

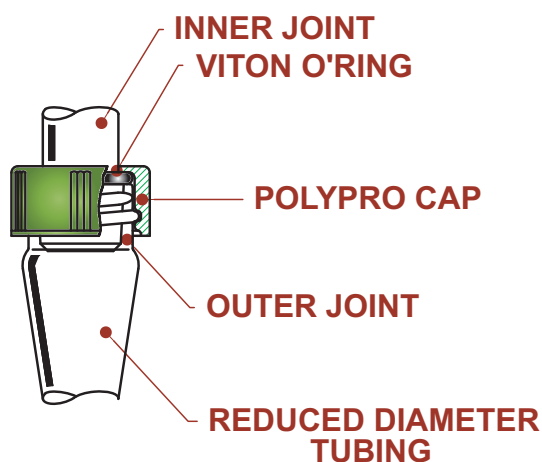


CHEMGLASS MINUM-WARE®

The development of Minum-Ware® microscale glassware has made possible the reduction in solvent and reagent costs required for basic organic chemistry experiments. Along with the reduction of these costs, microscale glassware offers the following important advantages:

- Due to the tremendous reduction of starting materials, and a parallel reduction of organic solvents required, chemical disposal becomes much easier and less costly.
- With the reduction in size of glassware and the reduced amounts of chemicals used, the manipulation times (i.e. the evaporation of solvents) are substantially reduced. Therefore, more laboratory exercises may be done during a given laboratory period.

- Existing hood space may be used by a much larger number of students, resulting in dramatic improvements in laboratory air quality at no additional cost.



14/10 MINUM-WARE®

CHEMGLASS 14/10 MINUM-WARE® COMPONENTS

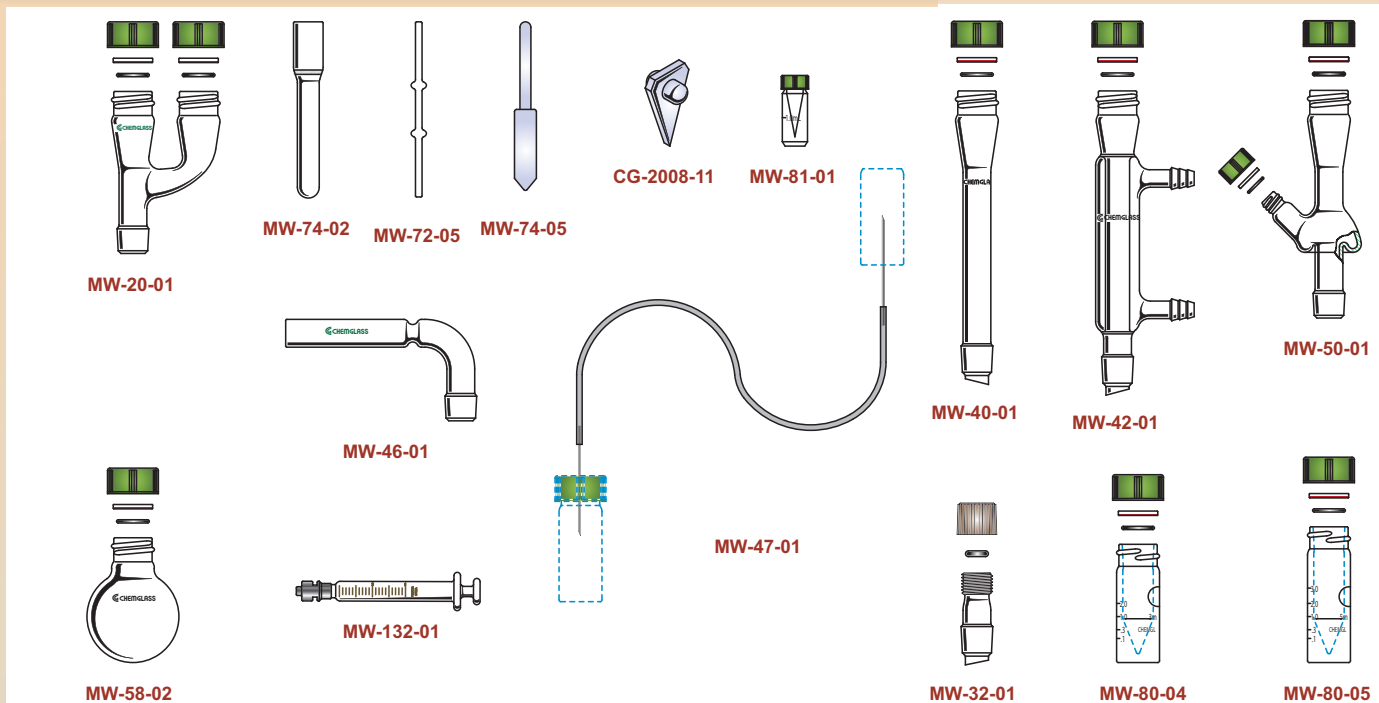
Features:

- Outer joints which are externally threaded allowing the inner member to be connected using an open-top screw cap and Viton o-ring, forming a positive grease-free seal. This external 20-400 GPI thread also allows Chemglass 14/10 Minum-Ware® components to be used interchangeably with threaded components currently available from other manufacturers.
- The unique design of the externally threaded outer member allows the user exposure to the more commonly used standard taper joint, while offering the convenience of connection without clamps, springs or wire.
- All 14/10 Minum-Ware® components are designed to be fully interchangeable with standard 14/20 jointed glassware. Smaller outside diameter tubing is used in the manufacture of the 14/10 components to minimize wetted surface area while the shorter length of the ground portion of the inner and outer joints reduces freezing of the joints.
- Our expanded line of 14/10 Minum-Ware® products now offers the user the ability to perform research as well as educational microscale experiments.

Minum-Ware® glassware and accessories have been designed to be used with the following texts:

Introduction to Organic Laboratory Techniques - A Microscale Approach - Pavia, Lampman, Kriz, Engel - Saunders College Publishing, Chicago, IL

Microscale Organic Laboratory - Mayo, Pike, Butcher - John S. Wiley & Sons, NY, NY



MW-11 MINUM-WARE® KIT, DELUXE

This kit contains the microscale components to do all of the experiments described in: *Organic Laboratory Techniques*, Donald L. Pavia, Gary M. Lampman, George S. Kriz, Randy G. Engel, Sanders College Publishing-Chicago IL. and *Microscale Organic Laboratory*, Dana W. Mayo, Ronald M. Pike, Samuel S. Butcher, John S. Wiley & Sons, NY., NY. The MW-11-01 kit is packaged in a polypropylene box having movable dividers permitting additional components to be added at a later date. All joints are 14/10 with the outer members externally threaded.

Part Number	Description
MW-11-01	Deluxe Minum-Ware® Kit

Replacement Components:

Part Number	Description	Kit Qty
MW-20-01	Claisen Adapter	1
MW-32-01	Thermometer Adapter	1
MW-40-01	Air Condenser	1
MW-42-01	Jacketed Condenser	1
MW-46-01	Drying Tube	1
MW-47-01	Gas Collection Tube	1
MW-50-01	Hickman Still Head	1
MW-58-02	10mL Round Bottom Flask	1
MW-72-05	G.C. Collection Tubes	2
MW-74-02	2mL Craig Tube Outer	1
MW-74-05	Teflon Plunger for Craig Tube	1
MW-80-04	3.0mL Conical Reaction Vials	2
MW-80-05	5.0mL Conical Reaction Vials	2
MW-81-01	0.1mL Conical Vials	2
MW-132-01	1mL Glass Syringe	1
CG-2008-11	Large Teflon Spinvalve	1

Due To Our Unique Packaging, Chemglass Can Customize Minum-Ware® Kits To Meet Your Specific Microscale Glassware Requirements. We Can Also Offer Large Quantity Pricing. If Any Of Our Listed Kits Do Not Contain The Specific Components Required To Perform Your Chosen Set Of Experiments, Please Contact Our Technical Service Department, 01525 382277 or info@gpelimited.co.uk, And We Will Be Pleased To Quote On Your Specific Requirements.

Deluxe Kit



MW-11

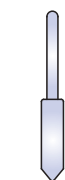
Large Quantity Discounts
are Available.
Please call for details.



MW-20-01



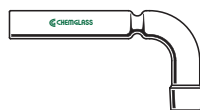
MW-74-02



MW-74-05



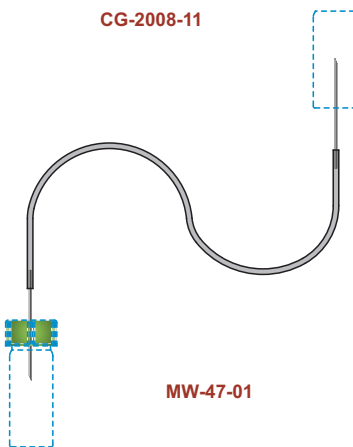
CG-2008-11



MW-46-01



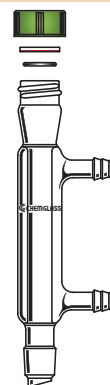
MW-132-01



MW-47-01



MW-32-01



MW-42-01



MW-50-01



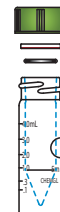
MW-58-01



MW-32-01



MW-80-04



MW-80-05

Intermediate Kit



MW-13

Large Quantity Discounts
are Available.
Please call for details.

MW-13 MINUM-WARE® KIT, INTERMEDIATE

Similar to the MW-11-01 Deluxe MINUM-WARE® kit with the exception of the components required to perform the GC experiments described in: *Organic Laboratory Techniques, Donald L. Pavia, Gary M. Lampman, George S. Kriz, Randy G. Engel, Sanders College Publishing-Chicago IL. and Microscale Organic Laboratory, Dana W. Mayo, Ronald M. Pike, Samuel S. Butcher, John S. Wiley & Sons, NY., NY.* Kit also contains one rather than two each of the 3.0mL and 5.0mL conical reaction vials. The MW-13-01 kit is packaged in a polypropylene box having movable dividers permitting additional components to be added at a later date. All joints are 14/10 with the outer members externally threaded.

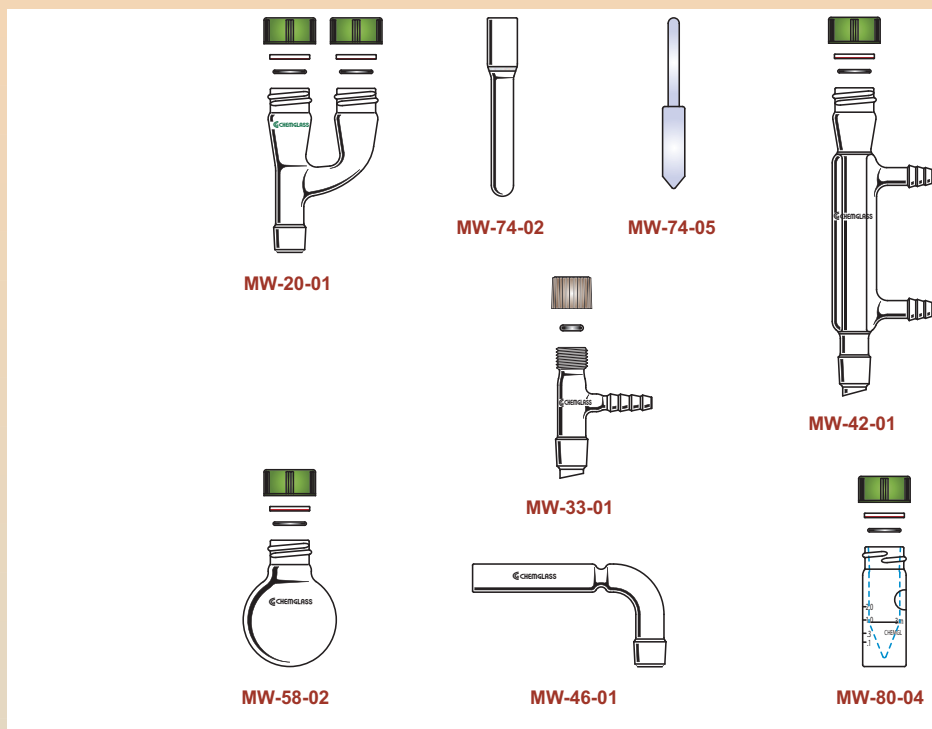
Part

Number	Description
MW-13-01	Intermediate Minum-Ware® Kit

Replacement Components:

Part Number	Description	Kit Qty
MW-20-01	Claisen Adapter	1
MW-32-01	Thermometer Adapter	1
MW-40-01	Air Condenser	1
MW-42-01	Jacketed Condenser	1
MW-46-01	Drying Tube	1
MW-47-01	Gas Collection Tube	1
MW-50-01	Hickman Still Head	1
MW-58-02	10mL Round Bottom Flask	1
MW-74-02	2mL Craig Tube Outer	1
MW-74-05	Teflon Plunger for Craig Tube	1
MW-80-04	3.0mL Conical Reaction Vials	1
MW-80-05	5.0mL Conical Reaction Vials	1
MW-132-01	1mL Glass Syringe	1
CG-2008-11	Large Teflon Spinvane	1

Due To Our Unique Packaging, Chemglass Can Customize Minum-Ware® Kits To Meet Your Specific Microscale Glassware Requirements. We Can Also Offer Large Quantity Pricing. If Any Of Our Listed Kits Do Not Contain The Specific Components Required To Perform Your Chosen Set Of Experiments, Please Contact Our Technical Service Department, 01525 382277 or info@gpelimited.co.uk, And We Will Be Pleased To Quote On Your Specific Requirements.



MW-16 MINUM-WARE® KIT, BASIC

This kit contains the microscale components to do the majority of experiments described in: *Organic Laboratory Techniques, Donald L. Pavia, Gary M. Lampman, George S. Kriz, Randy G. Engel, Sanders College Publishing-Chicago IL. and Microscale Organic Laboratory, Dana W. Mayo, Ronald M. Pike, Samuel S. Butcher, John S. Wiley & Sons, NY., NY.* The MW-16-01 kit is packaged in a polypropylene box having movable dividers permitting additional components to be added at a later date. All joints are 14/10 with the outer members externally threaded.

Part Number	Description
MW-16-01	Basic Minum-Ware® Kit

Replacement Components:

Part Number	Description	Kit Qty
MW-20-01	Claisen Adapter	1
MW-33-01	Inlet/Vacuum Adapter	1
MW-42-01	Jacketed Condenser	1
MW-46-01	Drying Tube	1
MW-50-01	Hickman Still Head	1
MW-58-02	10ml Round Bottom Flask	1
MW-74-02	2ml Craig Tube Outer	1
MW-74-05	Teflon Plunger for Craig Tube	1
MW-80-04	3 ml Conical Reaction Vial	1
MW-80-05	5 ml Conical Reaction Vial	1
CG-2008-11	Large Teflon Spinvane	1

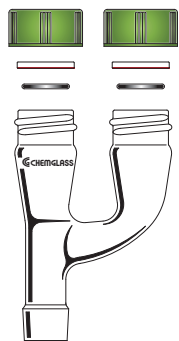
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Basic Kit



MW-16

Large Quantity Discounts are Available. Please call for details.

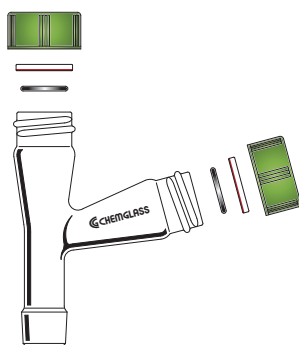


MW-20

MW-20 ADAPTER, CLAISEN, MINUM-WARE®

Useful for addition of reagents to moisture sensitive reactions. Lower inner and top outer threaded joints all are 14/10 size. Supplied complete with two open-top screw caps (MW-102-33), Teflon faced septa (MW-104-33) and Viton o-rings (MW-100-08).

Part
Number
MW-20-01



MW-21

MW-21 ADAPTER, CONNECTING, MINUM-WARE®

Adapter has 14/10 threaded outer joints on both the top and side arms and 14/10 lower inner joint. Supplied complete with two open-top screw caps (MW-102-33) and Viton o-rings (MW-100-08).

Part
Number
MW-21-01

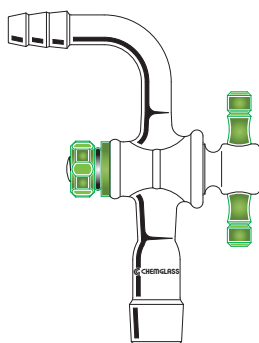


MW-22

MW-22 ADAPTER, CONNECTING, MINUM-WARE®

Used as a component in vacuum distillations. Lower inner and top outer threaded joint, sidearm has a drip tip, all are 14/10. Supplied complete with open-top screw cap (MW-102-33), Teflon faced septa (MW-104-33) and Viton o-ring (MW-100-08).

Part
Number
MW-22-01



MW-30

MW-30 ADAPTER, FLOW CONTROL, MINUM-WARE®

Used to regulate the input of liquids or gases into reactions. Stopcock is Teflon with a bore of 1mm. Inner joint is a 14/10.

Part
Number
MW-30-01



MW-32

MW-32 ADAPTER, INLET, MINUM-WARE®

Used with thermometers and bleed tubes with outside diameters from 5-7mm. A vacuum tight seal is made using the supplied Viton o-ring and nylon compression cap while allowing the vertical adjustment of the thermometer or bleed tube. Supplied complete with compression cap (CG-352-01) and Viton o-ring (CG-305-107). Inner drip joint is a 14/10.

Part
Number
MW-32-01

MW-33 ADAPTER, INLET, VACUUM, MINUM-WARE®

Adapter has a 14/10 inner joint and #7 Chem-Thread to permit insertion of 5-7mm OD thermometers and bleed tubes. A side hose connection is used for vacuum pull off. Supplied complete with compression cap (CG-352-01) and Viton o-ring (CG-305-107).

Part
Number
MW-33-01

MW-36 ADAPTER, VACUUM, DISTILLATION, 105°, MINUM-WARE®

Used in microscale vacuum distillations. Adapter has a top threaded outer joint and a lower inner joint with sealed in drip tip, all are 14/10. Side hose connection is 9mm OD at the middle serration. Supplied complete with open-top screw cap (MW-102-33) and Viton o-ring (MW-100-08).

Part
Number
MW-36-01

MW-38 ADAPTER, VACUUM, DISTILLATION, MINUM-WARE®

Similar to MW-36 but vertical. With a top threaded outer joint, lower inner joint having a sealed in drip tip all are 14/10. Side hose connection is 9mm OD at the middle serration. Supplied complete with open-top screw cap (MW-102-33) and Viton o-ring (MW-100-08).

Part
Number
MW-38-01

MW-40 CONDENSER, AIR REFLUX, MINUM-WARE®

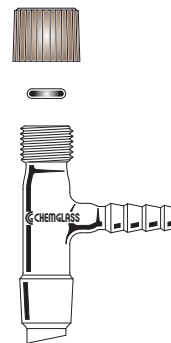
Condenser uses the surrounding air to dissipate the heat of the reaction during refluxing. Overall height is ~145mm with the effective length being 100mm. Condenser has a top threaded outer joint and lower inner drip joint, all are 14/10. Supplied complete with open-top screw cap (MW-102-33) and Viton o-ring (MW-100-08). **PLEASE NOTE: FOR DISTILLATION COLUMN SEE MW-45-01.**

Part
Number
MW-40-01

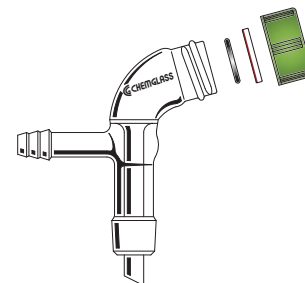
MW-42 CONDENSER, JACKETED REFLUX, MINUM-WARE®

Liebig-type water jacketed condenser with a jacket length of 80mm. With top threaded outer and lower inner drip joint, both 14/10. Supplied complete with open-top screw cap (MW-102-33) and Viton o-ring (MW-100-08).

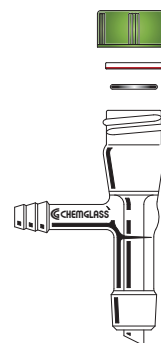
Part
Number
MW-42-01



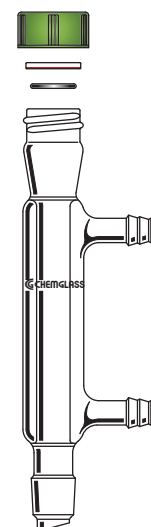
MW-33



MW-36



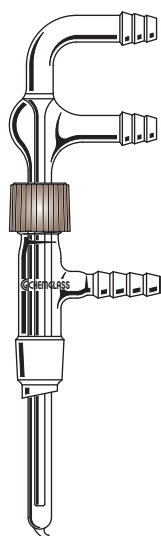
MW-38



MW-42



MW-40



MW-43

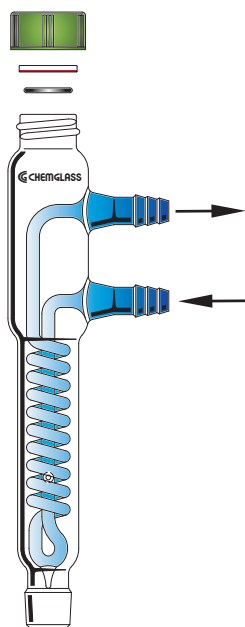
MW-43 CONDENSER, COLD FINGER, ADJUSTABLE MINUM-WARE®

Cold finger style condenser is made to fit into MW-50 Hickman still head while the lower drip tip directs distillate into the collection collar. Complete item consists of the condenser and a MW-33 inlet adapter having a 14/10 lower inner joint. Hose connections are 9mm OD at the middle serration.

Part Number	Description
MW-43-01	Cold Finger Condenser, Complete

Replacement Components:

Part Number	Description
MW-43-02	Cold Finger Only
MW-33-01	Vacuum Adapter Only

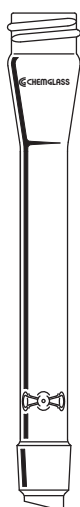


MW-44

MW-44 CONDENSER, COIL REFLUX, MINUM-WARE®

Tightly wound coil maximizes surface area available for cooling. Useful with low boiling temperature solvents in vacuum applications. Lower end of the coil is drawn to a point to act as a drip tip. Coil section is ~70mm long with the overall length of the condenser being 150mm. Top threaded outer and lower inner joints are 14/10. Supplied complete with open-top screw cap (MW-102-33) and Viton o-ring (MW-100-08).

Part Number	Description
MW-44-01	



MW-45

MW-45 DISTILLING COLUMN, HEMPLE, MINUM-WARE®

Hemple style column with indents just above the lower inner joint to support packing material. Top threaded outer joint and lower inner drip tip joint are 14/10. Supplied complete with open-top screw cap (MW-102-33) and Viton o-ring (MW-100-08).

Part Number	Description
MW-45-01	

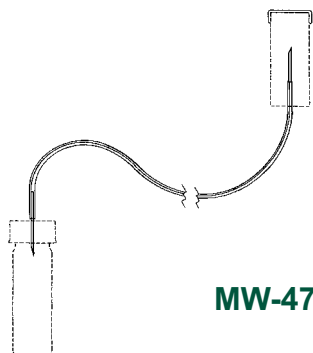


MW-46

MW-46 DRYING TUBE, MINUM-WARE®

Used to protect moisture sensitive reactions from the atmosphere while permitting the system to remain unsealed. Inner joint is a 14/10.

Part Number	Description
MW-46-01	



MW-47

MW-47 GAS COLLECTION TUBE, MINUM-WARE®

Tube consists of 1/16" OD x 1/32" ID x 15" length of Teflon tubing with a 19-gauge needle inserted into both ends. The needles have a 22° bevel for septum penetration. Needle permits insertion directly into the MW-80 3.0mL or 5.0mL conical reaction vial while the opposite end is inserted into a gas collection reservoir.

Part Number	Description
MW-47-01	

MW-50 HICKMAN STILL HEAD, MINUM-WARE®

Unique design of the Hickman still makes it both the collection vessel and condenser for simple fractional distillations. The threaded side port permits easy removal of distillate via a syringe or Pasteur pipette. Side port has a 8-425 thread. Still has an upper threaded outer joint and lower inner joint, both 14/10. Supplied complete with open-top screw cap (MW-102-33) and Viton o-ring (MW-100-08) for 14/10 joint and Teflon faced septa (MW-104-11) and open-top screw cap (MW-102-11) for 8-425 sidearm.

Part
Number
MW-50-01

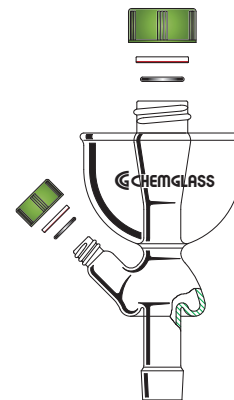


MW-50

MW-51 HICKMAN STILL HEAD, MODIFIED**, MINUM-WARE®

Modified Hickman still head having a cooling reservoir around the air condenser portion of the still head. Filling of this reservoir with ice greatly increases the recovery of distillate during vertical distillations. The threaded side port permits easy removal of distillate via a syringe or Pasteur pipette. Side port has a 8-425 thread. Still has an upper threaded outer joint and lower inner joint, both 14/10. Supplied complete with open-top screw cap (MW-102-33) and Viton o-ring (MW-100-08) for 14/10 joint and Teflon faced septa (MW-104-11) and open-top screw cap (MW-102-11) for 8-425 sidearm.

Part
Number
MW-51-01



MW-51

** Modifications Suggested By Susana Jones,
University of California San Diego, Department Of Chemistry, LaJolla, CA

MW-52 DISTILLING COLUMN, VIGREUX, MINUM-WARE®

Vigreux style column with indentations for improved vapor-liquid contact. Column height is the length of the indented section. Upper threaded outer joint and lower inner joint are 14/10. Supplied complete with open-top screw cap (MW-102-33) and Viton o-ring (MW-100-08).

Part Number	Column Height (mm)	Overall Length (mm)
MW-52-01	75	125
MW-52-02	100	145



MW-52

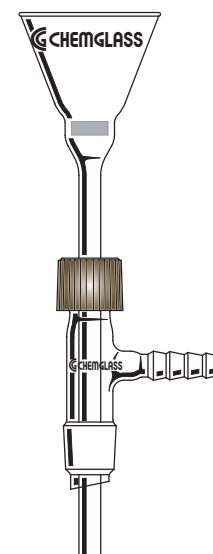
MW-53 FUNNEL, MICRO HIRSCH, MINUM-WARE®

Microscale vertically adjustable Hirsch funnel for use with Minum-Ware® flasks or conical reaction vials having 14/10 joints. Funnel has a 1/4" OD X 4" Long stem. Fritted disc is 10mm diameter and is available in coarse or medium porosity. Complete item consists of a funnel and MW-33 adapter.

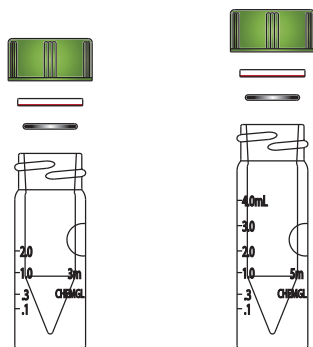
Part Number	Description
MW-53-01	Micro Hirsch Funnel, Medium Porosity, Complete
MW-53-02	Micro Hirsch Funnel, Coarse Porosity, Complete

Replacement Components:

MW-53-04	Funnel Only, Medium Porosity
MW-53-05	Funnel Only, Coarse Porosity
MW-33-01	Inlet Adapter Only



MW-53



MW-80



MW-54



MW-55



MW-56



MW-57

MW-80 CONICAL REACTION VIAL, MINUM-WARE®

Heavy wall vial has an internal conical bottom for optimum sample retrieval and flat base which provides added mechanical strength and bench stability. Top of vial is a 14/10 threaded outer joint. Vials are graduated at the intervals listed. Supplied complete with open-top screw cap (MW-102-33), Teflon faced septa (MW-104-33) and Viton o-ring (MW-100-08).

Part Number	Capacity (mL)	Graduated at (mL)
MW-80-04	3.0	0.1, 0.3, 1.0, 2.0
MW-80-05	5.0	0.1, 0.3, 1.0, 3.0, 4.0

MW-54 CONICAL REACTION VIAL, THIN-WALL, MINUM-WARE®

Vials are thin walled allowing more efficient heat transfer. Conical bottoms are designed for optimum sample retrieval. Top of vial is a 14/10 threaded outer joint. Supplied complete with open-top screw cap (MW-102-33), Teflon faced septa (MW-104-33) and Viton o-ring (MW-100-08).

Part Number	Capacity (mL)
MW-54-01	3.0
MW-54-02	5.0
MW-54-03	10.0

MW-55 FLASK, PEAR SHAPE, MINUM-WARE®

Pear-shaped single neck flask with a 14/10 threaded outer joint. Supplied complete with an open-top screw cap (MW-102-33) and Viton o-ring (MW-100-08).

Part Number	Capacity (mL)
MW-55-01	10
MW-55-02	25

MW-56 FLASK, PEAR SHAPE, 2-NECK, MINUM-WARE®

Micro pear-shaped flask with sidearm for addition or removal of product via syringe or Pasteur pipette. Sidearm has a 13-425 thread and is supplied complete with an open-top screw cap (MW-102-22) and Teflon faced septa (MW-104-12). With a 14/10 upper threaded outer joint that is supplied complete with an open-top screw cap (MW-102-33) and Viton o-ring (MW-100-08) for 14/10 outer joint.

Part Number	Capacity (mL)
MW-56-01	10
MW-56-02	25

MW-57 FLASK, RECOVERY, MINUM-WARE®

Kjeldahl shaped single neck flask with a 14/10 threaded outer joint. Sloped sides permit easy removal of product with a spatula. Supplied complete with an open-top screw cap (MW-102-33) and Viton o-ring (MW-100-08).

Part Number	Capacity (mL)
MW-57-01	10
MW-57-02	25

MW-58 FLASK, ROUND BOTTOM, MINUM-WARE®

Micro round bottom flask with a 14/10 threaded outer joint. Supplied complete with an open-top screw cap (MW-102-33) and Viton o-ring (MW-100-08).

Part Number	Capacity (mL)
MW-58-01	5
MW-58-02	10
MW-58-03	25

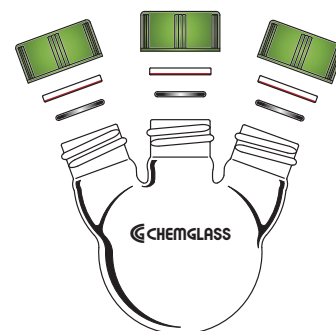


MW-58

MW-59 FLASK, ROUND BOTTOM, 3-NECK, MINUM-WARE®

Micro 3-neck round bottom flask with all 14/10 threaded outer joints. Supplied complete with open-top screw caps (MW-102-33) and Viton o-rings (MW-100-08).

Part Number	Capacity (mL)
MW-59-01	25
MW-59-02	50



MW-59

MW-121 NEOPRENE FILTER ADAPTER, MINUM-WARE®

Microscale neoprene filter adapters are designed to fit between the filtering funnel and flask. For use with MW-122 filtering flask. Can be used individually or nesting with adjacent sizes. Eliminates the boring of rubber stoppers and the difficulties of inserting and removing glass stems in stoppers. Neoprene withstands autoclaving. Available as a set or individually.

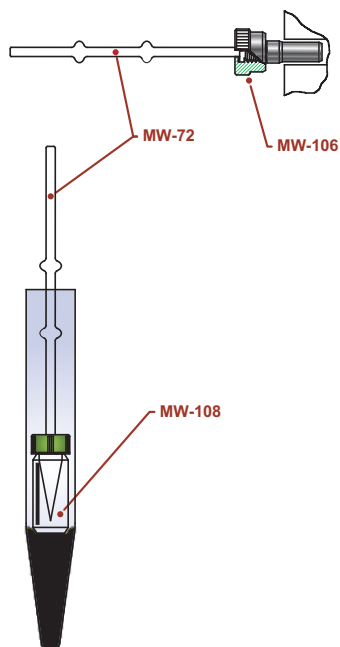
Specifications:

Adapter Size	Height (mm)	Top x Bottom ID (mm)	Top x Bottom OD (mm)	Wall Thickness (mm)
1	21	17 x 7	21 x 11	2.0
2	21	22 x 11	27 x 16	2.5

Part Number	Adapter Size
MW-121-01	1
MW-121-02	2



MW-121



MW-72 / MW-81 / MW-106 G.C. COLLECTION SYSTEM MINUM-WARE®

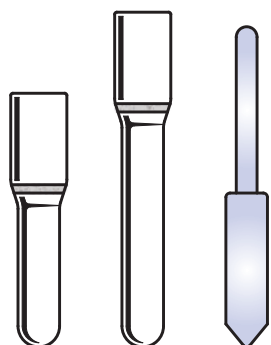
Modified gas chromatograph collection system consists of three (3) components: MW-72 collection tube, MW-81 0.1mL conical vial and the MW-106 Cajon™ adapter. Vials are supplied complete with Viton o-ring (MW-100-01), Teflon faced septa (MW-104-11) and open-top screw cap (MW-102-11). Cajon® adapter has a 6-32 female NPT thread and is supplied with a Viton o-ring. MW-72 G.C. collection tubes are sold 12/Pkg.

Operation:

MW-106-01 modified Cajon® adapter is screwed onto the exit port of the G.C. The MW-72 collection tube is inserted into the adapter and tightened. After the sample is collected, the tube is removed from the adapter and inserted into the MW-81 vial. The cap of the vial is tightened to apply pressure against the o-ring, effectively sealing the tube in the neck of the vial. The assembly can now be centrifuged, driving the sample entirely into the vial.

Part

Number	Description
MW-72-05	G.C. Collection Tube, 12/Pkg
MW-81-01	G.C. Collection Vial
MW-106-01	G.C. Collection Cajon® Adapter



MW-74

MW-74 TUBE, RECRYSTALLIZATION TUBE, MINUM-WARE®

Used for microscale recrystallizing of small quantities of reaction product. Consists of a glass outer tube with a non-uniform grind to purposely allow leakage, and a Teflon inner plug. The Teflon inner plug fits both the 1.0mL and 2.0mL capacity outer tubes. Capacity listed is the volume of the tube below the ground seat. Sold as complete sets consisting of the glass outer and Teflon inner tubes, or as separate components.

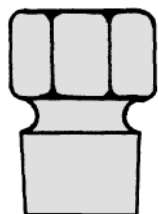
Complete Set:

Part Number	Capacity (mL)
MW-74-03	1.0
MW-74-04	2.0

Replacement Components:

Part

Number	Description
MW-74-01	1.0mL Outer Tube Only
MW-74-02	2.0mL Outer Tube Only
MW-74-05	Teflon Plunger Only



MW-60

MW-60 STOPPER, TEFLON, MINUM-WARE®

Solid Teflon stopper for use with all 14/10 microscale components.

Part

Number
MW-60-01

MW-73 SUBLIMATOR, MINUM-WARE®

Sublimator consisting of a MW-33 adapter and vertically adjustable condenser tube having a 7mm OD. For use with all 14/10 jointed flasks and reaction vials. Supplied complete with nylon compression cap (CG-352-01) and Viton o-ring (CG-305-107).

Part Number	Description
MW-73-01	Sublimator, Complete

Replacement Components:

Part Number	Description
MW-73-02	Condenser Tube Only
MW-33-01	Vacuum Adapter Only
CG-305-107	#107 Viton O-Ring, 12/Pkg

MW-75 SUBLIMER COLD FINGER**, MINUM-WARE®

The long cold finger is inserted thru a MW-20 claisen adapter and into a MW-54 thin wall reaction vial and then filled with ice water. A MW-32 thermometer adapter is then inserted into the other arm of the claisen adapter and connected to a vacuum source. The vial is heated with a Bunsen burner, while the ice is replaced every 1-2 minutes with a Pasteur pipette. With the Bunsen burner, it is possible to chase the sublimate off the side walls of the vial. Sublimation takes place rapidly-within 5 minutes. Cold finger has a 14/10 inner joint.

Part Number
MW-75-01

** Designed And Developed By Dr. Don Pavia And Ruth Schoonover, Western Washington University, Bellingham, WA

MW-100 REPLACEMENT O-RINGS, VITON

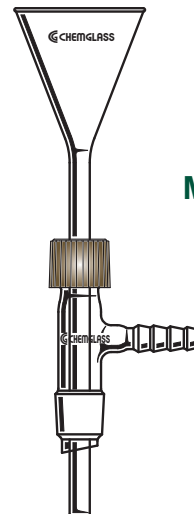
Used with open-top screw caps and threaded outer joints for making grease-free, vacuum tight seals on 14/10 Minum-Ware® glassware components. O-rings are color coded BROWN for easy identification. Supplied in package quantities listed.

Part Number	O-Ring Size	Pkg Qty
MW-100-01	#007	12
MW-100-02	#010	12
MW-100-03	#014	12
MW-100-08	#014	144

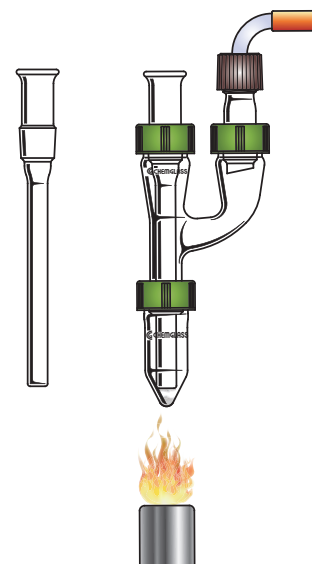
MW-131 SPATULA, MICRO

Nickel-stainless spatula with Teflon coated ends. Length is 184mm with one end tapered to 0.8mm OD. The opposite end is 4mm OD and rounded.

Part Number
MW-131-01



MW-73



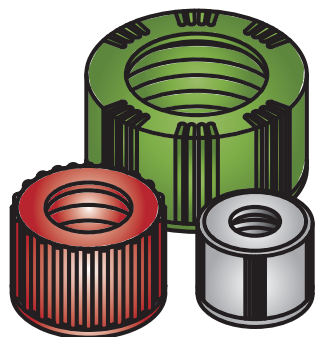
MW-75



MW-100



MW-131

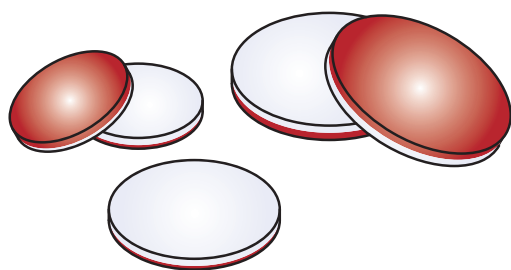


MW-102

MW-102 REPLACEMENT CAPS WITH OPENING, MINUM-WARE®

Used with Viton O-Rings and threaded outer joints for making grease-free, vacuum tight seals on 14/10 Minum-Ware® glassware components. The 8-425 size is used on the sidearm of Hickman still head and MW-81 G.C. collection vial. The 13-425 is used on the MW-56 two neck flask sidearm. **SOLD 144/PKG.**

Part Number	Thread Size	Pkg Qty
MW-102-11	8-425	144
MW-102-22	13-425	144
MW-102-33	20-400	144



MW-104

MW-104 REPLACEMENT SEPTA, MINUM-WARE®

Replacement septa for use with MW-102 open-top screw caps on Minum-Ware® glassware components. Septa are made of silicone rubber with one side having a RED TEFLON face, while the opposite side has an ultrathin covering of polypropylene to prevent needle coring when penetrating septa. Supplied in package quantities listed.

Part Number	Thread Size	Pkg Qty
MW-104-01	8-425	12
MW-104-11	8-425	144
MW-104-02	13-425	12
MW-104-12	13-425	144
MW-104-03	20-400	12
MW-104-33	20-400	144



MW-150

MW-150 REPLACEMENT BOX, POLYPROPYLENE, MINUM-WARE®

Compartmentalized replacement box with detachable lid for use in storing Minum-Ware® glassware components and accessories.

Part Number
MW-150-01

Replacement Components for the original 7/10 - 14/10 jointed glassware

Chemglass continues to offer the replacement components for the original 7/10 - 14/10 jointed glassware described in "Microscale Organic Laboratory" Mayo, Pike and Butcher, John. Wiley & Sons, NY, NY. These components are also available in kit form on a special order basis. Please contact us for details.

MW-64 CONDENSER, AIR REFLUX

Part Number	Joint Size
MW-64-01	7/10 to 7/10
MW-64-02	7/10 to 14/10

MW-66 CONDENSER, WATER-JACKETED REFLUX

Part Number	Joint Size
MW-66-01	7/10 to 7/10
MW-66-02	7/10 to 14/10

MW-68 CLAISEN HEAD ADAPTER

Supplied complete with open-top screw cap (MW-102-22) and Teflon faced silicone septa (MW-104-12).

Part Number	Joint Size
MW-68-01	14/10 to 7/10

MW-70 HICKMAN STILL HEAD

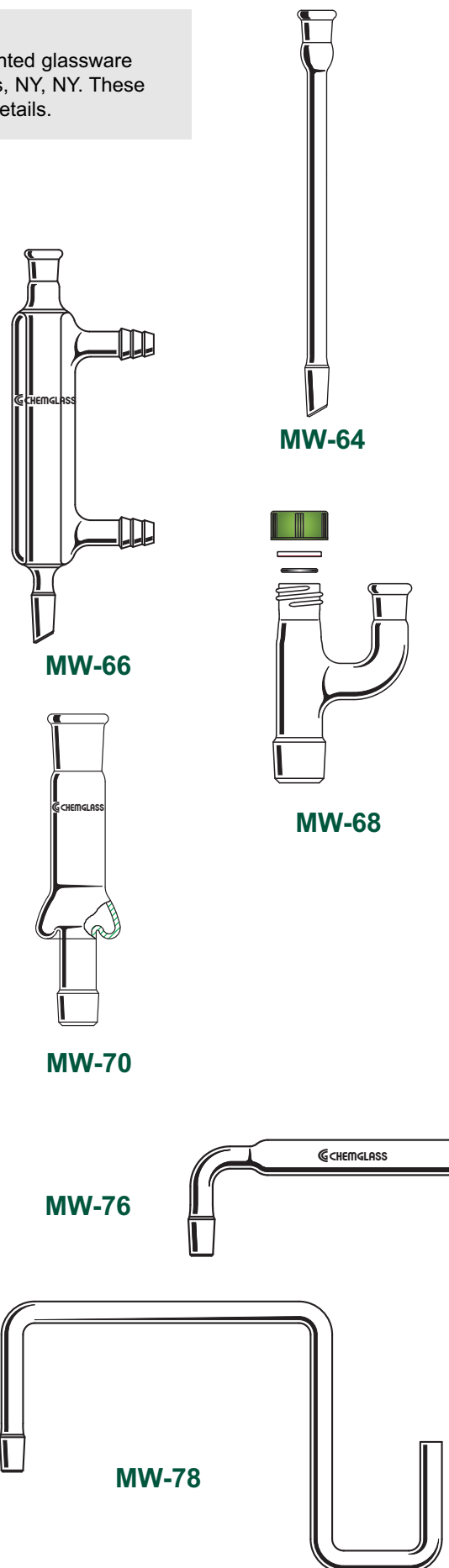
Part Number	Joint Size
MW-70-01	14/10 to 14/20

MW-76 DRYING TUBE

Part Number	Joint Size
MW-76-01	7/10

MW-78 GAS DELIVERY TUBE

Part Number	Joint Size
MW-78-01	7/10





MW-114

MW-114 ALUMINUM HEAT TRANSFER BLOCK, MINUM-WARE®

The Chemglass heat transfer block is designed to be used with Minum-Ware® microscale glassware components instead of the sand bath method of heating. The block is 3" x 3" x 3/4" thick and has holes to accommodate the MW-80 reaction vials. Four holes are also provided for use in heating the lower portion of the MW-74 Craig recrystallization tubes. They are placed close together to minimize spillage when doing transfers in the recrystallization process. The 13mm hole can also be used to heat a 13 x 100 test tube. A hole is provided for insertion of the MW-110 thermometer.

PLEASE NOTE: SANDBATH WAS 90MM OD WITH THE SAND DEPTH BEING 25MM. HOT PLATE STIRRER WAS A 4" SQUARE MIDGET, WITH THE HEAT SETTING AT MAXIMUM.

Features:

- Aluminum Construction Offers Excellent Heat Transfer While Not Interfering With Magnetic Stirring.
- Experiment Time Is Greatly Reduced Due To Extremely Rapid Heating Time To Temperature (See Graph).
- Prolongs Life Of Hot Plate Stirrers Due To Lower Settings Required To Reach Temperature.
- Rapid Equilibration (6-15 min) To Any Predetermined Temperature. The Hot Plate Surface And The Block Are Effectively At The Same Temperature At Equilibrium. There Are No "HOT SPOTS".
- The Block May Be Cooled To Room Temperature In Running Tap Water While The Hot Plate Surface Temperature Can Be Reduced With A Water Bath. The Student Can Therefore Have A System Back To Room Temperature In Less Than 10 Minutes.

Part
Number
MW-114-01



MW-112

MW-112 ALUMINUM HEAT TRANSFER COLLAR, MINUM-WARE®

For use in conjunction with MW-114 aluminum heat transfer block. Collar assists in the heating of the larger 3.0mL and 5.0mL MW-80 conical reaction vials. Effects are similar to pushing the vial deeper into a sand bath. The collar is 3/4" thick and 1-1/2" square with a 20mm hole, split to allow easy placement around vial.

Part
Number
MW-112-01

Development Done And Data Collected On Both The Heating Block And Collar By Dr. Siegfried N. Ludwig, Centralia College, Centralia, WA, August 1987.

CG-8276 DISH, CRYSTALLIZING, PYREX®

Tops are reinforced and fire polished to reduce chipping. Will withstand repeated sterilization. Packed in the quantities as shown.

Part Number	Approx. Dia. and Height (mm)	Approx. Capacity (mL)	Pkg. Qty.	Case Qty.
CG-8276-70	70 x 50	180	6	24
CG-8276-80	80 x 40	180	6	24
CG-8276-90	90 x 50	270	6	18
CG-8276-100	100 x 50	325	6	18
CG-8276-125	125 x 65	740	4	12
CG-8276-150	150 x 75	1200	4	8
CG-8276-170	170 x 90	1770	2	8
CG-8276-190	190 x 100	2500	2	6



CG-8276

MW-110-N THERMOMETER, NON-MERCURY, BULB IMMERSION, MINUM-WARE®

Bulb immersion, mineral spirit filled, thermometer with engraved stem. Stem OD is 5.5 to 6.0mm with the overall length as listed. Each thermometer is supplied with a #106 Viton o-ring for suspension of thermometer in open distillation systems.

Part Number	Range (°C)	Subdivisions (°C)	Overall Length (mm)
MW-110-N-01	-10 to 150	1	152
MW-110-N-02	-10 to 300	2	225



MW-110-N



CG-2003-50 STIR BAR, MAGNETIC, MICRO, PTFE, KIT

Clear plastic case contains an assortment of our most popular sizes of CG-2003 micro shaped stirring magnets. Case has movable plastic dividers providing room for additional stirring bars.

Part Number
CG-2003-50

Case Contains:

Qty	Part Number	Length x Diameter (mm)
6	CG-2003-12	5 x 2
6	CG-2003-14	7 x 2
6	CG-2003-16	10 x 3
3	CG-2003-10	2 x 2
3	CG-2003-13	6 x 3
3	CG-2003-17	13 x 3

PLEASE NOTE: STIR BAR KITS ARE AVAILABLE WITH AN ASSORTMENT OF OTHER STYLES AND SIZES. PLEASE CALL FOR PRICING.



CG-2003-50



CG-2008 STIR BAR, MAGNETIC, "V" SHAPED, PTFE

"V" shaped PTFE stirring magnet. Design permits rotation in small conical vessels such as MW-80 reaction vials and test tubes.

Part Number	Fits Tubing OD (mm)	Height x Diameter (mm)
CG-2008-10	9-10	11 x 8
CG-2008-11	11-12	16 x 10



CG-2008



MW-132



CG-3075

MW-132 SYRINGE, SAMPLE RETRIEVAL, MINUM-WARE®

An all borosilicate glass sample syringe with 1mL capacity. The stainless steel luer lock assures use of syringe with needle "blow-off". Needle sold separately see CG-3075.

Part
Number
MW-132-01

CG-3075 NEEDLE, SYRINGE, METAL LUER HUB

Needle for MW-132 syringe. All needles are made of #304 full hard stainless steel and have a 22° beveled point for septum penetration along with general use.

Part Number	Needle Gauge x Length (in)	OD x ID of Needle (in)	Pkg Qty
CG-3075-10	17 x 2.5	0.058 x 0.042	6
CG-3075-11	18 x 2.5	0.049 x 0.033	6
CG-3075-12	20 x 2.5	0.035 x 0.023	6
CG-3075-15	22 x 2.5	0.028 x 0.016	6



CG-8702

CG-8702 PIPETS, PASTEUR, BULK PACK, NON-STERILE, NON-PLUGGED, CORNING®

CORNING® disposable glass Pasteur Pipets are available in convenient Packages. One-time use eliminates the danger of cross-contamination of valuable specimens or laboratory reagents. These pipets feature a constriction one inch below the top to facilitate plugging. They are ideal for rapid non-volumetric transfer work in bacteriology, immunology, hematology and serology studies, as well as blood bank and clinical chemistry procedures.

Part Number	Size (in)	Pkg Qty
CG-8702-5X	5.75	200
CG-8702-9	9	200
CG-8702-NMR	Long Tip	100



MW-126

MW-126 PIPETTE PUMP, MINUM-WARE®

Provides for safe, convenient and trouble free pipetting. Rotation of the thumbwheel fills or dispenses the volume required from the pipette. The top plunger can be depressed for rapid emptying. A flexible, tapered chuck allows the pipette to fit smoothly and securely into the pump. **PLEASE NOTE: PART NUMBER MW-126-02 FITS BOTH SIZES OF THE CG-8702 PIPETTES.**

Part Number	Fits Pipette Capacities Up To (mL)
MW-126-01	0.2
MW-126-02	2.0
MW-126-03	10.0
MW-126-04	25.0

MW-128 MICROPIPETTE, ADJUSTABLE VOLUME, WHEATON

Swiss made micropipettes with separate push buttons for dispensing and tip ejections. Volumes are adjustable by rotation of the precision micrometer and reading the volume on the circular vernier. Narrow body provides easy access to vessels used in microscale experiments.

Part Number	Capacity (uL)	Subdivisions (uL)	Accuracy	Tip Color
MW-128-01	5-50	1.0	10uL ± 1.0% 50uL ± 0.6%	Yellow
MW-128-02	50-200	1.0	50uL ± 1.0% 200uL ± 0.2%	Yellow
MW-128-03	200-1000	10.0	200uL ± 0.3% 1000uL ± 0.3%	Blue

MW-128-T TIPS FOR MICROPIPETTE, WHEATON

Virgin polypropylene disposable tips for use with MW-128 micropipette. Packed 1,000 per bag.

Part Number	Color
MW-128-T-04	Yellow
MW-128-T-05	Blue

MW-136 TUBE, CENTRIFUGE, POLYPROPYLENE

Rimless polypropylene tubes with excellent chemical resistance. Tubes have a capacity of 15mL and are 17mm OD x 120mm OAL. Autoclavable at 121°C and are sold 12/Pkg.

Part Number
MW-136-01



MW-128

MW-128-T



MW-136