

Alloy 2507 Super Duplex Tube, Pipe, and Weld Fittings

NACE MR0175 Compliant

Introduction

For sour gas applications, gaugeable Alloy 2507 super duplex tube fittings (as described in the Swagelok® catalog *Gaugeable Alloy 2507™ Super Duplex Tube Fittings*, MS-01-174), pipe fittings, and weld fittings (as described in the Swagelok catalog *Alloy 2507 Super Duplex Weld Fittings*, MS-01-173) can be specified by adding the designator **-SG2** to the fitting ordering number. Fittings ordered with the **-SG2** designator meet the requirements of NACE MR0175 / ISO 15156. In accordance with the requirements of this standard, the bodies of tube, weld, and pipe fittings are produced from solution-annealed material.

Materials of Construction, Alloy 2507 Fittings for Sour Gas Service



| Component | Material | ASTM Specification | Marking |
|-----------------|--|---|---|
| 1 Nut | Alloy 2507 super duplex SS, cold-drawn, hardness 40 HRC max | A479 ^① | Notched hex, "Alloy 2507" on face |
| 2 Back ferrule | 6-moly ^① cold-drawn, hardness 35 HRC max | Alloy 254—A276 ^③ ; Alloy AL-6XN [®] —A479 ^④ | "254" or "6XN" on outer rim |
| 3 Front ferrule | <i>Alloy 2507 super duplex SS, cold-drawn, hardness 40 HRC max</i> | A479 ^① | "2507" on outer rim |
| 4 Body | <i>Alloy 2507 super duplex SS, solution-annealed</i> | <i>Straight body—A479 Shaped body—A182</i> | <i>Tube and pipe fittings—"2507" on neck, "SG" on body; Weld fittings—"2507" and "SG" on body</i> |

Wetted components listed in *italics*

① A479 (except hardness)

② Alloy 254—UNS S31254; alloy AL-6XN[®]—UNS N08367

③ Alloy 254—A276 (except hardness, elongation, and area reduction)

④ Alloy AL-6XN—A479 (except hardness and elongation)

NACE Requirements for Super Duplex Tube Fittings

In order for a Swagelok Alloy 2507 tube fitting to function correctly, the nut and ferrules must be made from cold-drawn bar stock. This material has the strength necessary to grip to Alloy 2507 tubing, which has a high surface hardness, and to hold to the high working pressures listed in Swagelok *Tubing Data*, MS-01-107.

Swagelok Alloy 2507 tube fittings whose ordering numbers have the **-SG2** designator meet NACE MR0175 / ISO 15156 requirements for use in any equipment, according to Table A.24 of the standard, if the fittings are wetted internally, but not externally, by sour gas:

- Straight tube fitting bodies are produced from solution-annealed Alloy 2507 bar stock.
- Shaped tube fitting bodies are produced from solution-annealed Alloy 2507 forgings.
- The external threads of a tube fitting body that are not wetted by the system fluid may be produced by thread rolling. Wetted threads are cut.
- Tube fitting nuts are produced from cold-drawn Alloy 2507 bar stock, but are not wetted by the system fluid.
- Back ferrules are produced from cold-drawn 6-moly bar stock, but are not wetted by the system fluid.
- Front ferrules are produced from cold-drawn Alloy 2507 bar stock. The nose of the front ferrule comprises a wetted surface. The nose of the front ferrule is under compression and therefore is not subject to stress corrosion cracking or sour gas cracking as the NACE MR0175 / ISO 15156 standard states that a tensile stress component is required to enable these cracking modes.
- Port connectors and plug inserts are produced from solution-annealed Alloy 2507 bar stock.

NACE Certification

To purchase NACE compliant Alloy 2507 fittings for use in sour gas, add **-SG2** to the ordering number. Upon request, Swagelok can provide certification that includes the NACE statement:

The above fitting(s) meet(s) NACE MR0175 / ISO 15156 (NACE) requirements, according to the following parameters:

1. *Fitting bodies marked **SG** are produced from type Alloy 2507 super duplex solution-annealed material, UNS S32750, and meet the requirements for “any equipment” (Table A.24).*
2. *Some tube fitting components are produced from cold-drawn bar stock and, if wetted externally by sour gas, may not meet the requirements of NACE.*

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.

Caution: Do not mix or interchange parts with those of other manufacturers.

Warranty Information

Swagelok products are backed by The Swagelok Limited Lifetime Warranty. For a copy, visit swagelok.com or contact your authorized Swagelok representative.

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