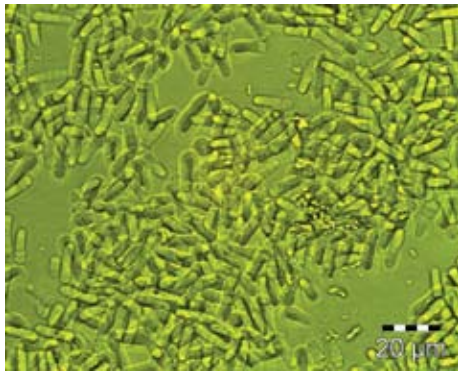


Bringing scalable high shear nanotechnology processing to samples as small as 1 ml

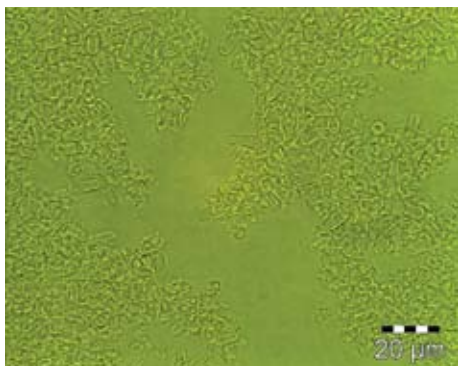
Nanoemulsions • Nanodispersions • Nanoencapsulation • Deagglomeration • Liposomes • Cell Disruption

## Exclusive Benefits

- Results are scalable to lab and production volumes using Microfluidizer technology
- Payback is measured in days, rather than years, when processing high value samples
- Near total sample recovery



*S. pombe - before*



*S. pombe - after*



Model shown is subject to change depending on options selected

## LV1 Microfluidizer High Shear Fluid Processor

The LV1 benchtop was developed as a result of customer demand to bring Microfluidizer quality nanotechnology processing to the milliliter scale with applications in the pharmaceutical, biotechnology, chemical, nutraceutical/food, cosmetic and energy industries:

- Academic and commercial sectors
- Drug discovery, Adme Tox, basic research and development
- Proteomics and genomics applications

Microfluidizer processors offer exclusive benefits due to the fixed-geometry interaction chamber and constant pressure pumping system. The unique technology enables customers to achieve smaller sample sizes than other methods with more uniform distribution and scaleup guaranteed.

With the LV1, researchers with limited resources and high value samples are able to enhance their wide variety of applications and materials with benefits only a Microfluidizer processor can provide:

- Stable nanoemulsions
- Highest protein recovery (typically >99% for E. coli after one pass)
- Challenging cell disruption (e.g. yeast, insect cells)
- Improved bioavailability
- Targeted delivery
- Nanoencapsulation (e.g. polymers, liposomes)
- Deagglomeration

## LV1 Advantages

- Small sample size requirements (1-6 ml)
- Near total sample recovery
- Easy clean up
- No disassembly required
- Quiet operation

## Advantages of All Microfluidizer Processors

### Product Quality

- 50% smaller particle size
- Narrowest particle size distribution
- Efficient cell disruption
- Less protein damage
- More stable emulsions

### Process Enhancements

- Scaleup guaranteed
- Improved protein yield
- Low or no heating with effective cooling
- Shorter and fewer process cycles
- Media and chemical-free processing
- Clean-in-Place and Steam-in-Place systems available in most cases

*Microfluidics reserves the right to change specifications without notice.*



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## Adding Value

For companies working with high value samples, it is imperative to minimize the amount of product required for machine operation while maximizing recovery. In addition to standard materials typically processed by our Microfluidizer processors, the LV1 is also ideal for...

- Specialized cell lines for controlled disruption (e.g. mammalian and primary cell lines)
- Experimental API's to enhance solubility when only a limited quantity is available.

## Preliminary LV1 Specifications

|                                    |   |
|------------------------------------|---|
| Description                        | Low volume high shear fluid processor   |
| Shear Rate @ 2069 bar (30,000 psi) | $1.23 \times 10^7 \text{ sec}^{-1}$   |
| Minimum Sample Size                | 1 ml to 6 ml per stroke   |
| Maximum Sample Volume              | 6 ml per stroke   |
| Stroke Frequency                   | up to 2 per minute (user dependant)   |
| Product Temperature Limit          | 73°C (165°F)  |
| Power Requirements (CE Compliant)  | 110 VAC / 50 or 60 Hz / 10 amps<br>220 VAC / 50 or 60 Hz / 5 amps<br>single phase electric outlet |
| Dimensions W x D x H               | 51cm x 65cm x 60.2cm<br>(20" x 25.8" x 23.7")   |
| Weight                             | 109 kg (240 lbs)  |
| Cleaning                           | Flush to clean (no disassembly required)  |
| Sterilizing                        | Autoclavable (disassembly required)   |

## Standard Features

|                              |   |
|------------------------------|---|
| Interaction Chamber Material | Ceramic                                   |
| Enclosure                    | Stainless Steel                           |
| Drive Method                 | Electric/Hydraulic                        |
| Product Cooling              | Immersed coil in ice bath tray (optional) |
| Feed Reservoir               | 10 ml syringe type                        |
| Collector Reservoir          | 10 ml syringe type                        |
| Warranty                     | 1 Year (standard M-5)                     |

## Options

- Product cooling coil and tray
- Syringes 1 ml to 6 ml
- Product installation and training

Application development and scaleup support are available from Microfluidics' US based development team. Ask your local sales representative for more information.

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