

TECHNICAL DATA SHEET

# High Alloy DX

**General notes:**

- » **low carbon high alloy austenitic stainless steel, AISI 904L (UNS N08904)**
- » high-alloy austenitic stainless steel intended for use under severe corrosive conditions within the process industry
- » very good resistance to attacks in acidic environments, e.g. sulphuric, phosphoric and acetic acid
- » very good resistance to pitting in neutral chloride-bearing solutions
- » very good resistance to stress corrosion cracking
- » the grade is non-magnetic (95%) in all conditions and has excellent formability and weldability. The austenitic structure also gives this grade excellent toughness, even down to cryogenic temperatures.
- » its maximum service temperature is at 450°C.

## Composition

Elements	Wt.%	Elements	Wt.%	Elements	Wt.%	Elements	Wt.%	Elements	Wt.%
<b>C</b>	0.02	<b>Mn</b>	2.0	<b>S</b>	0.035	<b>Cr</b>	23.0-19.0	<b>Cu</b>	2.0-1.0
<b>Si</b>	1.0	<b>P</b>	0.045	<b>Ni</b>	28-23	<b>Mo</b>	5.0-4.0	<b>N</b>	0.1

## Mechanical properties

State	<b>annealed</b>
Density	<b>8.0 g/cm<sup>3</sup></b>
Hardness, Vickers	<b>250 HV</b>
Tensile strength, ultimate	<b>490 - 646 MPa</b>
Tensile strength, yield	<b>220 - 339 MPa</b>
Elongation, break	<b>35-40%</b>
Modulus of elasticity	<b>195 GPa</b>

## Thermal properties

Coef. of lin. therm expansion	<b>16.1 E-6/°C</b>	20-100°C
Coef. of lin. therm expansion	<b>16.9 E-6/°C</b>	20-400°C
Specific heat capacity	<b>0.45 J/(g·K)</b>	20°C
Thermal conductivity	<b>12 W/(m·K)</b>	
Max service temperature, air	<b>450°C</b>	

## Electrical properties

Resistivity	<b>1 (Ohm·mm<sup>2</sup>)/m</b>	20°C
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This document contains information based on average values as obtained from the results of laboratory tests and observations made on the material. Ideal-tek SA declines all responsibility from an improper use of the product described in this document.