



CHEMICAL AGENT MONITORING SUPPLY COMPANY





CLIENTS

ABB
Agilent
Alion Science and Technology
Argonne National Laboratory
BASF
Bechtel
Boeing
British Aerospace
Bruker
Calspan-UB Research Center
CDS Dynatherm
Centers for Disease Control
Central Intelligence Agency
Chemical and Biological Information Analysis Center
Chemical Materials Agency
Defense Intelligence Agency
Democratic National Convention
Department of Defense
Department of Energy
Department of Homeland Security
Department of Interior
Department of Toxic Substances Control
California
Dow Chemical
Dugway Proving Grounds
EAI Corporation
EG&G Defense Materials
Environmental Protection Agency
ExxonMobil
Federal Bureau of Investigation
Fluor Corporation
Gas Technology Institute/GTI Defense
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General Electric
General Physics
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New York Police Department
North Carolina State Police
Northrop Grumman
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Republican National Convention
Sandia National Laboratories
Science Application International Corporation (SAIC)
SciTech Services
Siemens
Smiths Detection
Southern Research Institute
Southwest Research Institute
SRI International
Technical University Hamburg
Teledyne Brown
Tennessee Valley Authority
Thermo Electron
U.S. Air Force Dog Training Center
U.S. Army Edgewood Research, Development and Engineering Center (ERDEC)
U.S. Army Technical Escort Unit
U.S. Army Environmental Command
U.S. Chemical and Biological Defense Command
U.S. Customs
U.S. Navy
U.S. Special Operations Command
University of Alabama
Versar
Washington Group International
Westinghouse

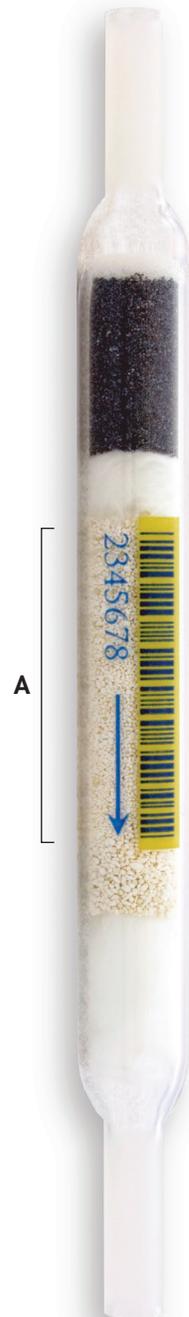
CONSUMABLES FOCUSED, DELIVERING SINGLE-SOURCE SOLUTIONS

Camsco manufactures sorbent tubes, traps and other consumables for sampling, monitoring and testing equipment. Our products deliver standard and custom solutions for PerkinElmer, CDS Dynatherm, Gerstel, Teledyne Tekmar, Markes, Shimadzu and more.

Across multiple industries and disciplines, clients choose Camsco for a variety of reasons, including:

- Nearly 20 years of practical tube building and designing experience combined with a full-time PhD guarantees world-class products and technical support. All tubes are manufactured in-house by Camsco artisans.
- Our in-house laser marking facility and patented high-temperature ceramic decals ensure unparalleled identification and tracking.
- We choose the finest raw materials when others don't.
- Every internal metal component is inert coated.
- We pre-screen and thermally condition all adsorbents based on customer feedback, testing and years of experience.
- Unlike others, we have an in-house glass blowing shop.
- We utilize four custom ovens that can condition hundreds of tubes per day.
- Camsco is AS 9100, NATO AQAP-110, ISO 9001, ISO 14001, and OHSAS 18001 certified.
- Our in-house Thermal Desorption-GC/MS system allows for continuous research and product improvement.
- Dynamic in-house capabilities permit rapid prototyping and same day testing.
- A track record of successfully meeting exacting requirements of the military since 1991.
- We offer a 100% replacement guarantee.
- We manufacture more tubes than all of our competitors combined.

^A Camsco's innovative **COGNI™ System*** is the most advanced tube labeling, identification and tracking system in the industry.



*Camsco One Glance Numeric Identification (COGNI™) System



IDENTIFICATION AND PRECISE TRACKING

Camsco's **COGNI™ System** is an innovative, field- and lab-proven labeling and identification solution which is designed to simplify product tracking and create unique histories for individual items in your LIMS. Camsco is the first to offer a permanent barcode on all metal and centerless ground glass tubes at no cost to our clients – while providing a ceramic banding scheme for LIMS and one-glance tube identification.

^B Serial numbers in both machine-readable and human-readable formats give clients confidence in storage, inventory management and data retrieval.

^C Camsco's **COGNI™ System** offers a quick, one-glance reference with circumferential bands that allows for quick sorbent identification.

- Quick tube recognition and lasting identification - **COGNI™ System** (barcodes, banding, individual numbering system).
- In-house laser system for direct marking on steel, glass, Teflon and brass.
- Patented ceramic kiln-fired barcode decals are virtually indestructible and chemically inert.
- Ceramic banding on glass in 5 colors.



Since Camsco is focused only on tubes and consumables for all of the industry's leading instruments, we have more tube manufacturing experience than all of our competition – combined.

PRECISION COUPLED WITH FLEXIBILITY

Adsorbent Selection. Camsco recommends sorbents based on suitability, not on brand names – we can supply a host of different options as well as offer our assistance to help you decide which sorbent is right for your particular application.

Conditioning. Following our proprietary protocol, Camsco preconditions all bulk sorbent materials with preheated UHP Helium.

Capping. Camsco offers capping solutions for long-term storage, transportation and analysis, including analytical caps, compression caps and passive sampling caps. If the application does not warrant storage or compression caps, we ship with protective PTFE micro caps. Compression fittings on conditioned tubes are numerically torqued to prevent diffusive sampling during transportation and storage.

YOU CAN RELY ON CAMSCO

Quality. Our highly-specialized, single-focus strategy results in a wide variety of quality products for our clients. Our manufacturing facility is AS 9100, NATO AQAP 110 and ISO 9001 certified. Is your instrument maker's part-time tube building operation even part of their quality system?

Price. As the largest tube maker in the world, our economies of scale allow us to manufacture higher quality tubes at lower prices than our competitors.

Finest Raw Materials. From the glass and steel to the PTFE, we choose the best materials – even when it's not required.

Service. Solely focused on tubes, our expertise is easily accessible and often relied upon.

Dedication. Sorbent tubes are not a by-product – they are our only product.

Proven Experience. We are approaching the two millionth tube made since 1991.

Identification and Tracking. The COGNI™ System is the industry's most comprehensive method of tube recognition and inventory management.



► Camsco offers a complete family of compression, analytical and storage caps to maintain and ensure the integrity of your samples.



For more information,
or to talk with a specialist,
please call Camsco at
713.983.0200 or visit
www.camsco.com.

Frequently Asked Questions

WHO IS CAMSCO?

Camsco® is the largest thermal desorption tube manufacturer in the world. In the last two decades, we have successfully delivered nearly 2 million tubes for a variety of end use applications.

WHY HAVEN'T WE HEARD ABOUT CAMSCO?

In the past, Camsco supplied tubes almost exclusively to military and intelligence communities, minimizing our exposure to commercial segments. In 2008, we started to actively promote our brand outside the military, and we currently serve customers in environmental monitoring, occupational health and safety, industrial hygiene, residual volatiles, materials emissions, food, flavor and fragrance, transportation safety, detector research and forensics.

HOW DO CAMSCO'S PRICES COMPARE WITH OTHER SUPPLIERS?

As the largest thermal desorption tube manufacturer, our economies of scale allow us to manufacture higher quality tubes at lower prices than our competitors. It's that simple.

WHAT IS THE COGNI™ SYSTEM?

You have more than one tube, and tracking individual tube usage becomes a challenge over time. The accuracy and reliability of barcodes help, but you should also be able to recognize a tube at the first glance. The COGNI System (Camsco's One Glance and Numeric Identification) combines the best of both worlds. Our barcodes are embedded on the tubes, providing much better identification solution over other methods. Our banding format is unique in the industry, and most of the time we offer them at no additional cost.

HOW DOES THE QUALITY OF CAMSCO'S PRODUCTS COMPARE WITH INSTRUMENT MANUFACTURERS AND OTHER RESELLERS?

Since 1991, militaries have trusted Camsco's reliability on the front line of battlefields, and behind the scene of chemical weapons destruction facilities.

All tubes are made in the United States by our highly-skilled artisans, the majority of whom have over 10,000 hours of tube building experience.

Unlike instrument manufacturers who make tubes as a by-product of their core business, we are completely focused on tubes. Our state-of-the-art manufacturing facility is the culmination of years of practical experience. This facility allows for improved productivity, best-in-class quality and supply reliability enabling Camsco to lead the industry as the premier single-source tube provider. While other companies see tubes as a small part of the equation, it's our sole focus.

Camsco's skilled and experienced artisans manufacture all of our products – and we are proud to say that we are AS 9100, NATO AQAP 110 and ISO 9001 certified.

WHY WOULD I BUY FROM CAMSCO INSTEAD OF AN INSTRUMENT MANUFACTURER?

Higher quality tubes, lower prices and guaranteed complete compatibility. And when you pick up the phone and call our office, you will always be able to talk with an expert who will understand your needs. We know tubes – inside and out – and offer a 100% replacement guarantee.

CAN CAMSCO MAKE CUSTOM TUBES TO MEET SPECIFIC NEEDS?

We regularly customize tubes for our clients. Our dynamic in house capabilities permit rapid prototyping and same day testing.

WHAT IF I WANT TO TEST A SAMPLE BEFORE I COMMIT TO AN ORDER?

We frequently ship free samples to new customers. Once people see the high quality tubes that we manufacture, and experience our great customer service, it becomes obvious why Camsco is the market leader. Just let us know which tube or product you'd like and we'll ship it for free.

HOW DO I CONTACT CAMSCO?

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The COGNI™ SYSTEM



Working closely with clients and listening to their needs, Camsco has developed an innovative identification system – COGNI™ (Camsco's One Glance Numeric Identification) System.

Managing and tracking tube usage becomes a challenge over time. The accuracy and reliability of barcodes help, but you should also be able to recognize a tube at one glance. The COGNI™ System combines the best of both worlds. Our barcodes are embedded on each individual tube, providing a much better identification solution over traditional methods. Our banding format is the first in the industry and it comes standard on many of our tubes. This system is also designed to be recognized by LIMS, Laboratory Information Management Systems. COGNI™ is the best-in-class identification method available.

COGNI™ SYSTEM: A SYSTEMATIC SOLUTION FOR YOU TO IDENTIFY TUBES

To reduce the complexity of your lab work, Camsco believes you should be able to get the most important information, such as sorbent type and batch identification at one glance. Our laser bands on stainless steel tubes, optional colored bands on glass tubes, and colored spacers in PTFE tubes offer exactly that – and then some. Camsco is the first in the industry to define a standard banding scheme for the most popular ATD tubes:

- 3 bands indicate a Tenax™ TA tube
- 2 bands indicate an Air Toxics tube
- 1 band indicates a Carbotrap™ B tube
- all other tubes have no band
- 4 bands available for customer specified requirements

We also offer custom banding options for all tubes. Tracking accuracy is easily managed with both bar-coded and numeric serial numbers on tubes. This is especially important for stainless steel tubes which will

not physically allow you to see the sorbent inside. Our barcodes are encrypted with code 39 which will work with most plug-and-play LED scanners.

PEACE OF MIND

In case the records of your tubes get lost, just contact Camsco with the serial number and we'll help you to retrieve the entire history of the tube, such as:

- sorbent info (type, amount, mesh size, lot number, etc)
- name of the assembly worker and quality assurance personnel
- date of manufacturing/shipping
- pressure drop tolerance and conditioning instructions

Visually elegant, instantly convenient and technically advanced, the COGNI™ System is standard on most of Camsco's commercial tubes. Contact Camsco to design your own tubes with a unique COGNI™ System to fit your application.

| | Type of ID | Available On | Description | Example |
|---------------|------------------------|-----------------------|---|--|
| One Glance ID | Laser Bands | Stainless Steel Tubes | For ATD tubes: 3 bands indicate a Tenax™ TA tube; 2 bands indicate an Air Toxics tube; 1 band indicates a Carbotrap™ B tube; all other tubes have no band, 4 bands available for customer specified applications. |  |
| | Colored Bands | Glass Tubes | For ATD tubes, 3 bands indicate a Tenax™ TA tube; 2 bands indicate an Air Toxics tube; 1 band indicates a Carbotrap™ B tube; all other tubes have no band, 4 bands available for customer specified applications. For military tubes: Any number of bands in any combination of blue black, red, green and yellow, defined by customer. Non fritted tubes come with an arrow to indicate direction of flow. |  |
| | Colored Spacers | PTFE (Teflon) Tubes | Spacers can be arranged in any combination of blue, black, red, green and yellow as defined by customer. Colorless spacers come standard when no other colors are specified. |  |
| Numeric ID | Barcode Serial Numbers | All Tubes | Permanently Laser marked on Stainless steel tubes. Permanently fired/embedded on the surface of centerless ground glass tubes. High/low temperature barcode stickers on all other tubes. |  |
| | Numeric Serial Numbers | All Tubes | | |

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Sorbent Tubes for PerkinElmer, Markes and Shimadzu Instruments

PerkinElmer, Markes and Shimadzu use sorbent tubes that are generally considered the “industry standard.” Camsco’s® expansive in-house manufacturing and glass blowing capabilities provide flexibility for clients, including the ability to fuse glass frits, centerless grinding, lapping, annealing and polishing – all with the experience that comes with having manufactured almost two million thermal desorption tubes since 1991. Camsco makes stainless steel and glass tubes in several configurations for all of the PerkinElmer, Markes and Shimadzu instruments.

STANDARD FEATURES

Camsco uses only the best raw materials. Our borosilicate-33 glass tube stock is Schott-Duran and we never use Simax tubing. The steel used to manufacture these tubes is the highest grade 316L stainless. Both glass and steel have unique serial numbers and flow direction arrows are included on fritless glass tubes. The glass tubes have fused glass frits.

To ensure sample and testing accuracy, we inert coat all internal metal parts as part of our standard manufacturing process. The wire cloth disks and retention clips are less likely to introduce active sites and interfere with your analysis.

COGNI™ SYSTEM

Barcode, serial number, and circumferential band(s) come standard as part of the COGNI (Camsco’s One Glance and Numeric Identification) System. The identification marks are permanently embedded on the tubes offering an inherent advantage over other identification methods.

- Three bands for Tenax TA tubes
- Two bands for Air Toxic tubes
- One band for Carboxpack™ B tubes
- No band for other tubes
- Four bands available for customer specified requirements



CUSTOM FEATURES – STAINLESS STEEL

Custom options include inert coatings and conditioned tubes can be shipped with compression fittings. Cap options include compression caps (brass, steel and PTFE) and analytical caps (brass and PTFE) for conditioned tubes.

CUSTOM FEATURES – BOROSILICATE GLASS

Options include fused glass frits, without glass frits and quartz wool. Tube manufacturing includes centerless grinding, ground ends, chamfers, lapping, annealing, polishing and fire-polishing.

CAPPING OPTIONS

Compression caps, analytical caps and passive sampling caps are available. Please refer to the Capping Options insert sheet for more information.

If compression caps are ordered with conditioned tubes, Camsco guarantees that each cap is torqued to optimal tightness.

Protective micro caps are provided when no cap option is specified.

STEEL SORBENT TUBE



GLASS SORBENT TUBE (WITH FRIT)



GLASS SORBENT TUBE (WITHOUT FRIT)



Steel ATD Sample Tubes

| | Part Number* |
|-------------------------------|--------------|
| Tenax™ TA 60/80 mesh | SC60520-60-B |
| Air Toxics | SC60501-B |
| Carbopack™ B 60/80 mesh | SC60541-B |
| Chromosorb® 106 60/80 mesh | SC60503-B |
| Tenax™ GR 60/80 mesh | SC60520-GR-B |
| Carbopack™ B/Carbosieve™ SIII | SC60528-B |
| Carboxen™ 569 20/45 mesh | SC60530-B |
| Carbosieve™ SIII 60/80 mesh | SC60510-B |

Glass ATD Sample Tubes

| | Part Number* |
|-------------------------------|--------------|
| Tenax™ TA 60/80 mesh | GC60520-60-B |
| Air Toxics | GC60501-B |
| Carbopack™ B 60/80 mesh | GC60541-B |
| Chromosorb® 106 60/80 mesh | GC60503-B |
| Tenax™ GR 60/80 mesh | GC60520-GR-B |
| Carbopack™ B/Carbosieve™ SIII | GC60528-B |
| Carboxen™ 569 20/45 mesh | GC60530-B |
| Carbosieve™ SIII 60/80 mesh | GC60510-B |

*All part numbers correlate to the following options: Conditioned;
Brass Compression Caps (Swagelok)

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Sorbent Tubes for CDS Dynatherm Instruments

Camsco® manufactures tubes used in Dynatherm instruments. Dynatherms have been used for many years for both civilian and military applications. Camsco has the in-house capabilities to address several complex applications from fused glass frits, precision bore, centerless grinding to multiple compound outside diameters, glass blowing, grinding, lapping, annealing and polishing.

STANDARD FEATURES

Camsco uses only the best raw materials. Our borosilicate-33 glass tube stock is Schott-Duran and we never use Simax tubing. All of the sorbent tubes and traps that Camsco makes for the Dynatherms are centerless ground to an exacting OD tolerance of $\pm .00225"$. We offer the choice of frit sizes, porosities and pressure drop test all tubes to make certain that the frit hasn't restricted flow during the annealing process which historically has been a problem with other manufacturers. Individual tube conditioning and glass storage vials or caps are optional.

COGNI™ SYSTEM

Barcode, serial number, and circumferential band(s) come standard as part of the COGNI (Camsco's One Glance and Numeric Identification) System. The identification marks are permanently embedded on the tubes offering an inherent advantage over other identification methods.

CUSTOM OPTIONS

Camsco offers silanized and unsilanized glass and quartz wools, as well as more robust focusing traps with captured spacers on each end.

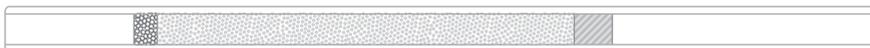
CAPPING OPTIONS

Both compression and micro caps are available. Please refer to the Capping Options insert sheet for more information.

If compression caps are ordered with conditioned tubes, Camsco guarantees that each cap is torqued to optimal tightness.



DYNATHERM 6MM SAMPLE TUBE



DYNATHERM FAST FLOW FOR IACEM, ACEM & MDTU



FOCUSING TRAP FOR DYNATHERM ACEM 900



FOCUSING TRAP FOR DYNATHERM IACEM/ACEM 9300



Standard 6mm Dynatherm

Part Number*

| | |
|-----------------------------|----------------|
| HayeSep® D 40/60 mesh | AC60408-B |
| Chromosorb® 106 60/80 mesh | AC60403-B |
| Tenax™ TA 35/60 mesh | AC60420-B |
| Tenax™ GR 20/35 mesh | AC60420GR-B |
| Tenax™ TA/HayeSep® D | AC60430-B |
| Carbosieve™ SIII 60/80 mesh | AC60420-08-B |
| Carboxen™ 569 20/45 mesh | AC60430-20-B |
| Tenax™ TA/Carboxen™ 1000 | AC60420-1000-B |

Fast Flow Tubes for Dynatherm IACEM

Part Numbers*

| | |
|--|--------------------|
| HayeSep® D 40/60 | AC6-100408-B |
| Chromosorb® 106 40/60 | AC6-100403-B |
| Tenax™ TA 35/60 | AC6-100420-B |
| Tenax™ GR 60/80 | AC6-100420GR-B |
| Tenax™ TA 35/60 / HayeSep® D 40/60 | AC6-100420-08-20-B |
| Chromosorb® 106/Tenax™ TA | AC6-100419-B |
| Chromosorb® 106 60/80 / HayeSep® D 40/60 | AC6-100420-0308-B |
| Carbotrap™ 317 | AC6-1004317-B |

6mm Focusing Traps for ACEM (7.25" Length)

Part Number*

| | |
|------------------------------------|--------------|
| HayeSep® D 40/60 | FC60608-B |
| Chromosorb® 106 60/80 | FC60603-B |
| Tenax™ TA 60/80 | FC60620-B |
| Tenax™ GR 60/80 | FC60620-GR-B |
| Tenax™ TA 60/80 / HayeSep® D 40/60 | FC60608-20-B |
| Carbotrap™ 201 | FC606201-B |

6mm Focusing Traps for IACEM 9300 (4.5" Length) Part Number*

| | |
|------------------------------------|---------------|
| HayeSep® D 40/60 | IFC60608-B |
| Chromosorb® 106 60/80 | IFC60603-B |
| Tenax™ TA 60/80 | IFC60620-B |
| Tenax™ GR 60/80 | IFC60620GR-B |
| Tenax™ TA 60/80 / HayeSep® D 60/80 | IFC60608-20-B |
| Carbotrap™ 201 | IFC606201-B |
| Carbotrap™ 300 | IFC606300-B |
| Carbotrap™ 301 | IFC606301-B |
| Carbotrap™ 370 | IFC606370-B |

*All part numbers correlate to the following options: Conditioned;
Brass Compression Caps (Swagelok)

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Sorbent Tubes for Gerstel Thermal Desorption Units

Camsco® manufactures both the glass and stainless steel tubes used in Gerstel instruments in the 6mm x 7" size, in addition, we offer short 6mm x 2 3/8" glass tubes. Our expansive in-house manufacturing and glass blowing capabilities provide flexibility for clients, including the ability to fuse glass frits, centerless grinding, lapping, annealing and polishing – all with the experience that comes with having manufactured well over one million thermal desorption tubes since 1991.

STANDARD FEATURES

Camsco uses only the best raw materials. Our borosilicate-33 glass tube stock is Schott-Duran and we never use Simax tubing. All glass used in the manufacture of sorbent tubes for Gerstel instruments are centerless ground for an exacting OD tolerance. Both glass and steel have unique serial numbers and flow direction arrows. The steel used in these tubes is 316L stainless and we offer fritted and non-fritted tubes.

To ensure sample an testing accuracy, we inert coat all internal metal parts as part of our standard manufacturing process. The coated wire cloth disks and retention clips are much less likely to introduce active sites to interfere with your analysis.

Individual tube conditioning and glass storage vials are optional.

CUSTOM OPTIONS

Camsco offers fritted or non-fritted 6mm x 7" glass tubes, we also offer fritted or indented 6mm x 2 3/8" short glass tubes. We also provide other options including silanized, unsilanized glass and quartz wools. Conditioned tubes can be shipped with compression fittings or glass storage containers.

COGNI™ SYSTEM

Barcode, serial number, and circumferential band(s) come standard as part of the COGNI (Camsco's One Glance and Numeric Identification) System.

CAPPING OPTIONS

Both compression and micro caps are available. Please refer to the Capping Options insert sheet for more information.

If compression caps are ordered with conditioned tubes, Camsco guarantees that each cap is torqued to optimal tightness.

We provide micro caps for free if no other caps are ordered.



SHORT GERSTEL GLASS (6MM X 2 3/8")



GLASS TUBE (6MM X 7")



STEEL TUBE (6MM X 7")



New Gerstel Glass (6mm x 2 3/8")

| | Part Number |
|------------------------------------|--------------------|
| Tenax™ TA 35/60 (with Frit) | G60220-35-F |
| Tenax™ TA 60/80 (with Frit) | G60220-F |
| Chromosorb® 106 60/80 (with Frit) | G60203-F |
| Tenax™ GR (with Frit) | G60220-GR-F |
| Carbopack™ B (with Frit) | G60241-F |
| Tenax™ TA 35/60 (with Pinch) | G60220-35 |
| Tenax™ TA 60/80 (with Pinch) | G60220 |
| Chromosorb® 106 60/80 (with Pinch) | G60203 |
| Tenax™ GR (with Pinch) | G60220-GR |
| Carbopack™ B (with Pinch) | G60241 |

Glass TDS Sample Tubes (6mm x 7")

| | Part Number* |
|--------------------------------------|---------------------|
| Tenax™ TA | GC60720-F-B |
| Tenax™ GR | GC60720-GR-F-B |
| Chromosorb® 106 | GC60703-F-B |
| Carbosieve™ S-III 60/80 mesh | GC60711-F-B |
| Carbopack™ X 60/80 | GC60724-F-B |
| Carbotrap™ 217 | GC607217-F-B |
| Carbopack™ X 60/80 / Tenax™ TA 60/80 | GC60724-20-F-B |
| Carbotrap™ 300 | GC607300-F-B |
| Carbotrap™ 349 | GC607349-F-B |

Gerstel Stainless (6mm x 7")

| | Part Number* |
|--------------------------------------|---------------------|
| Tenax™ TA | SC60720-F-B |
| Tenax™ GR | SC60720-GR-F-B |
| Chromosorb® 106 | SC60703-F-B |
| Carbosieve™ S-III 60/80 mesh | SC60711-F-B |
| Carbopack™ X 60/80 | SC60724-F-B |
| Carbotrap™ 217 | SC607217-F-B |
| Carbopack™ X 60/80 / Tenax™ TA 60/80 | SC60724-20-F-B |
| Carbotrap™ 300 | SC607300-F-B |
| Carbotrap™ 349 | SC607349-F-B |

*All part numbers correlate to the following options: Conditioned;
Brass Compression Caps (Swagelok)

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Sorbent Tubes for Teledyne Tekmar Thermal Desorption Units

Camsco® manufactures both the glass and stainless Teledyne Tekmar tubes in two sizes, 1/4" and 1/2". Our expansive in-house manufacturing and glass blowing capabilities provide flexibility for clients, including centerless grinding, lapping, annealing and polishing – all with the experience that comes with having manufactured well over one million thermal desorption tubes since 1991.

STANDARD FEATURES

Camsco uses only the best raw materials. Our borosilicate-33 glass tube stock is Schott-Duran and we never use Simax tubing. All of the glass sorbent tubes that Camsco makes for Teledyne Tekmar instruments are centerless ground for an exacting OD tolerance. Both glass and steel tubes have unique serial numbers and flow direction arrows. The steel used in these tubes is 316L stainless. Individual tube conditioning and glass storage vials are optional.

COGNI™ SYSTEM

Barcode, serial number, and circumferential band(s) come standard as part of the COGNI (Camsco's One Glance and Numeric Identification) System. The identification marks are permanently embedded on the tubes offering an inherent advantage over other identification methods.

CUSTOM OPTIONS

Camsco offers silanized, unsilanized glass and quartz wools. Conditioned tubes can be sealed and shipped with compression caps or airtight glass storage containers.

CAPPING OPTIONS

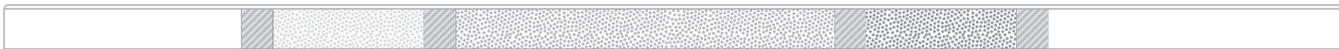
Both compression caps and micro caps are available. Please refer to the Capping Options insert sheet for more information.

If compression caps are ordered with conditioned tubes, Camsco guarantees that each cap is torqued to optimal tightness.

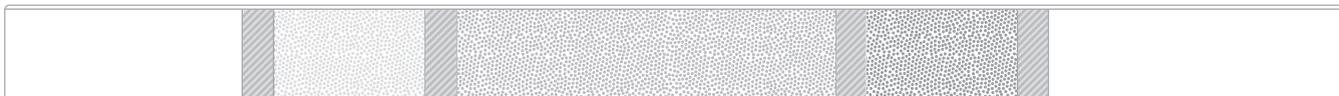
We provide micro caps for free if no other caps are ordered.



TELEDYNE TEKMAR (1/4" X 7" STEEL AND GLASS)



TELEDYNE TEKMAR (1/2" X 7" STEEL AND GLASS)



| Teledyne Tekmar (1/4" x 7" Steel and Glass) | Part Number* |
|--|---------------------|
| Tenax™ TA | SC/GC602020-B |
| Tenax™ GR | SC/GC602020-GR-B |
| Chromosorb® 106 | SC/GC602003-B |
| Carbosieve™ | SC/GC602011-B |
| Carbotrap™ B | SC/GC602041-B |
| Carbotrap™ C | SC/GC602042-B |
| Carbotrap™ 217 | SC/GC6020217-B |
| Carbotrap™ 300 | SC/GC6020300-B |
| Carbotrap™ 349 | SC/GC6020349-B |

| Teledyne Tekmar (1/2" x 7" Steel and Glass) | Part Number* |
|--|---------------------|
| Tenax™ TA | SC/GC1302020-B |
| Tenax™ GR | SC/GC1302020-GR-B |
| Chromosorb® 106 | SC/GC1302003-B |
| Carbosieve™ | SC/GC1302011-B |
| Carbotrap™ B | SC/GC1302041-B |
| Carbotrap™ C | SC/GC1302042-B |
| Carbotrap™ 217 | SC/GC13020217-B |
| Carbotrap™ 300 | SC/GC13020300-B |
| Carbotrap™ 349 | SC/GC13020349-B |

* All Teledyne Tekmar tubes are preconditioned;
Part Numbers above include Brass Compression Cap (Swagelok)

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DAMMS Tubes and Preconcentrator Tubes (PCTs)

The predecessor to the U.S. Army Chemical Materials Agency developed thermal desorption tube monitoring methods for chemical warfare agents to be implemented at U.S. sites associated with CW materials. That method became known as The Depot Area Air Monitoring System (DAAMS). The method has been in use for over 20 years now. Camsco® has been a leader in the development of quality standards and innovations for DAAMS since 1991.

DAAMS & PCTS

DAAMS tubes are used for historical monitoring and surveillance at worldwide military chemical weapons storage sites, research laboratories and NATO military theaters. PCTs are used in ACAMS and CMS Minicams for near real-time monitoring of chemical warfare agents.

All DAAMS tubes and PCTs are pressure drop tested to ensure proper flow rates. All sorbents are preconditioned. Certificates of Compliance are provided to address site-specific requirements.

Camsco provides many options, including our patented ceramic barcode, high temperature barcode labels, laser bonded color ceramic appliques and color ceramic bands and dots facilitating lot identification and simplifying LIMS management.

Additionally, we offer centerless grinding, ground ends, chamfers, lapping, annealing, polishing and fire-polishing.

To ensure sample and testing accuracy, we inert coat all internal metal parts as part of our standard manufacturing process. The coated wire cloth disks and retention clips are much less likely to introduce active sites to interfere with your analysis.

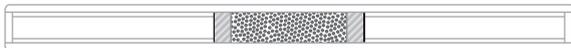
COGNI™ SYSTEM

Barcode, serial number, and circumferential band(s) are available on the 6mm and 8mm DAAMS tubes as part of the COGNI (Camsco's One Glance and Numeric Identification) System.

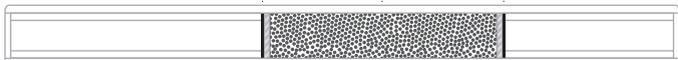
We offer five colors (blue, red, yellow, black, and green) as banding options on glass tubes.



6MM DAAMS



8MM DAAMS



3MM DAAMS TRANSFER TUBES



3MM PRECONCENTRATOR TUBES



4MM PRECONCENTRATOR TUBES



3MM PRECONCENTRATOR TUBES FOR CMS MINICAMS



6mm DAAMS Tubes

| | Part Number |
|----------------------------|--------------------|
| Chromosorb® 106 60/80 mesh | 60403 |
| Tenax™ TA 35/60 mesh | 60420 |
| Tenax™ GR 60/80 mesh | 60420-GR |

8mm DAAMS Tubes

| | Part Number |
|------------------------------------|--------------------|
| Chromosorb® 106 60/80 mesh (90mm) | 80403 |
| Tenax™ TA 60/80 mesh (90mm) | 80420 |
| Tenax™ GR 60/80 mesh (90mm) | 80420-GR |
| Chromosorb® 106 60/80 mesh (115mm) | A80403 |
| Tenax™ TA 60/80 mesh (115mm) | A80420 |
| Tenax™ GR 60/80 mesh (115mm) | A80420-GR |

3mm DAAMS Transfer Tubes

| | Part Number |
|---|--------------------|
| Chromosorb® 106 60/80 mesh | 30403 |
| Tenax™ TA 60/80 mesh | 30420 |
| Tenax™ GR 60/80 mesh | 30420-GR |
| HayeSep® D 40/60 / Tenax TA™ 60/80 | 30408-20 |
| Chromosorb® 106 60/80 / Tenax™ GR 60/80 | 30419 |

Preconcentrator Tubes – 3 or 4mm

| | Part Number |
|-----------------------|--------------------|
| HayeSep® D 40/60 mesh | 31608/S41608 |
| Tenax™ TA 35/60 mesh | 31620/S41620 |
| Tenax™ GR 35/60 mesh | 31620-GR/S41620-GR |

Preconcentrator Tubes for MiniCams – 3 or 4mm

| | Part Number |
|-----------------------|---------------------|
| HayeSep® D 40/60 mesh | M31608/M41608 |
| Tenax™ TA 35/60 mesh | M31620/M41620 |
| Tenax™ GR 35/60 mesh | M31620-GR/M41620-GR |

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V-to-G Conversion and NO_x/HD Prefilters

The U.S. Army Chemical Materials Agency developed the DAAMS thermal desorption monitoring methods for chemical warfare agents over 20 years ago. Two important tools in this method are V-to-G conversion pads and NO_x/HD prefilters. Camasco® has been a leader in the development of quality standards and innovations since 1991.

VGT & V TO G CONVERSION PADS

Camsco V-to-G conversion pads are used to convert the nerve agent VX to the more easily detectable and volatile G analog. V-to-G conversion pads (silver fluoride/AgF pads) have been used for years by installing AgF impregnated pads in compression fittings at the distal end of sample lines.

In 2001, Camasco invented the VGT (patented). The VGT simply moves the AgF pads out of the compression fitting and into a Teflon tube. The four major benefits include:

- 2-8 AgF pads can offer less frequent change-outs and better recoveries
- Traceability – VGT tubes can be labeled and tracked in LIMS
- VGTs can be changed out while in heavy PPE
- ACAMS/MiniCams confirmation

VGTs are available in English and metric sizes from 3/16" to 5/8" in 1/16th increments with 1-8 AgF pads and in lengths from 2-24". They can be laser marked, color banded, and labeled with expiration date, lot number and flow direction.

COGNI™ SYSTEM

Barcodes and serial numbers are available upon request as part of the COGNI (Camsco's One Glance and Numeric Identification) System.

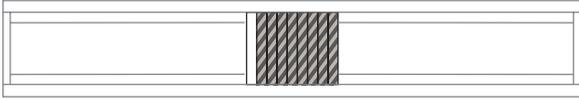
We offer five colors (blue, red, yellow, black, and green) of PTFE spacers for one glance identification.

NO_x/HD PREFILTERS

NO_x prefilters are used in conjunction with HD chemical agent real-time and historical monitoring to remove environmental NO_x, preserving sample integrity for DAAMS and PCTs. They are available in diameters from 3/16" to 5/8" in 1/16" increments and in any length. Standard tubes are made from PTFE tubing.



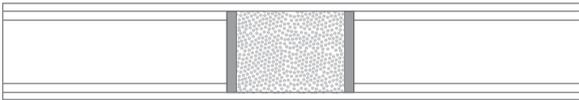
VGT CONVERSION PAD ASSEMBLY



V-TO-G CONVERSION PADS



NO_x/HD PREFILTERS



| VGT's V-to-G Conversion Tubes | Part Number |
|-------------------------------|-------------|
| 1/2" (13mm) VGT | VGT-13 |
| 3/8" (9.5mm) VGT | VGT-9 |
| 5/16" (8mm) VGT | VGT-8 |
| 1/4" (6mm) VGT | VGT-6 |
| 3/16" (5mm) VGT | VGT-1875 |

| NO _x /HD Pre-filter | Part Number |
|--------------------------------|-------------|
| 1/2" (13mm) NO _x | 13416 |
| 3/8" (9.5mm) NO _x | 71416 |
| 5/16" (8mm) NO _x | 81416 |
| 1/4" (6mm) NO _x | 61416 |

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Cap Options Sorbent Tubes

Camsco® offers a variety of cap options to fit your specific application and needs.

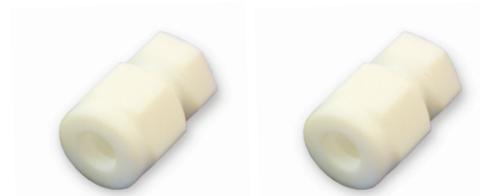
THE FUNCTIONALITY OF THE CAPS

- Compression caps are used for storage, both before and after sampling
 - All compression caps come with Camsco's universal PTFE ferrules
 - All pre-conditioned tubes should be shipped with compression caps
 - At Camsco, we numerically torque the compression caps to optimal tightness
 - For passive sampling, Camsco's PTFE compression caps are 75% lighter than the equivalent brass caps

- Analytical caps are used for analysis and storage
 - Analytical caps will work with the robotic arms that de-cap and re-cap tubes in ATDs
 - For long-term storage, compression caps are better than analytical caps
- Micro caps are used for short-term transportation/protection
 - Uncapped tube orders will come with micro caps at no cost to our customer

Other than the caps designed for 1/4" OD ATD tubes, caps are also available for other tubes:

- Compression caps are available for 6mm, 1/4 inch, and 1/2 inch
- Analytical caps are available for 1/4 inch only
- Micro caps are available for 6mm, 1/4 inch, and 1/2 inch



Camsco's PTFE Compression Caps have the following advantages compared to brass/steel Swagelok Caps:

- Shock-absorbing
- Chemically inert
- 75% lighter than metal counterparts, weighing in at only 5 grams vs 20 grams

APPLICATION CHART

| Tube Type | Compression Caps | Analytical Caps | Micro Caps | Passive Sampling Caps |
|-------------------------------------|------------------------|-----------------|------------|-----------------------|
| Stainless Steel ATD Tubes | PTFE Brass Steel | PTFE Brass | PTFE | Aluminum |
| Coated Stainless Steel ATD Tubes | PTFE Brass Steel | PTFE Brass | PTFE | Aluminum |
| Glass ATD Tubes | PTFE Brass Steel | Brass | PTFE | N/A |

Tube End Caps

Part Number ¼"

| | |
|---|--------|
| PTFE Analytical Cap (For Use with TurboMatrix) | PTFE60 |
| Brass Analytical Cap (For use with TurboMatrix) | BS60 |
| PTFE Compression Cap (CAMSCO) | PCC60 |
| Diffusive End Cap | DC60 |
| Brass Compression Cap (Swagelok) | BSC60 |
| Stainless Steel Compression Cap (Swagelok) | SSC60 |

Compression Caps



Analytical Cap



Micro Cap



Passive Sampling Caps



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Free Sample Request Form

Camsco® would be happy to send you a free sample of any standard or custom sorbent tube for your review and testing. Just provide some information to help us better understand your needs and fax or mail in your request. Or pick up the phone and call 800.448.3280 if you would like to talk to an expert.

INDUSTRY

- Consumer Products
- Environmental
- First Responder
- Food
- Flavor/Fragrance
- Government
- Military
- Laboratory
- Manufacturing
- University/Research
- Other _____

INSTRUMENT TYPE

Manufacturer: _____
 Instrument Model: _____
 Size/Type: _____
 Special Instructions/Comments: _____

CONTACT INFORMATION

Name: _____
 Company: _____
 Title: _____
 Shipping Address: _____

 City: _____
 State/Province: _____
 Telephone: _____
 Fax: _____
 E-mail: _____

FREE SAMPLE REQUEST PROCESSING

ON THE WEB

www.camsco.com/sorbent_tube_sample.htm

MAIL

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 Attn: Free Tube Request
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 Houston, TX 77041
 Toll Free 800.448.3280
 Phone 713.983.0200

FAX

713.983.7200

After you receive the tube, please let us know what you think about our product. We are committed to serving our customers and we would like to know how we can become your supplier of choice. Thank you for your interest in Camsco.

For more information about Camsco, please visit our website, **www.camsco.com**.