Sulfinert-Treated Sample Cylinders Assembly & Maintenance Guidelines

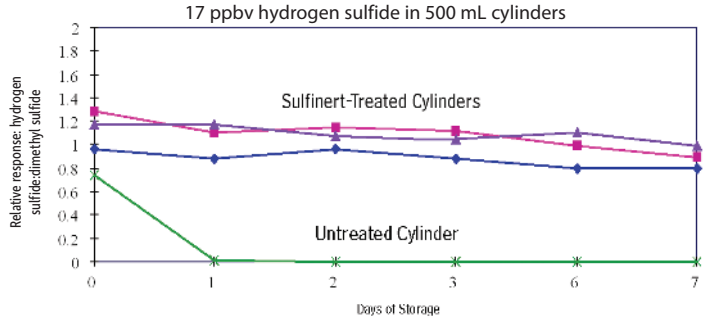
cat.# 24130, 24131, 24132, 24133, 24134, 21394, 24130-PI, 24131-PI, 24132-PI, 24133-PI, 24134-PI, 21394-PI, 22111, 22112, 22113, 22111-PI, 22112-PI, 22113-PI

Sulfinert-Treated, High-Pressure Sample Cylinders

- Sulfinert coating provides stable storage of sulfur and mercury at ppb levels in petroleum samples.
- Inert coating doesn't flake; more durable than PTFE.
- TPED-compliant cylinders available for shipping into EU countries.
- All cylinders have ¼" female NPT threads on both ends.

Refinery and natural gas samples often contain trace amounts of sulfur-containing compounds, which can interfere with reactions or poison catalysts in petrochemical processes. Because sulfur compounds quickly react with stainless-steel surfaces, accurate determination of these compounds is impossible when samples are collected and stored in untreated sample cylinders. The Sulfinert passivation technique bonds an inert silica layer into the surface of stainless steel, preventing active compounds from reacting with or adsorbing to the steel. These Swagelok high-pressure sample cylinders are Sulfinert treated for greater stability of sulfur compounds and mercury. DOT-3E rating (up to/including 500 cc) and DOT-3A (over 500 cc) to 1800 psig (TPED cylinders to 1450 psig) allows sampling at gas wellheads as well as on-site refineries. Use of high-pressure sample cylinders is cited in ASTM D1265, Standard Practice for Sampling Liquefied Petroleum (LP) Gases, Manual Method.

Sulfur compounds are stable in Sulfinert-treated, stainless-steel systems.



304L Stainless Steel

		1800 psig (12,411 kPa)		TPED, 1450 psig (9,997 kPa)	
Size	qty.	Swagelok part #	cat.#	Swagelok part #	cat.#
75 cc	ea.	304L-HDF4-75	24130	304L-HDF4-75-PD	24130-PI
150 cc	ea.	304L-HDF4-150	24131	304L-HDF4-150-PD	24131-PI
300 cc	ea.	304L-HDF4-300	24132	304L-HDF4-300-PD	24132-PI
500 cc	ea.	304L-HDF4-500	24133	304L-HDF4-500-PD	24133-PI
1000 cc	ea.	304L-HDF4-1000	24134	304L-HDF4-1000-PD	24134-PI
2250 cc	ea.	304L-HDF4-2250	21394	304L-HDF4-2250-PD	21394-PI

316L Stainless Steel

		5000 psig (34,474 kPa)		TPED, 4350 psig (29,992 kPa)	
Size	qty.	Swagelok part #	cat.#	Swagelok part #	cat.#
150 cc	ea.	316L-50DF4-150	22111	316L-50DF4-150-PD	22111-PI
300 cc	ea.	316L-50DF4-300	22112	316L-50DF4-300-PD	22112-PI
500 cc	ea.	316L-50DF4-500	22113	316L-50DF4-500-PD	22113-PI

also **available**

Certificates are available upon request.

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Pure Chromatography

Assembling the Sample Cylinder and Valve

We recommend using a new high-pressure valve with your new cylinder because the threads of a used valve could be damaged, creating an improper seal and resulting in leaks. To assemble a cylinder and valve:

1. Clean the threads on the valve and cylinder following generally accepted methods; then, examine the threads for damage (e.g., burrs, dents, nicks, or gouges). Reject or repair a valve or cylinder with threads showing these defects.
2. Facing the threaded valve port, wrap it two to three times clockwise with PTFE tape that is pulled taut. The tape should be wrapped in the opposite direction that the valve will turn when it is threaded onto the cylinder. It is essential that all threads making contact with the cylinder be covered with tape, but the tape must not interfere with the flow path. **Following ANSI standards for steps 2–4 is highly recommended (www.ansi.org).**
3. Install the valve onto the cylinder by first carefully aligning the ports, then inserting the valve and hand tightening it to engage the threaded port. If the valve fails to thread easily, remove it and visually inspect the threads for burrs, flaws, or improperly applied tape. If installation continues to be a problem, recheck the valve and cylinder for damaged threads. **DO NOT USE ANY TOOLS DURING THIS STEP.**
4. Secure the valve and cylinder assembly in a holding device, using protective material around the cylinder to prevent gouging of the sidewall, and wrench tighten. Note that the number of turns required to make a complete seal may vary because not every assembly is the identical.

Cleaning

To clean a treated part, rinse with a solvent that will dissolve probable surface contaminants (i.e., use a nonpolar solvent to remove hydrocarbon contaminants or a more polar solvent to remove more active contaminants). Avoid using cleaners containing abrasives as they can scratch the surface layer. Mild sonication might assist in removing contaminants, but do not oversonicate—this could damage the surface layer.

Do not use basic solutions with pH>8.

Do not steam clean any Sulfinert-treated system components or lines, as this could damage the surface layer.

Treatment Layer Appearance

The appearance of a Sulfinert-treated surface can vary from lot to lot. Small variations in surface thickness (measured in angstroms) affect layer appearance. The surface finish should be bright and free of defects, but the original surface condition can have a major impact on final surface quality.

Your parts are cleaned after treatment; however, the surface may contain some trace silicon (black particles) as a byproduct of the treatment process. Residual silicon can be removed by rinsing with a solvent or by sonication in water (do not oversonicate).

Galling

Galling can frequently occur, especially on like surfaces, resulting in irreparable damage. Therefore, it is extremely important to follow standard practices and guidelines as stated by ANSI, Swagelok, Parker Hannifin, or another reputable source. The likelihood of galling is increased when using treated components, but the potential for galling is reduced if only one of the mating threads is treated. Thread tape or other anti-galling materials must always be used.

Treatment Layer Troubleshooting

Under normal use, your treated items should deliver outstanding performance for years to come. However, effective lifetime is dependent on the severity of the environment. These factors can impede performance:

Contamination	Failure to properly clean the surface can allow increased surface activity. If performance changes, thoroughly clean the surface and inspect the layer for damage.
Erosion	Contact with abrasives can accelerate surface wear.
Bases	Contact with a base (pH 8 or higher) can accelerate deterioration of the layer.

Surface finish and color should stay consistent throughout the life of the product. Changes in the finish or color may indicate a partial loss of the layer. To prevent further loss, ensure no exposure to bases or abrasives. For additional information, visit **www.restek.com** or contact our technical service department at 814-353-1300, ext. 4.

Questions about this or any other Restek product?
Contact us or your local Restek representative (www.restek.com/contact-us).

www.restek.com

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