFORMANCE

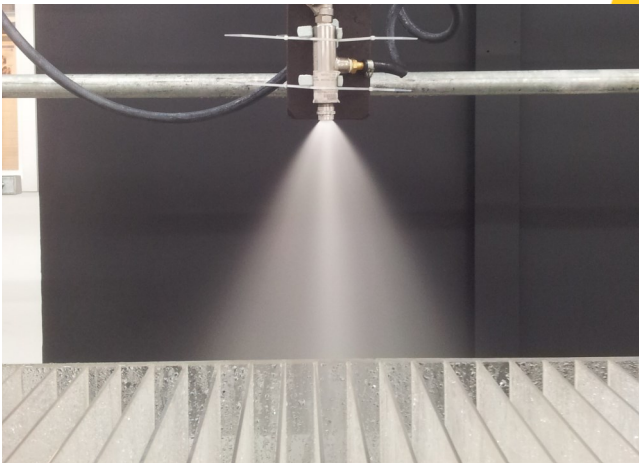
## **SDX for High Pressure Nozzle applications**

Delavan is continually evaluating the critical design features of the various models of nozzle that comprise the SDX<sup>®</sup> range. This engineering work, combined with feedback from thousands of users around the world, generates opportunities to improve the performance of the product as well as lowering the cost of ownership and simplifying maintenance.

The latest generation of SDX 5 is the most user friendly spray dry nozzle on the market providing a wide range of customisable options to ensure the nozzle is tailored to suit your individual requirements. Droplet size, velocity, pressure, and spray angle are all key considerations when looking to optimise the process.

## **AL and Swirl Air Nozzles for two fluid Nozzle Applications**

Dual Fluid Air Atomising Designs with AL and Swirl Air offer internal and external mixing to atomise high viscosity solutions into super fine powders.



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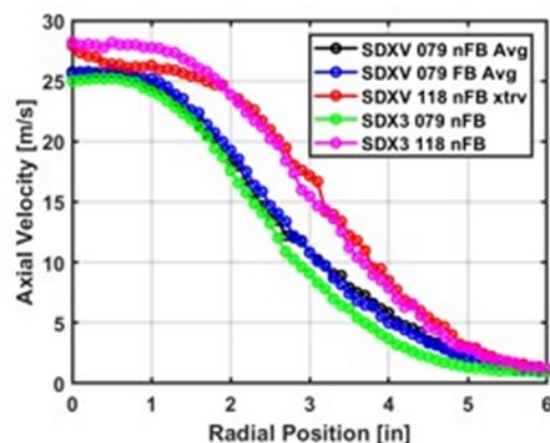
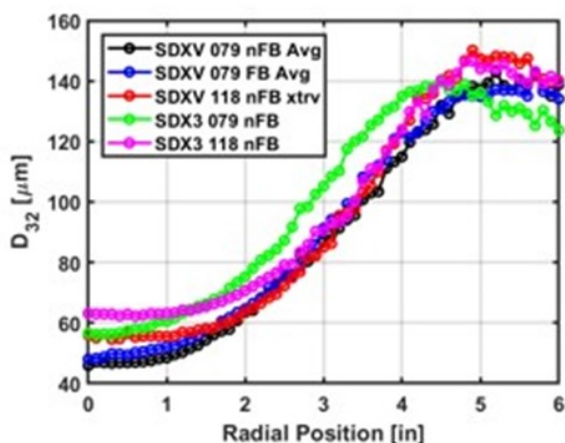
## ADVANCING SPRAY DRYING PERFORMANCE

### Maintenance Considerations

The Delavan SDX<sup>®</sup> nozzle range has been specifically designed for high pressure applications with the SDX<sup>®</sup> III configuration being in service throughout the world for over 40 years. Each component throughout the SDX<sup>®</sup> range is precision machined to tested and proven dimensions with close tolerances to suit the exacting requirements demanded by the process.

In order to ensure that the nozzles continue to operate effectively, it is vital that each component is handled carefully, ensuring that there is no damage to the components. This is particularly important with the sealing surface areas and the threads. Any slight damage to a sealing face or surface, or to a thread profile, can potentially cause an issue. If there is any doubt about the condition of a component, Delavan would suggest that the item is replaced.

The Delavan SDX<sup>®</sup> range of nozzles has been operating successfully and safely throughout the world for over 60 years. In developing the SDX<sup>®</sup> range, independent high pressure cycling and proof pressure testing was commissioned in order to ensure that we can support the ever increasing demands of our customers.



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## ADVANCING SPRAY DRYING PERFORMANCE

### Maintenance Considerations

#### Training

The Delavan SDX<sup>®</sup> range of nozzles are fully supported in the field through organized training sessions and backed by decades of technical experience in spray drying. Delavan offers a maintenance and training program for operators and OEMs to ensure that you have all of the tools necessary for trouble free operation of your spray nozzles.

#### **Some of the topics covered are:**

- Maintenance
- Assembly / disassembly
- Inspection of carbide components, the effects of wear, and what to look out for
- Best practice guide
- Cleaning / CIP



Damage to threads on SDX 3 Nozzle



Incorrect orifice and swirl chamber material selection, resulting in premature wear. For advice on material and compatibility contact Delavan.

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