

# **ASTM Chemical Composition Requirements (Max.)**

ELEMENTS	304L	T316L
(C) Carbon, max.	0.030	0.030
(Mn) Manganese, max.	2.000	2.000
(P) Phosphorus, max.	0.045	0.045
(S) Sulphur, max.	0.030	0.030
(S) Sulphur, A270-S2	N/A	0.005017
(Si) Silicon, max.	0.750	0.750
(Ni) Nickel	8.0-12.0	10.0-14.0
(Cr) Chromium	18.0-20.0	16.0-18.0
(Mo) Molybdenum	N/A	2.0-3.0

# **SIZE RANGE:**

1/2" - 8"

#### **MECHANICAL TESTS:**

United Industries performs all required ASTM A270/A1016 testing. In addition, 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.

### **FINISHES:**

Sanitary A270 (3A) TPV Certified: Bright Annealed, ID-only, OD-only, ID & OD. Mechanical Polish = 32 Ra OD, 20 Ra ID.

All mechanical polished tubes meet or exceed A270, 3A, A270-S2, ASME BPE.

#### PACKAGING:

All material is end capped and poly sleeved. Tubes are packaged in tri-wall cardboard boxes with wood ends. Other packaging available upon request.

Material Certification is shipped with all tubing. Material Certification is also available online at www.unitedindustries.com.

ISO/TS16949:2009 Registered Quality Management System



The Standard of Excellence

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# 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 3A, BPE, ASME, and ASTM.

# WE TAKE QUALITY ASSURANCE SERIOUSLY:

- "To the minute" production traceability.
- ISO/TS16949:2002 Registered Quality Management System (RQMS) standards are applied to all products manufactured by United Industries.
- ISO/TS16949:2002 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.

### 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" 8"
- .019" .145" wall

### LENGTHS:

• 1" - 60"

# SURFACE FINISH:

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

## **PLANT FACILITIES:**

- Over 200,000 Sq. Ft. (Beloit, WI and Selmer, TN)
- 7 laser mills
- · Inline induction annealing and H-BA
- Tube cutting facility

### 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"-8", 304L and 316L

# QUALITY ASSURANCE/TESTING:

- Quality Management System
- Inline Eddy Current
- ExpansionFlatten
- Tension
- Rockwell
- Metallurgical
- Dimensional

- Bend
- Flare
- Reverse Bend
- Flange
- Surface Roughness
- Surface Passivity
- Others Upon Request

# ISO/TS16949:2009 Registered Quality Management System



United Industries, Inc.

1546 Henry Avenue Beloit, Wisconsin 53511 Phone: 608-365-8891

Fax: 608-365-1259 www.unitedindustries.com United Stainless, Inc. 95 Lakeview Drive Selmer, Tennessee 38375