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About Us

Spraybase® is a sub-division of Avectas Ltd, is a privately-owned irish company. Over the past number of years, we have developed Spraybase® into the world's first integrated, fully customizable benchtop instrument that allows researchers to perform electrospinning and electrospraying with a diverse range of polymers, proteins, biologics and more.

The Spraybase® suite of instruments, applies an electric charge to a low-viscosity fluid to electrospray droplets that dry into nano or micro sized particles, or to a high-viscosity fluid to electrospin micro or nanofibers. Spraybase® uses air pressure for electrospraying rather than a syringe pump to provide the most consistent, reliable flow of evenly sized droplets. All Spraybase® systems can be fully tailored to the type of particle, fiber, fluid, or substrate of interest. Our instruments feature integrated cameras for real-time experiment visualization.

Our CE-marked technology consists of simple and effective products designed for unparalleled ease of use, safety, reproducibility and flexibility. Spraybase® products are developed and manufactured onsite by an expert team following a decade of research.

We know that every electrospraying or electrospinning project has different needs, so we pride ourselves on delivering outstanding customer support. Spraybase® devices can be found in hundreds of academic and industry research labs around the world.

Spraybase® is the world’s first integrated, fully customizable benchtop instrument that allows researchers to perform electrospinning and electrospraying with a diverse range of polymers, proteins, biologics and more. Our products are designed for unparalleled ease of use, safety, reproducibility and flexibility.
Technical Detail

Electrospraying

Electrospraying, which produces nano and micro scale particles, are among the most promising new technologies in biomedical research, particle encapsulation, drug delivery, thin film deposition, and more.

Electrospinning

Electrospinning, enables manufacture of materials including aligned and randomly distributed fibers, core sheath fibers, porous fibers which again can be utilized in a broad range of applications across many disciplines including regenerative medicine, tissue engineering, wound healing, encapsulation drug delivery, energy storage and textiles.

Representation of Electrospraying and Electrospinning.
Materials

Selection of the materials our R&D Team have processed in-house using the Spraybase® Systems.

Electrospinning

- PCL
- PDLG/PLGA
- TPU
- PVP
- PVA
- PEG
- Gelatin

Electrospraying

- BSA
- Riboflavin
- Mannitol
- Chitosan
- PLGA
- PVA
- PGS
Applications

- Regenerative Medicine
- Tissue Engineering
- Drug Delivery
- Encapsulation
- Thin Film Deposition
- Food Science
- Electronics
- 3D Scaffolds
- Textiles
- Filter Media
- Wound Healing
- Food Science
- Regenerative Medicine
- Sensor Devices
- Energy & Fuel Storage
- Automotive
- Biomaterials
- Cell Encapsulation
- Thin Layer Deposition
- Textiles
- 3D Scaffolds
## Fluidic Control

### Which method of fluidic control is most suitable for you?

<table>
<thead>
<tr>
<th>Spraybase® Exclusive</th>
<th>Software Controlled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure over Fluid System</td>
<td>Syringe Pump</td>
</tr>
</tbody>
</table>

### WHY USE?

- **Spraybase®** recommends our pressure driven fluid system to control the flow rate for your experiments due to the peristaltic effect of the syringe pump.

- **The majority of researchers today utilise a syringe pump to deliver solution to the emitter tip to enable the flow of the solution in the electrohydrodynamic technique. This is the more traditional method of fluidic control.**

### ADVANTAGES

**Spraybase® Exclusive**

- Zero dead volume therefore ideal for precious materials and small quantities.
- Superior control over the flow rate especially for low viscous solutions.
- A continuous flow unlike the syringe pump which has a pulsatile effect from the mechanics of the motor.
- The pressure over fluid is ideal to ensure a reproducible and robust technology.

**Software Controlled**

- Software Controlled using PC/Laptop
- Compatible with a wide range of syringes with respect to both size and material.
- Infusion rate of 0.75 ul/hr to a maximum of 2100 ml/hr
- Maximum syringe size 60 cc

---

Spraybase® 20 kV, 1 bar Power Supply Controller

Spraybase® Syringe Pump
Product Spotlight

Spraybase® Climatic Control Chamber

Fully Integrated Climatic Control chamber with visualization window and humidity and temperature control. This device is for creating an ideal environment and not for utilizing extreme parameters.

Measurement Accuracy ±2% RH (10 to 90%RH) and ±0.5°C (0-80°C)

Designed to fit over Spraybase® Instruments only

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min temperature 18°C</td>
<td>Maximum Relative Humidity</td>
</tr>
<tr>
<td>Max temperature 52°C</td>
<td>at 20°C is 65%</td>
</tr>
<tr>
<td></td>
<td>Minimum Relative Humidity</td>
</tr>
<tr>
<td></td>
<td>at 50°C is 25%</td>
</tr>
</tbody>
</table>
The MELT by Spraybase®

The Spraybase® MELT electrospinning instrument will enable the production of 3D scaffolds for your tissue engineering research.

**Technology:** Melt Electrospinning is a solvent free technology bridging the gap between current additive manufacturing technologies such as 3D printing and solution Electrospinning.

**Low-Micron Size Fibers:** Molten Polymer is used to generate fibers in the range of 5-40 um.

**Versatile:** Broad range of FDA approved biocompatible polymers such as PCL, PLA and PLGA can be utilised to create 3D scaffolds in a controlled manner.

**Ease and Flexibility of Use:** We have developed a G-code programme to convert your specific grid into the G-code required to create your scaffold.
### General Description

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>The MELT by Spraybase®</td>
</tr>
<tr>
<td>Description</td>
<td>Melt Electrospinning Instrument</td>
</tr>
<tr>
<td>Catalogue Number</td>
<td>A-1204-0001-01D</td>
</tr>
<tr>
<td>Produced In</td>
<td>Ireland</td>
</tr>
</tbody>
</table>

### High Voltage Power Supply

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage Range</td>
<td>0-20 kV</td>
</tr>
<tr>
<td>Voltage Resolution</td>
<td>10 V</td>
</tr>
<tr>
<td>Voltage Display</td>
<td>Digital display</td>
</tr>
<tr>
<td>Max Current</td>
<td>0.18 mA</td>
</tr>
<tr>
<td>Voltage Input</td>
<td>110 – 240 VAC, 50/60 Hz</td>
</tr>
<tr>
<td>High Voltage Connection</td>
<td>30 kV rated HV cable, plug and socket</td>
</tr>
</tbody>
</table>

### Spraybase® Polymer delivery method - Pressure driven

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Rate</td>
<td>Up to 5 bar pressure</td>
</tr>
<tr>
<td>Flow Rate resolution</td>
<td>1 mbar</td>
</tr>
<tr>
<td>Flow Rate and Volume Display</td>
<td>Digital display</td>
</tr>
<tr>
<td>Maximum Volume Capacity</td>
<td>5 g of molten polymer/material</td>
</tr>
<tr>
<td>Number of emitters</td>
<td>1</td>
</tr>
<tr>
<td>Emitter Material</td>
<td>Stainless steel/Brass</td>
</tr>
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</table>

### XYZ Stage

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYZ stage</td>
<td>Travel: 150 x 150 x 170 mm</td>
</tr>
<tr>
<td>XYZ maximum translational speed</td>
<td>24,000 mm/min</td>
</tr>
<tr>
<td>XYZ stage position accuracy</td>
<td>120 um</td>
</tr>
<tr>
<td>Collection area</td>
<td>150 x 150 mm</td>
</tr>
<tr>
<td>Emitter to Collector Distance</td>
<td>150 mm</td>
</tr>
</tbody>
</table>

### Additional Information

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Installations</td>
<td>Safety cover is interlocked for HV, heater operation &amp; machine movement</td>
</tr>
<tr>
<td>Operating Temperatures</td>
<td>25-250 °C</td>
</tr>
<tr>
<td>Certification</td>
<td>CE</td>
</tr>
</tbody>
</table>

### Technical Requirements

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Electrical</td>
<td>110-220 V, 50-60 Hz</td>
</tr>
<tr>
<td>Air</td>
<td>Compressed air, 6 mm inlet</td>
</tr>
</tbody>
</table>

### Spraybase® MELT Dimensions

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length x depth x height</td>
<td>670 mm x 750 mm x 800 mm</td>
</tr>
<tr>
<td>Height door open</td>
<td>1120 mm (Including handle)</td>
</tr>
<tr>
<td>Weight</td>
<td>50 kg</td>
</tr>
</tbody>
</table>

Note you will also require a Laptop/PC for downloading programs
Spraybase® Kits:

The Spraybase® system is modular and as a result, we have designed Spraybase® Kits to ensure that our customers receive everything they need to enable their research. All components and accessories are included so when your new Spraybase® instrument arrives in the lab all you need to do is plug in the Spraybase® and add your desired solution.

The following benefits of our system make it easy to tailor make our instruments to suit your specific requirements so talk to us today about your research and how we help design a Spraybase® kit. Contact us www.spraybase.com/contactus

- Modular Components
- Interchangeable collectors
- Power Supply Upgrades
- Modify your system from to Co-axial/Tri-axial
- Multi-emitter options

Note: All systems using pressure over fluid will require a source of regulated compressed air. (Available to purchase)

The table on the following page is a guide to our existing and available kits and the components of each one:
<table>
<thead>
<tr>
<th>CAT No.</th>
<th>Spraybase® Kit Description</th>
<th>Power Supply</th>
<th>Fluid Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>20kV</td>
<td>30kV</td>
</tr>
<tr>
<td>A-0001-001-01</td>
<td>Spraybase® 20kV Electrospinning Starter Kit</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>A-0002-001-01</td>
<td>Spraybase® 20kV Electrospraying Starter Kit</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>A-0007-001-01</td>
<td>Spraybase® 30kV Electrospinning Kit</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>A-0008-001-01</td>
<td>Spraybase® 30kV Electrospraying Kit</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>A-0033-001-01</td>
<td>Spraybase® 20kV Electrospinning &amp; Electrospraying Kit</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>A-0056-001-01</td>
<td>Spraybase® 20kV Coaxial Electrospinning Kit</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>A-0057-001-01</td>
<td>Spraybase® 20kV Coaxial Electrospinning Rotating Drum Kit</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>A-0075-001-01</td>
<td>Spraybase® 20kV Coaxial Electrosprying Kit</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>A-0077-001-01</td>
<td>Spraybase® 30kV Electrospinning and Electrospraying Kit</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>A-0078-001-01</td>
<td>Spraybase® 30kV Coaxial Electrospinning Kit</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>A-0142-001-01</td>
<td>Spraybase® 30kV Electrospraying Rotating Drum Kit</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>A-0143-001-01</td>
<td>Spraybase® Climatic Control 20kV Electrospinning Kit</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>A-0144-001-01</td>
<td>Spraybase® Climatic Control 20kV Electrospraying Kit</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
Most Popular Spraybase® Kit Components

Spraybase® 20kV Power Supply Controller
A-0005-0001-01

Spraybase® Syringe Pump
A-0004-0001-01

Spraybase® 20 kV, 1 bar Power Supply Controller
A-0047-0001-01

Electrospraying Pressure Vessel
A-0066-0001-01

Spraybase® Safety Cover
A-0030-0001-01

Spraybase® Electrosprinning Platform
A-0006-0001-01

HV Emitter Holder
A-0065-0001-01

Spraybase® Imaging System
A-0028-0001-01

Custom Single Emitter
A-0071-0001-01

Flat Plate Collector
A-0068-0001-01

Dish Collector
A-00620-0001-01

Tubing
A-0049-0001-01
(50/51/53/54)

Climatic Control Chamber
A-0041-0001-01

Quick Start Coaxial Emitter
A-0011-0001-01

Silent Air Compressor
A-0026-0001-01

Electrospraying Emitter Family Pack
A-0009-0001-01
A-0001-0001-01
Spraybase® 20kV Electrospinning Starter Kit

WHAT’S INCLUDED:

- Spraybase® 20kV Power Supply Controller
- Spraybase® Syringe Pump
- Spraybase® Electrospinning Platform on anti-vibration mounts. (Base, Z-axis Emitter Positioner, HV Emitter Holder, Flat Plate Collector for collecting fibers)
- Spraybase® Imaging System - Camera for visualization and recording of the Taylor cone.
- Spraybase® Safety Cover with voltage interlock.
- 1 x Tube F (ID 1.0 mm)
- 1 x 18 G emitter

A-0002-0001-01
Spraybase® 20kV Electrospraying Starter Kit

WHAT’S INCLUDED:

- Spraybase® 20 kV, 1 bar Power Supply Controller
- Up to 1 bar pressure output with Electrospraying Pressure Vessel
- Spraybase® Electrospraying Platform on anti-vibration mounts (Base, Z-axis Emitter Positioner, HV Emitter Holder, Dish Collector for collecting particles)
- Spraybase® Imaging System - Camera for visualization and recording of the Taylor cone with Electrospraying Illumination Source to illuminate the plume.
- Spraybase® Safety Cover with voltage interlock.
- 1 x Tube C (ID 0.5 mm)
- 1 x 30 G emitters.

AVAILABLE IN 30kV: A-0007-0001-01

BENEFITS

- Modularized System
- Visual & Optical Software
- Interchangeable Collectors
- Gold Push Pin Connections
- Safety Interlock

AVAILABLE IN + 30kV: A-0008-0001-01

BENEFITS

- Modularized System
- Visual & Optical Software
- Interchangeable Collectors
- Gold Push Pin Connections
- Safety Interlock
A-0033-0001-01
Spraybase® 20kV Electrospinning & Electrospraying Kit

WHAT’S INCLUDED:

- Spraybase® 20 kV, 1 bar Power Supply Controller
- Spraybase® Syringe Pump
- Up to 1 bar pressure output with Electrospraying Pressure Vessel
- Spraybase® Electrospraying Platform on anti-vibration mounts (Base, Z-axis Emitter Positioner, HV Emitter Holder, Dish Collector for collecting particles)
- Flat Plate Collector for collecting fibers
- Spraybase® Imaging System - Camera for visualization and recording of the Taylor cone with Electrospraying Illumination Source to illuminate the plume.
- Spraybase® Safety Cover with voltage interlock.
- 1 x Tube C (ID 0.5 mm), 1x Tube F (ID 1.0mm)
- 1 x 30 G emitter, 1x 18G Emitter

A-0057-0001-01
Spraybase® 20kV Spraydrum Electrospinning Kit

WHAT’S INCLUDED:

- Spraybase® 20 kV Power Supply Controller
- Spraybase® Syringe Pump
- Rotating Drum Collector
- 1x 18G emitter
- 1 x Tube F (ID 1.0 mm)
- Spraybase® Rotating Drum Safety Cover with voltage interlock.

AVAILABLE IN 30kV: A-0077-0001-01

BENEFITS

- Modularized System ✓
- Visual & Optical Software ✓
- Interchangeable Collectors ✓
- Gold Push Pin Connections ✓
- Safety Interlock ✓

AVAILABLE IN 30kV: A-0142-0001-01

BENEFITS

- Modularized System ✓
- Visual & Optical Software ✓
- Interchangeable Collectors ✗
- Gold Push Pin Connections ✓
- Safety Interlock ✓
### A-0056-0001-01

**Spraybase® 20kV Coaxial Electrospinning Kit**

**WHAT’S INCLUDED:**
- Spraybase® 20kV Power Supply Controller
- 2 x Spraybase® Syringe Pump
- Quick Start Coaxial Emitter
- Spraybase® Electrospinning Platform on anti-vibration mounts. (Base, Z-axis Emitter Positioner, HV Emitter Holder, Flat Plate Collector for collecting fibers)
- Spraybase® Imaging System - Camera for visualization and recording of the Taylor cone.
- Spraybase® Safety Cover with voltage interlock.
- 2x Tube F (ID 1.0 mm)

### A-0075-0001-01

**Spraybase® 20kV Coaxial Electrospaying Kit**

**WHAT’S INCLUDED:**
- Spraybase® 20kV, 1 bar Power Supply Controller
- Up to 1 bar pressure output with Electrospaying Pressure Vessel
- Spraybase® Syringe Pump
- Spraybase® Electrospaying Platform on anti-vibration mounts (Base, Z-axis Emitter Positioner, HV Emitter Holder, Dish Collector for collecting particles)
- Spraybase® Imaging System - Camera for visualization and recording of the Taylor cone with Electrospaying Illuminaion Source to illuminate the plume.
- Spraybase® Safety Cover with voltage interlock.
- Quick Start Coaxial Emitter
- 2 x Tube C (ID 0.5 mm)

### AVAILABLE IN 30kV: A-0078-0001-01

**BENEFITS**
- Modularized System ✓
- Visual & Optical Software ✓
- Interchangeable Collectors ✓
- Gold Push Pin Connections ✓
- Safety Interlock ✓
A-0143-0001-01

Spraybase® Climatic Control 20kV Electrospinning Kit

WHAT’S INCLUDED:
- Climatic Control chamber with visualization window and humidity and temperature control.
- Spraybase® 20kV Power Supply Controller
- Spraybase® Syringe Pump
- Spraybase® Electrospinning Platform on anti-vibration mounts. (Base, Z-axis Emitter Positioner, HV Emitter Holder, Flat Plate Collector for collecting fibers)
- Spraybase® Imaging System - Camera for visualization and recording of the Taylor cone.
- Spraybase® Safety Cover with voltage interlock.
  - 1 x Tube F (ID 1.0 mm)
  - 1 x 18 G emitter

SEE PRODUCT SPOTLIGHT PAGE 7 FOR FURTHER INFORMATION

A-0144-0001-01

Spraybase® Climatic Control 20kV Electrospraying Kit

WHAT’S INCLUDED:
- Climatic Control chamber with visualization window and humidity and temperature control.
- Spraybase® 20 kV, 1 bar Power Supply Controller
- Up to 1 bar pressure output with Electrospraying Pressure Vessel
- Spraybase® Electrospraying Platform on anti-vibration mounts (Base, Z-axis Emitter Positioner, HV Emitter Holder, Dish Collector for collecting particles)
- Spraybase® Imaging System - Camera for visualization and recording of the Taylor cone with Electrospraying Illumination Source to illuminate the plume.
- Spraybase® Safety Cover with voltage interlock.
  - 1 x Tube C (ID 0.5 mm)
  - 1 x 30 G emitters.

SEE PRODUCT SPOTLIGHT PAGE 7 FOR FURTHER INFORMATION
Collectors

**A-0068-0001-01**
**Flat Plate Collector**

**ABOUT:**
Flat plate collector can be interchanged on the Spraybase® Electrospinning Platform. It includes cable to connect collector to the ground return stud on a Spraybase® power supply controller.

** FEATURES**
| RPM | X |
| Interchangeable | ✓ |
| Dimensions | 114x179x1mm |
| Stainless Steel | ✓ |
| Customizable | X |

**A-0020-0001-01**
**Dish Collector**

**WHAT’S INCLUDED:**
Purpose designed 90mm circular stainless steel collector with lid for Electrospraying or Electrospinning. Collect fibres or particles. Autoclavable, reusable and durable for everyday use. Pack contains 1 dish and 1 lid.

** FEATURES**
| RPM | X |
| Interchangeable | ✓ |
| Dimensions | 90mm |
| Stainless Steel | ✓ |
| Customizable | X |

**A-0141-0001-01**
**Parallel Plate Collector**

**ABOUT:**
Parallel plates for aligned fiber collection. Consists of two 2mm thick aluminium plates with adjustable separation.
A-0149-0001-01

Spraybase® Rotating Mandrel with Translation

Create fibers in a tubular structure. Translation included to allow an even deposition.

WHAT’S INCLUDED:

- This includes a set of mandrel collectors, controller and stage.
- It includes 4 mandrels, 1 each of 3, 4, 5 and 6 mm. Working length is 100 mm.
- Material is hardened Steel, SKD61 for the mandrels.
- The emitter to collector distance range is 20-200 mm.
- The rotational speed can be adjusted from 0-4000 rpm.
- Programmable linear slider with stroke length of 150mm which can be tailored to allow full coverage of the spray along the mandrel.

A-0003-0001-01

Spraybase® Rotating Drum Collector

ABOUT:

- 240VAC or 110VAC
- The horizontal moving emitter is a programmable linear motion emitter with linear speed and acceleration of 0-1.0 m/s.
- Range of emitter to collector distance can be changed from 5-30 cm.
- Spraybase® Rotating Drum Collector Transparent Safety Cover with interlock.

FEATURES

<table>
<thead>
<tr>
<th>RPM</th>
<th>4000</th>
</tr>
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<tbody>
<tr>
<td>Interchangeable</td>
<td>✓</td>
</tr>
<tr>
<td>Dimensions</td>
<td>3, 4, 5, 6 mm</td>
</tr>
<tr>
<td>Stainless Steel</td>
<td>✓</td>
</tr>
<tr>
<td>Customizable</td>
<td>✓</td>
</tr>
</tbody>
</table>

FEATURES

<table>
<thead>
<tr>
<th>RPM</th>
<th>4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interchangeable</td>
<td>X</td>
</tr>
<tr>
<td>Dimensions</td>
<td>300x300x96.5mm</td>
</tr>
<tr>
<td>Stainless Steel</td>
<td>✓</td>
</tr>
<tr>
<td>Customizable</td>
<td>✓</td>
</tr>
</tbody>
</table>
Emitters

A-0071-0001-01
Custom Single Emitter

WHAT’S INCLUDED:
Choose any size of emitter from size 30 to 16G
*15 G to 11 G also available upon request (additional charge)

A-0009-0001-01
Electrospinning Emitter Family Pack

WHAT’S INCLUDED:
The family pack contains 16, 18, 20, 22, 24, and 26 Gauge emitters (2 each, 12 Emitters in pack).

A-0010-0001-01
Electrospraying Emitter Family Pack

WHAT’S INCLUDED:
The family pack includes 20, 22, 24, 26, 28 and 30 Gauge emitters (2 each, 12 emitters in pack)

All Emitters are compatible with the Spraybase® emitter holder.

**FEATURES**

<table>
<thead>
<tr>
<th>Feature</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reusable</td>
<td>✓</td>
</tr>
<tr>
<td>Autoclavable</td>
<td>✓</td>
</tr>
<tr>
<td>306 Stainless Steel Shaft</td>
<td>✓</td>
</tr>
<tr>
<td>Plated Brass Hub</td>
<td>✓</td>
</tr>
<tr>
<td>25mm in Height</td>
<td>✓</td>
</tr>
</tbody>
</table>

Regenerative Medicine | Tissue Engineering | Drug Delivery | Encapsulation | Thin Film Deposition | Food Science | Electronics

20
Multi Emitters

A-0011-0001-01
Quick Start Coaxial Emitter
WHAT’S INCLUDED:
20G outside, 26G inside emitter configuration.

CUSTOMIZE your coaxial emitter
(A-0012-0001-01) using your specific
gauge sizes.
Spraybase recommends:
26/20G, 22G/28G, 186/24G etc.

A-0013-0001-01
Triaxial Emitter
WHAT’S INCLUDED:
The Triaxial Emitter can be
customised to specific gauge
sizes ranging from 12G to 28G
Spraybase recommends:
16G/ 20G/ 26G
18G/ 24G/ 28G etc

A-0069-0001-01
Tetra-axial Emitter
WHAT’S INCLUDED:
The Tetra-axial Emitter can be
customised to specific gauge
sizes ranging from 12G to 28G

FEATURES
- Reusable
- Autoclavable
- 304 Stainless Steel Shaft
- Plated Brass Hub
- 25mm in Height
Tubing

For Code See Table

Tubing for Electrospinning and Electrospraying

WHAT’S INCLUDED:
We offer 5 different sizes of 1 meter length PTFE tubing with male luer to female 1/4”-28 adaptor and female luer to female 1/4”-28 adaptor. We recommend Tubes A, B & C for Electrospraying and Tubes E & F for Electrospinning.

<table>
<thead>
<tr>
<th>INT DIAMETER</th>
<th>MATERIAL</th>
<th>CODE</th>
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<tbody>
<tr>
<td>Tube A 127 μm</td>
<td>FEP</td>
<td>A-0049-0001-01</td>
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<tr>
<td>Tube B 0.3 mm</td>
<td>PTFE</td>
<td>A-0050-0001-01</td>
</tr>
<tr>
<td>Tube C 0.5 mm</td>
<td>PTFE</td>
<td>A-0051-0001-01</td>
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<tr>
<td>Tube E 0.8 mm</td>
<td>PTFE</td>
<td>A-0053-0001-01</td>
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<tr>
<td>Tube F 1 mm</td>
<td>PTFE</td>
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Spraybase® Expansion Packs

A-0134-0001-01
Electrospinning Expansion Pack
WHAT’S INCLUDED:

<table>
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<tr>
<th>Emitter Size</th>
<th>16</th>
<th>18</th>
<th>20</th>
<th>22</th>
<th>24</th>
<th>26</th>
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<table>
<thead>
<tr>
<th>Tube Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>E</th>
<th>F</th>
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A-0135-0001-01
Electrospraying Expansion Pack
WHAT’S INCLUDED:

<table>
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<tr>
<th>Emitter Size</th>
<th>16</th>
<th>18</th>
<th>20</th>
<th>22</th>
<th>24</th>
<th>26</th>
<th>28</th>
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</table>

A-0138-0001-01
Coaxial Expansion Pack
WHAT’S INCLUDED:

- Quick Start Coaxial Emitter

<table>
<thead>
<tr>
<th>Tube Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>E</th>
<th>F</th>
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</table>
Spraybase® Accessories

A-0066-0001-01
Electrospraying Pressure Vessel

WHAT’S INCLUDED:

• 250 ml pressure vessel to hold solution - Pressure Vessel, Pressure Cap, Pressure Vessel Plug
• Tube D – Electrospraying Pressure Vessel Tubing for connecting an Electrospraying Pressure Vessel to a Spraybase® power supply controller with pressure regulation.

A-0068-0001-01
Eppendorf Holder

WHAT’S INCLUDED:
Suitable for small samples up to 10 ul. Place your precious sample into an Eppendorf tube and mount it onto the Eppendorf Holder and place it into the pressure vessel. This is compatible with the pressure driven system only.

A-0110-0001-01
ITO Flexible PET Sheets

Deposit your material onto flexible easy removable conducting sheets.

DESCRIPTION:

• Material: PET
• Dimensions: 300 mm x 300 mm x 175 microns
• ITO Resistance 50-80 Ohms/Sq
• 5 Sheets included in Pack.
Spraybase® Accessories

A-0089-0001-01

Dual HV Emitter Holder Upgrade

Looking to increase yield or spin/spray two different solutions simultaneously.

WHAT’S INCLUDED:
Spraybase® Dual HV Emitter Holder Upgrade Pack to add a secondary HV Emitter Holder to a Spraybase® Electrospaying or Electrospinning Platform.

A-0026-0001-01

2.5 bar clean air compressor (220V)

WHAT’S INCLUDED:
4 bar oil free lab air compressor (220 VAC) suitable for countries using IEC plug type G and EU Schuko plug CEE 7/7 (IEC plug type E and F).

Compressor includes one 2 m long piece of 6 mm OD tubing for connection to a Spraybase® power supply controller with pressure regulation.

A-0027-0001-01

2.5 bar clean air compressor (110V)

WHAT’S INCLUDED:
7 bar oil free lab air compressor (110 VAC) suitable for countries using IEC plug type B (NEMA 5-15).

Compressor includes one 2 m long piece of 6 mm OD tubing for connection to a Spraybase® power supply controller with pressure regulation.
Technology

Installation

Spraybase® kits are shipped for majority-part assembled. The tubing and cables will need to be plugged into the system. Guidelines and instructions are supplied with the kit and there are a number of demonstration videos on the Spraybase® website. However, if you require assistance during this installation period we can carry out on-site installation by a certified Spraybase® engineer. Installation can also include on-site training if so required by the individual for an additional fee.

Training

The Spraybase® team can provide you with guidance on using your new Spraybase® system in order to optimize return on your investment. Training is provided by experienced Spraybase® scientists and you can choose from a half day or a full day, depending on your requirements.

Maintenance

Spraybase® offers advice and maintenance in the instruction manual for all equipment to ensure your system continues to run smoothly and efficiently. The Spraybase® Team offer continuous care to ensure quality performance. Extended warranty packages are also available.
Support

Our Spraybase® team is committed to supporting your research ideas on an on-going basis. Spraybase® offers assistance through concept product development, to proof of principle studies and sample production. Support is offered at all stages of the process and is adapted to meet individual needs.

Customisation

We understand every researcher’s needs are different so we offer customisation of our instruments to ensure our end user has everything they require to enable their research. Should you have a specific request you need to enable your work please contact us at https://www.spraybase.com/contactus/ to set up a call with our Business Development team.
Technology Development

Spraybase® is committed to advancing electrospraying and electrospinning in the world of technology development. We are also eager to assist and develop your technological requirements. Our dedicated team of engineers and scientists are on hand to assist you with the technological needs to drive your research forward.

Do you have an interesting concept that require the electrospraying or electrospinning technology but do not have the capability or expertise to follow through? Speak with us today to discuss how The Spraybase® Team can help.

Proof of Concept

We have worked with many companies and universities in relation to proof of concept work. An example of previous work packages includes:

- Investigating the morphology of specific polymers
- Encapsulation of APIs
- Cell encapsulation
- Thin layer deposition onto a particular substrate
- Electrospun mats for wound healing application
- Generation of tubular structures for a specific application.

If you think this technology is related to your research or you have a proprietary material of interest you would like to create fibers or particles with, get in contact with the Spraybase® Team today.
Spraybase® Customers

Since the first Spraybase® instrument was shipped out in early 2013 our network of users has grown phenomenally and we now have over 100’s of instruments located around the world on every continent!

Our Customers are publishing papers in high impact journals and presenting their data generated from the Spraybase® instrument at conferences worldwide.

Some of the areas that our network of users is working in includes:

• Tissue engineering
• Drug Delivery
• Cell & Food encapsulation
• Thin layer deposition
• Wound healing
• Electronics
• Fuel and Energy Storage
• AND MORE..........................
Recent Publications:


- **Threading through Macrocycles Enhances the Performance of Carbon Nanotubes as Polymer Fillers.** Alejandro Lopez-Moreno, Belen Nieto-Ortega, Maria Moffa, Alberto de Juan, M. Mar Bernal, Juan P. Fernandez-Blazquez, Juan J. Vilatela, Dario Pisignano, and Emilio M. Perez, http://pubs.acs.org/doi/pdf/10.1021/acs.nano.6b04028


- **Analysis of contact area between water and irregular fibrous surface for prediction of wettability.** Yue Yuan, Seong-O Choi and Jooyoun Kim. http://pubs.rsc.org/en/content/articlepdf/2016/RA/C6RA15389E


- **Analytical Parametric Model Used to Study the Influence of Electrostatic Force on Surface Coverage During Electrospinning of Polymer Fibers.** Joshua D. Beisel, Jerry Kyeremateng, Lance Purkett, Jessica M. Andriolo and Jack L. Skinner. http://scitation.aip.org/content/avs/journal/jvstb/32/6/10.1116/1.4900608


- **A novel methodology for Bio-Electrospraying Mesenchymal Stem Cells that maintains differentiation, immunomodulatory and pro-reparative functions** Zita Mccrea, Yonsuang Arnanthigo, Sally-Ann Cryan, Shirley O’dea

- **Coaxial hybrid perovskite fibers: synthesis and encapsulation in situ via Electrospinning** John P. Murphy, Jessica M. Andriolo, Nathan J. Sutton, Molly C. Brockway, and Jack L. Skinner

- **Electrospinning PCL scaffolds manufacture for three-dimensional breast cancer cell culture** Marc Rabionet, Marc Yeste, Teresa Puig, and Joaquim Ciurana

And More...check out https://www.spraybase.com/spraybase-publications/
Testimonials

“We acquired the Spraybase® earlier this year (2015) and are impressed with it on many levels including quality, versatility and ease of use. We are exploring utility in multiple applications and appreciate the help and knowledge of the Spraybase® team.”

Prof. Jeffery Karp, Associate Professor at Brigham and Women’s Hospital, Harvard Medical School

“We have had a number of projects using this system over the past two years and I can honestly say that it is the best investment I have made for my laboratory and research team.”

Conor T. Buckley, Trinity College Dublin

“Spraybase® equipment helped to improve my process of electrospinning. The equipment is easy to assemble, well-finished, and looks great. Also it is easy to work with and safe. The Spraybase® team helped me in every need I have had and I really recommend this product and this company to other potential clients.”

Priscila Borges Franco, PhD student, School of Textile and Design, Heriot Watt University, UK

“We recently purchased the Spraybase® Electrospinning 20kV Starter Kit as well as a rotating drum with addition of a second syringe pump module along with co-axial emitters. This combination enabled us to blend two biomaterials such as polymers and provided us so much freedom to do many researches in the field of biomaterials and tissue engineering. Service provided by the Spraybase® team was excellent and we are very pleased. I highly recommend Spraybase® products to active researchers.”

Dr. Farshid Sefat, Assistant Professor in Tissue Engineering, University of Bradford, UK

“We purchased a rolling drum solution from Spraybase for spinning aligned fibers. The scientists at Spraybase worked with us to optimize our system and now it’s safe, easy to use, and has accelerated our research. I will definitely recommend Spraybase to anybody who wishes to purchase a system.”

Adam Karcz, M.S., Product Development Engineer, NEI Corporation, U.S.

“Our Spraybase® unit has enabled us to realize our most precious ideas in particle design. With the results of Spraybase unit, we are landing new collaborations with laboratories abroad and local companies. Of utmost importance, the Spraybase team is always friendly and willing to adapt our system to meet our research goals. They advise us expertly.”

Dr. Agustín Rascón Chu, Centro de Investigación en Alimentación y Desarrollo, Mexico
Spraybase® Ambassadors

Contacting a Spraybase® Ambassador

We currently have representatives in LAT-AM, East Coast USA, Mid-West USA, South Africa, UK and Central Europe, get in touch via the website if you wish to view our systems onsite at one of these locations.

Becoming a Spraybase® Ambassador

We are currently recruiting for West Coast USA and Australia, please get in touch if you wish become a representative for our company showcasing your Spraybase® set up. Incentive offered for each demo/referral.

Details of the Programme are as follows;

• Visits to each Ambassador are restricted to 2/year.
• For each visitor to your group/lab, the Spraybase® Ambassador will receive $250 online store credit.
• If a system is purchases based on their recommendation, the Ambassador will receive a new Spraybase® Expansion pack of their choice (Electrospinning/Electrospraying).
• As a thank you for signing up, we will send you an emitter of your choice worth $120.
• Ambassador contact details will not be published, they must be requested from the Spraybase team and only shared when necessary.

Spraybase® AMBASSADORS
Contact Information

For more information on Spraybase® products or service, or if you wish to obtain a quotation please contact us.

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