



## Product Test Report

**PTR-2873**

Swagelok Company  
29500 Solon Road  
Solon, Ohio 44139 U.S.A.

Ver 02  
November 2022  
Page 1 of 3

### TITLE

Burst Test and Gas Leak Test of Stainless Steel Swagelok® NPT Pipe Fittings

### PRODUCT TESTED

The following stainless steel Swagelok NPT pipe fittings and their mating parts were tested.

Ordering Number	Mating Part Ordering Number	Working Pressure (WP) psig (bar)	1.5 x WP psig (bar)	4 x WP psig (bar)
SS-4-ME	SS-4-CP	8000 (551)	12 000 (826)	32 000 (2204)
SS-4-E	SS-4-P	7200 (496)	10 800 (744)	28 800 (1984)
SS-4-HN	SS-4-CP	8000 (551)	12 000 (826)	32 000 (2204)
SS-8-ME	SS-8-CP	7700 (530)	11 550 (795)	30 800 (2122)
SS-8-E	SS-8-P	5600 (385)	8400 (578)	22 400 (1543)
SS-8-HRN-4	SS-8-CP	8000 (551)	12 000 (826)	32 000 (2204)
SS-12-ME	SS-12-CP	7300 (502)	10 950 (754)	29 200 (2011)
SS-12-E	SS-12-P	5100 (351)	7650 (527)	20 400 (1405)
SS-12-HRN-4	SS-12-CP	8000 (551)	12 000 (826)	32 000 (2204)

### PURPOSE

These assemblies were tested under laboratory conditions to observe the hydraulic pressure and gas leak performance of stainless steel Swagelok NPT pipe fittings made from straight bar stock or forged shapes.

### TEST CONDITIONS

Original test date: May 2013

Ambient laboratory environment

#### Burst Test

System fluid: non-compressible hydraulic oil  
Pressure: max pressure set to 100 000 psig (6890 bar)

#### Gas Leak Test

System gas: nitrogen  
Pressure: working pressure and 1.5 times working pressure



## Product Test Report

PTR-2873

Swagelok Company  
29500 Solon Road  
Solon, Ohio 44139 U.S.A.

Ver 02  
November 2022  
Page 2 of 3

### TEST METHOD

#### Sample Assembly

Each sample was assembled with two wraps of Swagelok PTFE tape and then assembled wrench-tight.

#### Nitrogen Gas Leak Test

1. Non-test ends of the samples were adapted into a manifold.
2. The manifold was submerged in water and attached to the gas chamber.
3. The test samples were pressurized to working pressure with nitrogen gas for at least 10 minutes and monitored for leakage.
4. Samples showing leakage were tightened and then monitored for one minute to verify that the leakage stopped.
5. Steps 3 and 4 were repeated at 1.5 times working pressure.

#### Burst Test

1. The non-test end of the sample was mounted in the burst rig.
2. Ramp rate was set to 2500 psig/s and set point was set to 100 000 psig (6890 bar).
3. The test sample was pressurized with hydraulic oil until burst pressure was obtained. If the test sample did not rupture, the highest pressure attained was considered the burst pressure.

### TEST RESULTS

The results of the burst tests and nitrogen gas leak tests are summarized in the table below.

Ordering Number	Working Pressure (WP) psig (bar)	1.5 x WP psig (bar)	4 x WP psig (bar)	Samples Tested	Burst Test Attained 4 x WP	Nitrogen Gas Leak Attained 1.5 x WP Without Leakage
SS-4-ME	8000 (551)	12 000 (826)	32 000 (2204)	1	Pass	Pass
SS-4-E	7200 (496)	10 800 (744)	28 800 (1984)	1	Pass	Pass
SS-4-HN	8000 (551)	12 000 (826)	32 000 (2204)	1	Pass	Pass
SS-8-ME	7700 (530)	11 550 (795)	30 800 (2122)	1	Pass	Pass
SS-8-E	5600 (385)	8400 (578)	22 400 (1543)	1	Pass	Pass
SS-8-HRN-4	8000 (551)	12 000 (826)	32 000 (2204)	1	Pass	Pass
SS-12-ME	7300 (502)	10 950 (754)	29 200 (2011)	1	Pass	Pass
SS-12-E	5100 (351)	7650 (527)	20 400 (1405)	1	Pass	Pass
SS-12-HRN-4	8000 (551)	12 000 (826)	32 000 (2204)	1	Pass	Pass

**The tests were conducted beyond the product's recommended operating parameters and do not modify the published product ratings.**



## Product Test Report

**PTR-2873**

Swagelok Company  
29500 Solon Road  
Solon, Ohio 44139 U.S.A.

Ver 02  
November 2022  
Page 3 of 3

---

These tests were performed to consider a specific set of conditions and should not be considered valid outside those conditions. Swagelok Company makes no representation or warranties regarding these selected conditions or the results attained. Laboratory tests cannot duplicate the variety of actual operating conditions. Test results are not offered as statistically significant. See the product catalog for technical data.

### **SAFE PRODUCT SELECTION**

When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

Swagelok—TM Swagelok Company