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UNITED INDUSTRIES



HIGH PURITY STAINLESS STEEL TUBING
Pharmaceutical, Biotech, and
other High Purity Applications



High Purity Pharmaceutical & BPE Tubing

The highest standard of quality for the most demanding applications

United Industries: The Experience to Exceed the Standards

United Industries has supplied stainless steel tubing to the pharmaceutical industry for over 35 years, providing ASTM A270 tubing of exceptional quality that meets or exceeds the strict materials and production requirements of pharmaceutical and biotechnology environments.

Proven Quality, Every Time: ASTM Testing and More

All of our pharmaceutical tubing is tested to meet or exceed ASTM 270/S2 requirements. We also perform flare, flatten, flange, and reverse bend tests. Surface roughness is measured per ASME/ANSI B46.1 requirements. These measurements are derived from four (4) readings taken at cross sections approximately 90 degrees apart.

Finished to Perfection: The Ultimate in Purity, Inside and Out

Our High Purity pharmaceutical tubing meets the rigorous A270-S2 ASME BPE requirements for contaminant and corrosion resistant smooth surfaces.

We Offer:

SF1 (Mechanical Polish) – 20Ra max. (0.5µm) ID, 32Ra max. (0.8µm) OD
SF4 (Electro Polish) – 15Ra max. (0.4µm), 32Ra max. (0.8µm) OD
All mechanical polished tubes meet or exceed A270, A270-S2, ASME BPE.

Ensuring the Best Results: Bright Annealing

United Industries tubing is bright annealed and rapidly quenched to meet ASTM requirements. This process results in improved fabrication, formability, and corrosion resistance.



ISO/TS19649:2009 Registered Quality Management System

Meeting Your Needs: Worldwide Service

We can ship the tubing you need, in stock or custom order, anywhere in the world. Our start-to-finish quality assurance means that you can count on attention to detail from raw materials through packaging and shipment.

Delivering on our Promises: Packaging

All material is end capped and poly sleeved. Tubes are packaged in tri-wall cardboard boxes with wood ends for shipping within the US.

We offer three packaging options for international shipping:

“A” Style – Tubes are packed in tri-wall boxes and shipped in plastic-lined wooden crates.

“D” Style – Tubes are end capped and polysleeved, and packed in a wooden crate lined with plastic and cardboard.

“F” Style – Tubes are individually packed in tri-wall boxes, palletized and securely strapped with steel banding.

Material Certification is shipped with all tubing.

O2 Clean Service Available. Ask your sales representative about this add-on option for complete sanitary cleaning of our A270 tubing.

ASTM Chemical Composition Requirements (Max.)

ELEMENTS	T316L
(C) Carbon, max.	0.030
(Mn) Manganese, max.	2.000
(P) Phosphorus, max.	0.045
(S) Sulphur, A270-S2	0.005-.017
(Si) Silicon, max.	0.750
(Ni) Nickel	10.0-14.0
(Cr) Chromium	16.0-18.0
(Mo) Molybdenum	2.0-3.0

Size Ranges

Diameter:

1/2" (12.70 mm) – 8" (203.20 mm)

Thickness:

1/2" (12.70mm) - 3" (76.20 mm) = 16 gauge = .065" (1.65 mm)

4" (101.6 mm) - 6" (152.4 mm) = 14 gauge = .083 (2.11 mm)

6" (152.4 mm) & 8" (203.2mm) = 12 gauge = .109 (2.77 mm)



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The Standard of Excellence

Why Choose United Industries?

FULL-SERVICE CAPABILITIES

- United Industries offers a broad range of products in a variety of stainless steels.
- We are fully compliant to industry standards including BPE, ASME, and ASTM.

WE TAKE QUALITY ASSURANCE SERIOUSLY

- "To the minute" production traceability.
- ISO/TS16949:2009 Registered Quality Management System (RQMS) standards are applied to all products manufactured by United Industries.
- ISO/TS16949:2009 RQMS standards are aimed at absolute customer satisfaction in addition to ongoing manufacturing process improvements and innovations.

CUSTOMER SERVICE IS PART OF UNITED INDUSTRIES' CULTURE

- Instant Defect Detection.
- Operators are also "Inspectors."
- Inspectors are also "Auditors."
- Customer Satisfaction is our ultimate quality standard.

United Industries Capabilities

COMPLETE APPLICATIONS ENGINEERING AND METALLURGY

TYPES:

- ASTM SA249 Boiler / Heat Exchanger
- ASTM A268 Ferritic
- ASTM A269 General Services
- ASTM A270 Sanitary / Pharmaceutical
- ASTM A554 Ornamental

GRADES:

- Stainless 301 302, 304, 304L, 316, 316L, 309, 309S, 310, 321, 12SR/408CB, 18SR, 18CB/441, 29-4C, 317, 317L
- Stainless 405, 409, 410, 430, 439
- Super Alloys

SIZES:

- 1/2" (12.70 mm) - 8" (203.20 mm) diameter
- .019" (.4826 mm) - .145" (3.683 mm) wall

LENGTHS:

- 1" (25.4 mm) - 60' (18.28 m)

SURFACE FINISH:

- Mechanical Polish 20 Ra / 32 Ra
- Electro Polish 15 Ra / 10 Ra
- Hydrogen Bright Annealing (H-BA)

MAJOR EQUIPMENT:

- Slitting Line
- 6 Laser Mills
- In-line Induction Annealing
- In-line Hydrogen Bright Annealing

PACKAGING:

- Square pack, scored cardboard, tri-wall box, paper/poly sleeve, interleave, interweave, cardboard tubes, hex pack, bulk skids, customer returnables
- Export packaging available

FINISHED INVENTORY:

- Sanitary and H-BA 1" (25.4 mm) - 8" (203.2mm), 304L and 316L

QUALITY ASSURANCE / TESTING:

- | | |
|-----------------------------|-----------------------|
| • Quality Management System | • Bend |
| • In-line Eddy Current | • Flare |
| • Expansion | • Reverse Bend |
| • Flatten | • Flange |
| • Tension | • Surface Roughness |
| • Rockwell | • Surface Passivity |
| • Metallurgical | • Others Upon Request |
| • Dimensional | |

UNITED INDUSTRIES



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