# Lab Accessory Part List

Below are listed recommended accessories for various light scattering applications. You can purchase the kits and SEC columns directly from Wyatt Technology; other accessories you can buy from the listed distributors. Phone numbers for the vendors are listed on the last page.

**Third party products are listed for your information only, Wyatt Technology is not responsible for the performance of products that are not sold by Wyatt Technology.**

### Wyatt Technology Kits:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **WTC Part #** |
| Cell Cleaning Kit | Tweezers, lens tissue, dusting gas, wrist strap, spare o-rings | 900001-21 (ambient)  900001-22 (heated) |
| In-Line Filter Kit | In-line filter holder, fittings, filter membranes | 900002-1 (aqueous)  900002-2 (organic)  900002-3 (PTFE) |
| Microbatch Kit | Syringes, syringe filters (0.02 μm), fittings, PEEK tubing | 900003 |
| DNDC Injection system | Injection valve, 1 mL injection loop, syringes, PEEK tubing, fittings | WISL-01 (low pressure)  WISH-01 (high pressure) |
| RI Calibration Kit | NaCl concentration standard set | P-8400 |
| Orbit Recycling System | Integrated and automated recycling of solvents | WORB-01 |
| COMET | Sonicator Assembly for easy flow cell cleaning and maintenance | WIC (internal, for HELEOS, TREOS)  WCT-01 (external, for EOS, Tristar) |
| QELS | Online QELS (DLS) module | WIQ (internal, for HELEOS, TREOS)  WQ-04 (external, for EOS, Tristar) |
| MicroCUVETTE Assembly Kit | For microbatch work with a DAWN or miniDAWN (includes one microCUVETTE vial) | WMC-01 |
| MicroCUVETTE | Vial (spare for DAWN or miniDAWN) | 212114 |
| Nanofilter Kit | For use w/ microcuvette | WNF-01 |

### Wyatt Technology SEC Columns for Proteins:

|  |  |  |  |
| --- | --- | --- | --- |
| **For Soluble and Hydrophilic Proteins** | **For Membrane Proteins and other Hydrophobic Proteins** | **Pore Size** | **Protein MW Range [Da]** |
| WTC-010S5 | WTC-MP010S5 | 100 Å | 100 - 100,000 |
| WTC-015S5 | WTC-MP015S5 | 150 Å | 500 - 150,000 |
| WTC-030S5 | WTC-MP030S5 | 300 Å | 5,000 - 1,250,000 |
| WTC-050S5 | WTC-MP050S5 | 500 Å | 15,000 - 5,000,000 |
| WTC-100S5 | WTC-MP100S5 | 1000 Å | 50,000 - 7,500,000 |
| WTC-200S5 | WTC-200MPS5 | 2000 Å | 250,000 - >10,000,000 |

### These columns are 7.8x300 mm, packed with 5 µm coated silica beads. Narrow columns and columns with different particles size and pore size are also available.

### Guard columns are available for each of the columns above.

### Syringe filters:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Filter Material** | **Diameter (mm)** | **Pore Size (μm)** | **Manufacturer Part #** |
| Whatman Anotop 10 | inorganic | 10 | 0.02 | 6809-1002 |
| Whatman Anotop 10 | inorganic | 10 | 0.10 | 6809-1012 |
| Whatman Anotop 10 | inorganic | 10 | 0.20 | 6809-1022 |
| Whatman Anotop 25 | inorganic | 25 | 0.02 | 6809-2002 |
| Whatman Anotop 25 | inorganic | 25 | 0.20 | 6809-2022 |
| Pall Acrodisc LC 13 | PVDF | 10 | 0.20 | 4455T |
| Pall Acrodisc LC 13 | PVDF | 10 | 0.45 | 4457T |
| Pall Acrodisc LC 25 | PVDF | 25 | 0.45 | 4408T |

### Accessories for Microbatch work with a syringe:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | Upchurch Part # |
| Luer to 10/32 Threading adapter | Female-to-Female; PEEK | P-659 |
| Finger Tight fittings, regular | for 1/16” tubing,10-32 threads | F-120 |
| Finger Tight fittings, X long | for 1/16” tubing,10-32 threads | F-130X |
| PEEK tubing | 0.010” x 1/16” x 5’ | 1531 |
| PEEK tubing | 0.020” x 1/16” x 5’ | 1532 |
| PEEK tubing | 0.030” x 1/16” x 5’ | 1533 |
| Tubing Cutter | For 1/16” and 1/8” polymer tubing | A-327 |

### Syringes:

10 ml, all polymer (good for organic and aqueous solvents)

Other capacities are available.

Available from VWR: VWR Part Number 53548-006

### Syringe Pump:

Razel makes a basic, low cost (~$600) syringe pump. Model #R-99.

### In-Line High Pressure Filter for 1/16” Lines:

|  |  |  |  |
| --- | --- | --- | --- |
| **Description** | **Vendor** | **Vendor Part #** | **Quantity Needed** |
| High Pressure Filter Holder,  Stainless Steel, 25 mm diam. | Fisher | XX4502500 | Each - Need 1 |
| \*Stainless Steel fitting, 1/8” to  1/16” MNPT | Swagelok  (local dealer) | SS-100-1-2 | Each - Need 2 |
| Durapore\*\* membrane filter, Pore size = 0.10 μm, Diameter = 25 mm | Fisher | VVLP02500 | 100/pkg |
| MF \*\*\*membrane filter, Pore size =  0.025 μm, Diameter = 25 mm | Fisher | VSWP 025 00 | 100/pkg |
| Fluoropore\*\*\*\*membrane filter, Pore size = 0.20 μm, Diameter = 25mm | Fisher | FGLP 025 00 | 100/pkg |
| Disc, Titanium, 2 μm 0.730 x 0.062 | Upchurch | A-342-02 | 10/pkg |

\* These fittings and ferrules are required to use the Filter Holder.

\*\* Hydrophilic Durapore - Aqueous and selected organic solvents (Toluene, THF, etc)

\*\*\* MF Mixed Cellulose - Aqueous and selected organic solvents (Toluene, THF, etc)

\*\*\*\*PTFE Fluoropore – Harsh organic solvents

### HPLC Solvent Reservoir Filter:

May be used as filtration and solvent reservoir combined. Using a 47 mm diameter membrane filter and a vacuum pump, the solvent is filtered (0.1μm or 0.2μm pore size recommended) directly into this vessel which then serves as a solvent reservoir. This reduces the chance of introducing dust or other contaminants into the solvent. Made by Kontes. $700-$900. Available through VWR.

(47mm Whatman filters work great.)

|  |  |  |
| --- | --- | --- |
| **Capacity (L)** | **~ Height x Diameter (mm)** | **Cat #** |
| 1.0 | 432 x 130 | KT953943-1002 |
| 2.0 | 512 x 150 | KT953943-2002 |
| 5.0 | 592 x 295 | KT953943-5002 |

### Mobile Phase Filters:

|  |  |  |  |
| --- | --- | --- | --- |
| **Description** | **Vendor** | **Filter Element** | **Manufacturer Part #** |
| Last Drop Filter, 2.5 μm | Valco | PTFE | JR-9000-0520 |
| Last Drop Filter, 2.5 μm | Valco | Stainless Steel | JR-9000-0530 |
| Solvent Filter Inlet 2 μm, 1/8 od. tubing | Upchurch | Stainless Steel | A-223 |

**Lens Cleaning Tissue:** Manufactured by Kodak. Available at any camera shop.

**Flow Cell Floss:** Oral-B SuperFloss dental Floss, Oral B Laboratories,

800-566-7256. Available at retail stores such as Kmart.

**Soft Tip Tweezer:** It is easiest to order this accessory from Wyatt Technology (Item Number P9011).

**Injection Valves:** Valco high pressure 6 port injection valve,

### Supelco Cat # 22919, for GPC work

**Post-column filter:** Upchurch #A-315 filter, with added membrane filter of choice; see in-line high pressure filter (above) for membrane ideas.

### Cleaning Solutions for MicroCuvettes and DynaPro Cuvettes

|  |  |  |
| --- | --- | --- |
| **Product** | **Vendor** | **Vendor Catalog #** |
| Liquinox | Alconox | 1232-1 (1 quart) |
| Tergazyme | Alconox | 1304-1 1x4 lb box |
| Hellmanex | Hellma | # 320.001 for 1.3 kg bottle or #320.002 for 0.7 kg bottle |

### Hand Held Microscope for DynaPro Fiber Tip Inspection:

Wyatt Part #P8404-FIS: Fiber Instrument Sales Part # F1HHMS200

“FIS Hand Held Microscope with Universal 2.5mm Adapter” (~$170)

Note: A 10x jeweler’s loupe is usually adequate for fiber tip inspection; “10x Eye Loupe” is available from Widget Supply, part number SFE3-CL. ($2)

**Nitrogen hand gun assembly**

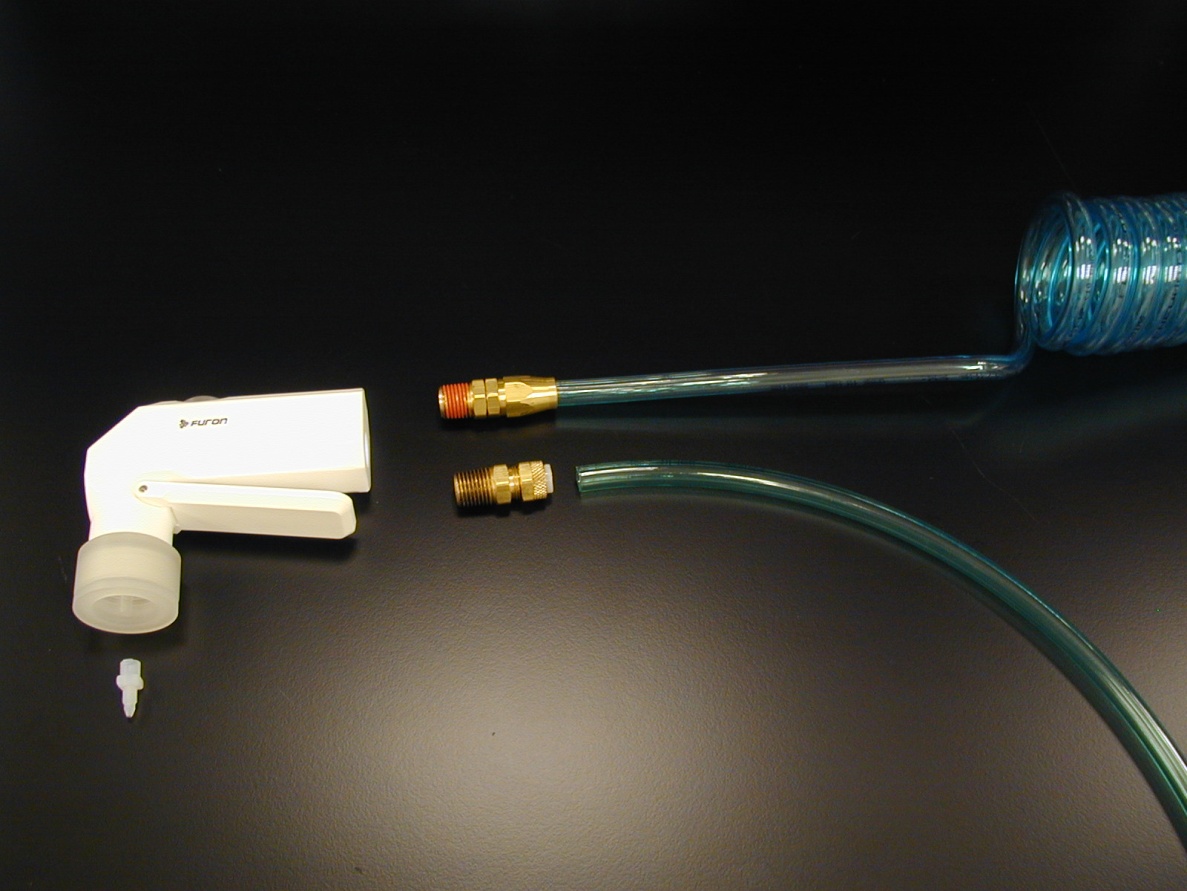


Figure 1. The nitrogen hand gun with a choice of two urethane lines.

### Parts:

**Nitrogen Gas Filter (Hand Unit) for Cleaning Cuvettes:     
Hand Unit available at Ryan Herco, Part # 0484-601  
0.45 µm filters also from Ryan Herco, Part # 0159-1100174  
Luer Fitting (optional) from Upchurch, Part # P-642**

**Assembly:**

* Plumb the unit to 4.8 purity dry nitrogen (Praxair Designation) using standard NPT ¼” fittings with a 0-100psi pressure regulator with gauge. Any local industrial supply house should have the necessary parts. We set our pressure to 50psi. Be sure to inspect the filter housing routinely, checking for cracks and to keep the luer fitting clean (if used).
* The nitrogen hand unit can be fitted with either of two urethane lines, each with a ¼” NPT fitting. The coiled line comes with the fitting pre-installed while the straight, bulk line needs to have the fitting put on by the user.
* The plastic ferrule in the fitting for the bulk line makes a good seal. Wrap two turns of Teflon tape around the threads that screw into the hand unit. The coiled line has a compound on the threads already but we still recommend wrapping one turn of Teflon tape over the compound.
* The Luer fitting gives a nice, compact jet of gas for cleaning. Be sure to keep this tip and the area around the nozzle clean.
* The coiled line retracts but the coil tends to be cumbersome. The bulk line can be cut in any length desired and can be kept out of the way under a lab bench when not being used.

**Vendors for Molecular Weight Standards**

**Wyatt Technology**

Polystyrene, 30 kDa, 1 g: Item No. P8402-03001

Polystyrene, 200 kDa, 1 g: Item No. P8402-20001

**Pressure Chemical Co.** (PEG, PMMA, etc.)

3419 Smallman St.

Pittsburgh, PA 15201

(800) 722-5247 or www.presschem.com

**American Polymer Stds** (large variety of standards for organic & aqueous applications)

8680 Tyler Blvd

Mentor, OH 44060

(440) 255-2211 or www.ampolymer.com

**Polymer Standards Service – USA** (organic & aqueous standards)

PSS-USA

10111 Colesville Road, Suite 123

Silver Spring, Maryland 20901

(888) 477-7872 or (301) 681-9624 or www.polymer.de

**NIST**

Visit the National Institute of Standards and Technology home page:

www.nist.gov

**Scientific Polymer Products, Inc.** (PEG, PMMA, PS, etc.)

6265 Dean Parkway

Ontario, NY 14519

(585) 265-0413 or www.scientificpolymer.com

**Pierce (available from Fisher Scientific)**

**Pierce\* Bovine Serum Albumin Standard**

Pierce Number 23209 (2mg/mL solution in NaCl) available at www1.fishersci.com

**Sigma-ALDRICH**

(800) 325-3010 or www.sigma-aldrich.com

**Albumin, Bovine Serum (BSA)**

Sigma Catalog Number A-1900 (BSA in powder form)

**Not Molar Mass Standards – But Inexpensive and Useful for Aqueous Work**

Dextran, Mol. Wt. ~ 12,000, Sigma Cat # 00270

Dextran, Mol. Mt. ~ 50,000, Sigma Cat # 00891

Contact Info

* Fisher Scientific: (800) 766-7000 www.fishersci.com
* Millipore: (800) 645-5476 or www.millipore.com
* RAZEL Scientific Instruments: (203) 324-9914 or www.razelscientific.com
* Supelco: (800) 247-6628 or www.sigma-aldrich.com
* Swagelok: [www.swagelok.com](http://www.swagelok.com) to search for local dealers
* Upchurch: (800) 426-0191 or www.upchurch.com
* VWR: (800) 932-5000 or www.vwr.com
* **Ryan Herco: (800) 848-1141** or [www.rhfs.com](http://www.rhfs.com)
* Fiber Instrument Sales: (800)500-0347 or www.fiscatalog.com
* Shoko America, Inc.: (858)459-0409
* Widget Supply www.widgetsupply.com
* Hellma USA www.hellmausa.com
* Alconox [www.alconox.com](http://www.alconox.com)