

# NRX 601

## CONSTRUCTION MATERIALS

### DATASHEET

NRX 601 is an austenitic nickel-chromium alloy (NiCr alloy) for furnace temperatures up to 1250°C (2280°F).

Typical applications for NRX 601 are conveyor belts in carburizing, nitriding or carbon nitriding atmospheres, baskets and trays for heat treatment process.

#### CHEMICAL COMPOSITION

	Cr %	Ni %	Al %	Fe %	minor additions of RE
Nominal composition	23	59	1.4	Bal	present

#### MECHANICAL PROPERTIES

Wire size	Yield strength	Tensile strength	Elongation
∅	R <sub>p0.2</sub>	R <sub>m</sub>	A
mm (in)	MPa (ksi)	MPa (ksi)	%
1.0 (0.04)	330 (48)	700 (102)	30

#### PHYSICAL PROPERTIES

Density g/cm <sup>3</sup> (lb/in <sup>3</sup> )	8.06 (0.291)
Electrical resistivity at 20°C Ω mm <sup>2</sup> /m (Ω circ. mil/ft)	1.21 (728)

#### COEFFICIENT OF THERMAL EXPANSION

Temperature °C (°F)	Thermal Expansion x 10 <sup>-6</sup> /K (10 <sup>-6</sup> /°F)
20 - 1000 (68-1832)	17.8 (9.9)

#### THERMAL CONDUCTIVITY

Temperature °C (°F)	100 (212)
W m <sup>-1</sup> K <sup>-1</sup> (Btu h <sup>-1</sup> ft <sup>-1</sup> °F <sup>-1</sup> )	11.2 (6.5)

#### SPECIFIC HEAT CAPACITY

Temperature °C (°F)	20 (68)
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Temperature °C (°F)	20 (68)
$\text{kJ kg}^{-1} \text{K}^{-1}$ (Btu lb <sup>-1</sup> °F <sup>-1</sup> )	0.45 (0.11)
Melting point °C (°F)	1350 (2462)
Max continuous operating temperature in air °C (°F)	1250 (2282)

Disclaimer: Recommendations are for guidance only, and the suitability of a material for a specific application can be confirmed only when we know the actual service conditions. Continuous development may necessitate changes in technical data without notice. This datasheet is only valid for materials under the trademark Kanthal®.