

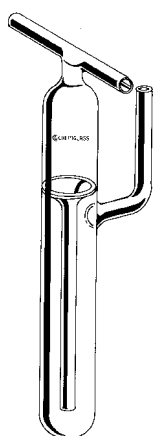
# BRUSHES, BUBBLERS



**CG-1145**



**CG-1146**



**AF-0510**

## **CG-1145 BRUSH, GLASSWARE CLEANING**

Soft sponge foam brush cleans glassware without absorbing water. Foam bristles never become soggy or limp. Will also not scratch or chip fragile glass items. Also will last up to 10 times longer than normal nylon brushes and up to 20 times longer than sponges. Sold as a set or individually.

**Code -01** is 16" long x 7/8" in diameter. Brush can fit through narrow opening and conform to any shape glassware such as erlenmeyer flasks.

**Code -02** is 9" long x 3" in diameter. Brush can fit into bottles or cylinders having a neck diameter of 2 fi".

**Code -03** is 18" long x 3" in diameter. Brush can fit into bottles or cylinders having a minimum neck diameter of 2 1/2".

<u>Part Number</u>	<u>Description</u>
<b>CG-1145-01</b>	<b>16" x 7/8" Cleaning Brush</b>
<b>CG-1145-02</b>	<b>9" x 3" Cleaning Brush</b>
<b>CG-1145-03</b>	<b>18" x 3" Cleaning Brush</b>

**CG-1145-04** Set of 1 each of Above

## **CG-1146 BRUSH, GLASSWARE CLEANING, CYLINDRICAL REACTOR**

Brush has a 3" wide x 4 1/2" rectangular non-abrasive scrubbing pad at the end of either a 9" or 33" handle for cleaning larger cylindrical reactors. Chemically resistant brush head will not scratch or mar delicate or coated surfaces.

<u>Part Number</u>	<u>Description</u>
<b>CG-1146-01</b>	<b>9" Long Cleaning Brush</b>
<b>CG-1146-02</b>	<b>33" Long Cleaning Brush</b>

## **AF-0510 BUBBLER, IN-LINE, AIRFREE®**

Used to monitor gas flow to reactions while providing a vent to the atmosphere. Bubbler has a "T" connection at the top to allow it to be mounted in-line. Reservoir head prevents oil from being sucked back into the system. Volume below the sidearm is approx. 40mL. Bubbler has 8mm O.D. top and side tubulations.

<u>Part Number</u>
<b>AF-0510-20</b>

## AF-0512 BUBBLER, PRESSURE RELEASE, AIRFREE®\*\*

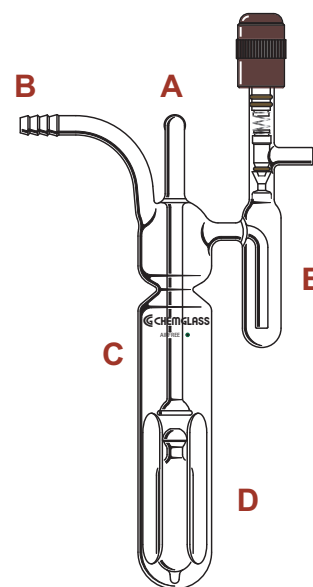
Unique design of bubbler allows for fine control of purge gas within an inert gas system such as a manifold. Purge gas enters bubbler through hose connection (A) and exits through connection (B). The large capacity of the main chamber (C) allows for rapid purging with check valve protection of the inert gas source (D). The constriction of the large chamber prevents oil from being drawn back into the system. The small chamber (E) is equipped with a pressure release valve which is adjustable from 2 to 49 lbs. PSI. (4 lbs PSI is recommended for most vacuum/inert systems). When charging the system to the correct pressure setting, the bubbler in the main chamber will cease to operate and permit any over-pressure to escape through the small chamber. Overall height is 300mm, overall width is 150mm. Hose connections have an O.D. of 11mm at the largest ring. **NOTE: Designed for use with mineral oil.**

Part Number	Description
AF-0512-01	Bubbler, Complete

### Replacement Components:

CG-999-02	Pressure Plug only
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**\*\*Designed and developed by: Mr. Barry Lafler, Brookhaven National Laboratories, Upton NY.**

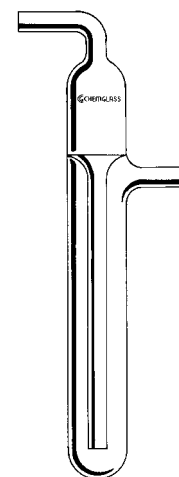


AF-0512

## AF-0513 BUBBLER, AIRFREE®

Used to monitor gas flow to reactions while providing a vent to the atmosphere. Reservoir head prevents oil from being sucked back into the system. Volume below the sidearm is approx. 40ml. Bubbler has an 8mm O.D. top and side tubulations.

Part Number	Description
AF-0513-20	



AF-0513

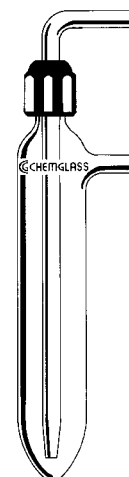
## AF-0513-A BUBBLER, AIRFREE®, ADJUSTABLE

Bubbler has an adjustable inner tube with a #9 Chem-Thread. Taper at bottom of reservoir allows for use of a minimal amount of oil. Complete bubbler consists of the lower reservoir, adjustable inner tube, compression nut and #110 Viton O-ring.

Part Number	Description
AF-0513-A-21	Inner Tube Only

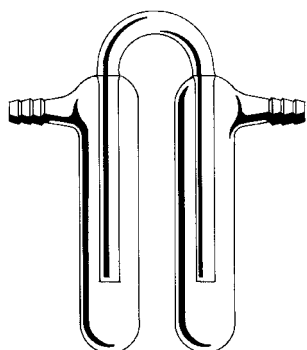
### Replacement Components:

AF-0513-A-22	Inner Tube Only
AF-0513-A-23	Reservoir Only
CG-352-02	#9 Compression Cap
CG-305-110	#110 Viton o-rings pkg. of 12



AF-0513-A

# BUBBLERS

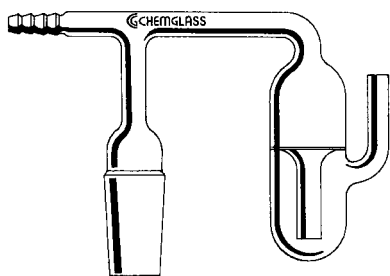


**AF-0513-D**

## AF-0513-D BUBBLER, AIRFREE®, DOUBLE

Similar in design to AF-0513 but with two oil reservoirs. Bubbler is approx. 135mm OAH x 125mm wide. Hose connections have an O.D. of 9mm at the middle serration.

Part  
Number  
**AF-0513-D-21**



**AF-0514**

## AF-0514 BUBBLER, HORIZONTAL, AIRFREE®

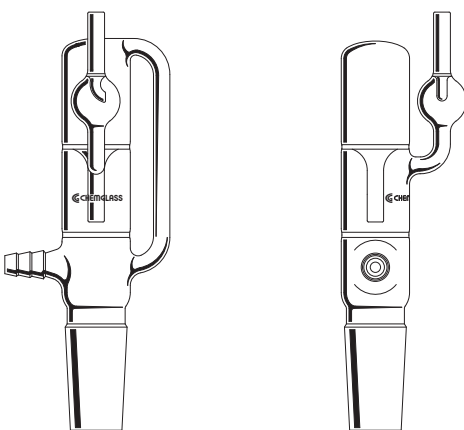
Horizontal design of bubbler allows for in-line connection and purging of apparatus. Hose connection has an O.D. of 9mm. Complete with standard taper inner joint.

Part	Joint
<u>Number</u>	<u>Size</u>
<b>AF-0514-01</b>	<b>14/20</b>
<b>AF-0514-02</b>	<b>24/40</b>

## AF-0516 BUBBLER, MODIFIED, AIRFREE®

Used to monitor gas flow to reactions while providing a vent to the atmosphere. Reservoir head prevents oil from being sucked back into the system. With standard taper inner joint for use in single or multi-neck flasks. Hose connection has an O.D. of 9mm. The 24/40 bubbler is available in two sizes, the larger for use in vessels having a capacity greater than 100mL.

Part	Joint	Overall
<u>Number</u>	<u>Size</u>	<u>Height (mm)</u>
<b>AF-0516-01</b>	<b>14/20</b>	<b>130</b>
<b>AF-0516-02</b>	<b>24/40</b>	<b>150</b>
<b>AF-0516-03</b>	<b>24/40</b>	<b>200</b>

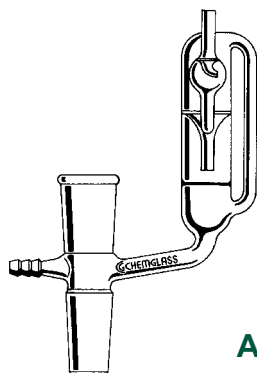


**AF-0516**

## AF-0518 BUBBLER, MODIFIED, AIRFREE®\*\*

Similar to the AF-0516, but with the inlet tube between an inner and outer standard taper joint of the same size. This design enables reactions to be performed in a single neck flask under an inert atmosphere while permitting sampling or additions through the top outer joint. Hose connection has an O.D. of 9mm. The 24/40 bubbler is available in two sizes, the larger for use in vessels having a capacity greater than 100mL.

Part	Joint	Overall
<u>Number</u>	<u>Size</u>	<u>Height (mm)</u>
<b>AF-0518-01</b>	<b>14/20</b>	<b>170</b>
<b>AF-0518-02</b>	<b>24/40</b>	<b>190</b>
<b>AF-0518-03</b>	<b>24/40</b>	<b>230</b>



**AF-0518**

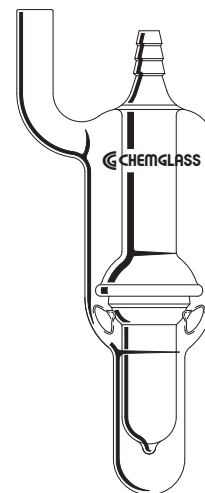
\*\* Design suggested by Dr. A.K. Saksena and Dr. E. Jao, Schering Plough Research Inst., Kenilworth, NJ.

## CG-4522 BUBBLER, HIGH CAPACITY, WITH CHECK VALVE\*

High capacity check valve bubbler keeps oil and air from being drawn into a system when negative pressure is developed. It is most often used when evacuating and purging apparatus with an inert gas. The bubbler is filled with oil (mineral or silicone) to a level slightly above the top socket joint. Under negative pressure, the float is drawn up to seal the outlet and prevent back flow. When exposed to positive pressure, the float is pushed down opening the seal between the spherical ball float and socket joint providing for a high capacity outlet. Available in two sizes.

Part Number	Joint Size	Overall Height (mm)
CG-4522-01	28/15	150
CG-4522-02	50/30	175

\*Designed by Dr. William Beard and Mr. Jack Korfhage, Ethyl Corporation, Baton Rouge, LA.



**CG-4522**

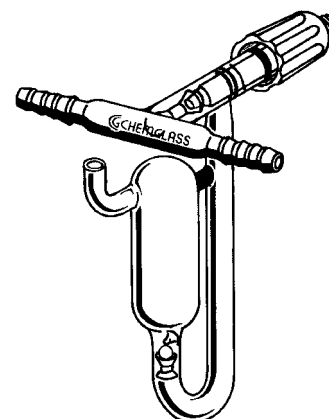
## CG-4536 BUBBLER, PRESSURE RELEASE

Used for the purging of AIRFREE® or vacuum apparatus with an inert gas. The pressure release valve is connected on one side to the low pressure gas source and the other side to a manifold or reaction vessel. The check valve prevents oil and air from being pulled into the apparatus. Hose connections are 10mm at the largest serration.

Part Number	Height x Width x Depth (mm)
CG-4536-01	130 x 100 x 100

### Replacement Components:

Part Number	Description
CG-999-02	Plug Only, Pressure Relief Valve



**CG-4536**