

# LIPEX® Flow Thermobarrel Extruder packages

## OVERVIEW

LIPEX® Flow Thermobarrel Extruders are the industry-leading bench-top extruders for R&D and cGMP manufacturing of liposomal formulations in both academia and industry.

The innovative and patent-pending design maximizes the effective filtration area, resulting in lower extrusion pressures and high-flow processes. This translates to increased throughput, a wider formulation application range, faster processing times, and minimized process risks

- 1 HIGH THROUGHPUT**  
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- 2 WIDE OPERATING RANGE**  
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- 3 FAST PROCESSING TIME**  
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- 4 MINIMIZES PROCESS RISK**  
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- 5 6X INCREASE IN EFA\***  
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- 6 3X INCREASE IN MAOP\*\***  
.....
- 7 UP TO A 50 % DECREASE IN REQUIRED EXTRUSION PRESSURE COMPARED TO PREVIOUS LIPEX® MODELS** (individual results will be formulation and process dependent)  
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\*EFA = Effective Filtration Area    \*\*MAOP = Maximum Allowable Operating Pressure

The units are designed to produce a homogenous population of large unilamellar vesicles from a non-homogenous population of multi-lamellar vesicles. The unilamellar vesicles are formed by utilizing a constant pressure force of between 100 and 2400 psi to force the vesicles through filters of a predefined pore size. These units have a maximum operating pressure and temperature of 2450 psi and 80 °C, respectively. The side walls of the thermobarrel and filter support are jacketed to provide efficient temperature control of the extruder for optimal size reduction results.

## PACKAGE CONTENTS

- (1x) LIPEX® Flow Thermobarrel Extruder
- (1x) Package of polyester drain discs (100/pack)
- (1x) Package of polycarbonate filters with 100 nm pore size (100/pack)
- (1x) Spare O-ring set
- (1x) High pressure nitrogen line
- (1x) Turnover package USB
  - Operating manual
  - Declaration of conformity
  - Certificate of inspection & testing

## TECHNICAL SPECIFICATIONS

LIPEX® Flow Model	10 mL	100 mL	1000 mL
<b>MAOP*</b>			
• psig	2450	2450	2450
• bar	170	170	170
<b>MAOT (°C)**</b>	80	80	80
<b>Min. Extrusion volume</b>	1 mL	20 mL	100 mL
<b>Max. Extrusion volume</b>	10 mL	100 mL	1000 mL
<b>Weight (kg)</b>	3	7	25
<b>Material</b>	316 L Stainless steel		
• Body	EPDM		
• O-Ring			
<b>Surface finish</b>	Mechanically finished		
			

\*MAOP = Maximum Allowable Operating Pressure    \*\*MAOT = Maximum Allowable Operating Temperature

## REQUIRED ANCILLARY EQUIPMENT/SUPPLIES

The following is a list of commonly used ancillary equipment and materials required for efficient operation of the extruder.

- polyester drain disc (included)
- polycarbonate filter (included)
- heated re-circulator
- high pressure gas cylinder (nitrogen)
- gas regulator with a minimum delivery pressure of 2500 psi

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