

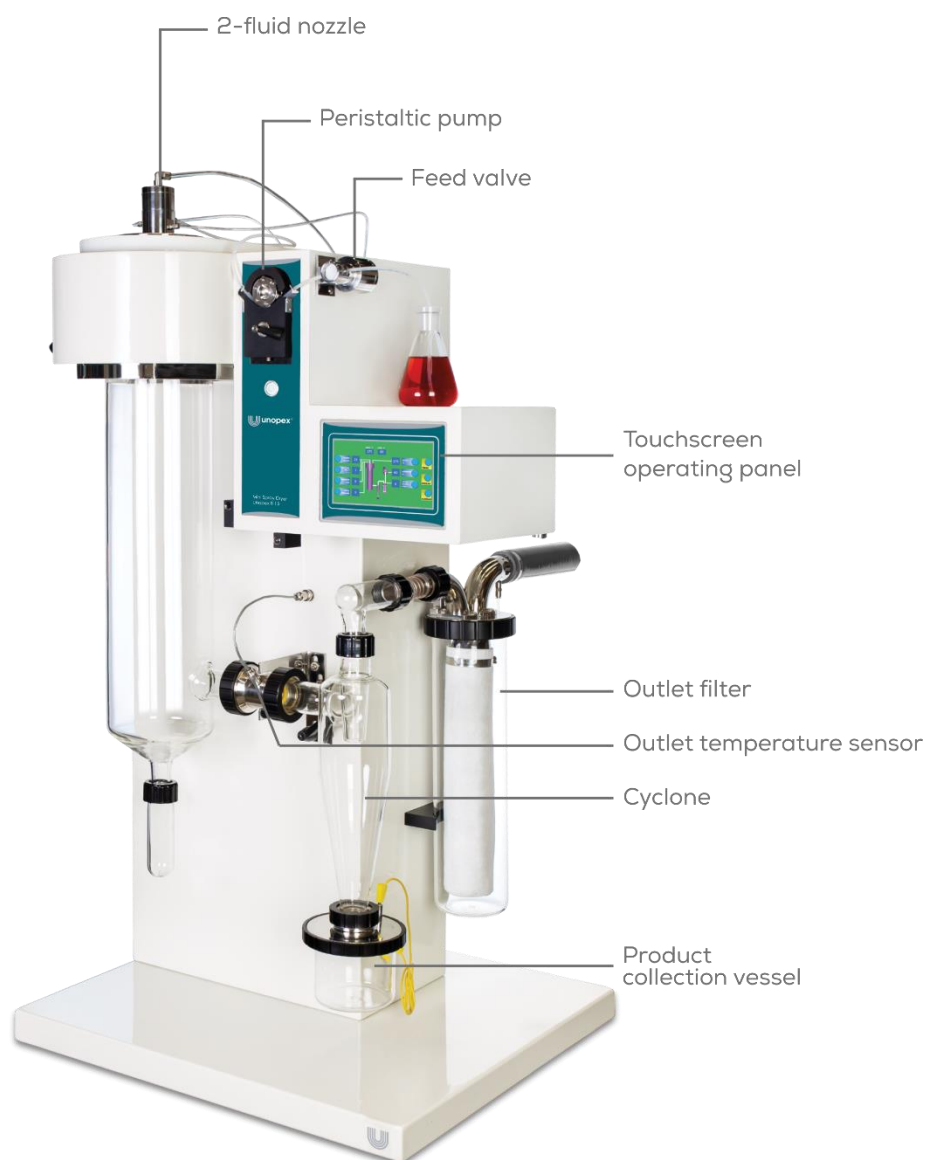


Unopex B 15 Mini Spray Dryer
Technical Data Sheet

Unopex B 15 Mini Spray Dryer is a laboratory equipment for quick and gentle drying of products from water or organic solvent based feeds.

Unopex offers 2 different set-ups of Laboratory Spray Dryers:

- **Mini Spray Dryer B 15 Essential**
Open mode spray drying of aqueous feeds. or
open mode spray drying of aqueous feeds. in combination with
complementary unit B 45 Dehumidifier under constant humidity conditions
- **Mini Spray Dryer B 15 Excellent**
Open mode spray drying of aqueous feeds or
closed cycle spray drying of feeds containing organic solvents
under nitrogen atmosphere in combination with
complementary units B 45 Dehumidifier and B 60 Inert Cycle.



Standard Instrument

| Code | Instrument |
|--------|---------------------------------|
| 877150 | B 15 Mini Spray Dryer Essential |
| 877155 | B 15 Mini Spray Dryer Excellent |

Instrument is delivered ready to use.

Scope of Supply

| Code | Component | B 15 Essential | B 15 Excellent |
|-------|--|----------------|----------------|
| 40500 | 2-fluid nozzle (0.7 mm) complete with automatic nozzle de-blocking | ✓ | ✓ |
| 52100 | Touchscreen operating panel | ✓ | ✓ |
| 42092 | Glass assembly complete | ✓ | ✓ |
| 44200 | Inlet filter, complete with filter element | ✓ | ✓ |
| 41100 | Peristaltic pump | ✓ | ✓ |
| 47110 | Peristaltic pump tubing, silicone (1 m) | ✓ | ✓ |
| 48030 | Cleaning brush for nozzle | ✓ | ✓ |
| 44100 | Outlet filter, complete with filter bag | | ✓ |
| 45200 | Feed valve | | ✓ |
| 54150 | Safety curtains, complete set | | ✓ |
| 55120 | Closed cycle operation module | | ✓ |
| 49110 | Operation Manual, English | ✓ | ✓ |
| 49210 | Quick Operation Guide, English | ✓ | ✓ |

Optional Complementary Units

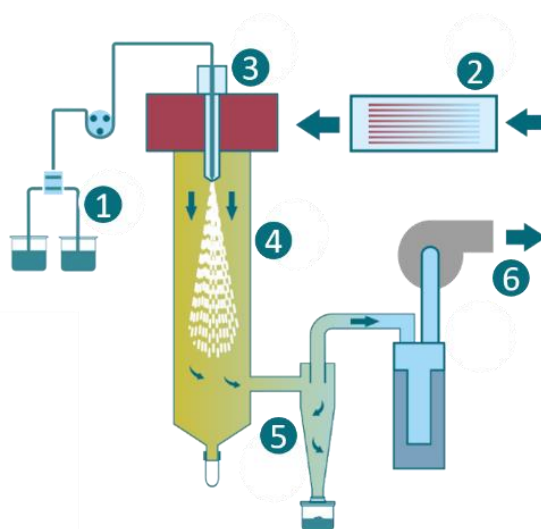
| Code | Unit |
|--------|------------------------------------|
| 877450 | B 45 Dehumidifier |
| 877600 | B 60 Inert Cycle |
| 877900 | B 92 Spray Chilling-Solidification |

Optional Accessories

| Code | Accessories |
|--------|--|
| 42022 | High performance cyclone |
| 42095 | Amber glass assembly complete (for light sensitive applications) |
| 44500 | HEPA filter inlet, complete |
| 44550 | HEPA filter outlet, complete |
| 47130 | Peristaltic pump tubing, pharmed (1 m) |
| 108320 | Trolley |
| 108312 | Oil Free Air Compressor |
| 117410 | Spray cylinder insulation |
| 120201 | IQ/OQ documentation |

Working principle

Unopex B 15 Mini Spray Dryer operates in co-current flow configuration where the drying gas flows in the same direction with the sprayed sample product.



1. Solution or suspension is injected into the drying chamber through a nozzle.
2. Drying gas is injected into the drying chamber.
3. The nozzle atomizes the solution into small droplets.
4. As the droplets of solution fall through the chamber, moisture evaporates from the droplets and they become particles.
5. The drying gas carries the particles to the cyclone where the particles are separated from the gas. Powder is collected.
6. The drying gas is filtered and exhausted.

Technical Data

| | |
|------------------------|--|
| Model | Unopex B 15 Mini Spray Dryer |
| Evaporating capacity | 1500 mL/h H ₂ O, higher for organic solvents |
| Max. inlet temperature | 220 °C |
| Ambient conditions | for indoor use only altitude up to 2000 meters above sea level temperature: 5–40 °C relative humidity up to 31 °C max. 80% and decreasing linearly to 50% up to 40 °C |
| Feed pump | peristaltic, variable speed |
| Configuration | co-current |
| Spray gas | compressed air or nitrogen |
| Atomization | 2-fluid nozzle with automatic nozzle de-blocking feature tip diameter 0.7 mm standard, optional sizes available |
| Blower | variable speed |
| Heating | 3 kW, PID controlled |
| Operating panel | touchscreen |
| Computer connection | data transfer with usb flash drive |
| Certification | CE |

Material of Construction for Product Contact Parts

| | |
|----------------|--------------------------------------|
| Feed tubing | silicone / tygon / pharmed |
| 2-fluid nozzle | stainless steel (AISI 316L/AISI 316) |
| Hot air duct | stainless steel (AISI 304/AISI 316) |
| Glass parts | heat resistant borosilicate glass |

Unopex B 45 Dehumidifier

can be used in open mode in combination with Unopex B 15 Mini Spray Dryer to condition drying air for spray drying under constant and reproducible humidity conditions or to cool inlet air in spray chilling operation.

| | |
|----------------------------|-------------|
| Cooling capacity | max. 1200 W |
| Minimum outlet temperature | 0 °C |



Unopex B 60 Inert Cycle

enables safe operation of B 15 Mini Spray Dryer with 100% organic solvents under inert conditions,

use in closed cycle in combination with B 15 Mini Spray Dryer and B 45 Dehumidifier enables to work with water/organic solvent mixtures safely.

| | |
|----------------------------|-------------|
| Cooling capacity | max. 1500 W |
| Minimum outlet temperature | -25 °C |



Unopex B 92 Spray Chilling

is used in combination with B 15 Mini Spray Dryer to make powders directly from molten feed samples by solidification.

| | |
|---------------------|------------|
| Batch capacity | 0,5 liter |
| Heating capacity | 800 W |
| Temperature control | digital |
| Melting temperature | max. 80 °C |
| Heating fluid | water |



 Izmir / Turkey
 +90 232 479 80 17
 unopex@unopex.com
 www.unopex.com



All rights reserved. 410101, technical data or images are subject to change without notice.

 unopex® is a division of  BAKON