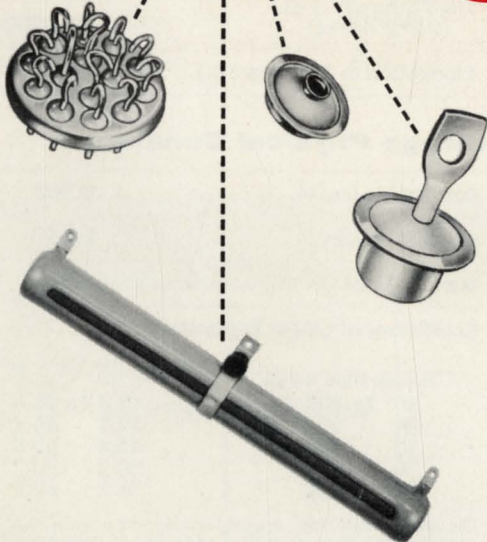


GLASS - T O - M E T A L

RODAR[®]
NIROMET[®] 46
NIRON[®] 52

sealing

alloys



WILBUR B.
DRIVER CO.



*Precision Alloys for
Electronic, Electrical, Chemical
and Mechanical Applications*

WILBUR B. DRIVER
specialized alloys
 FOR GLASS-TO-METAL
 HERMETIC SEALING



**— assure
 permanently-bonded
 vacuum-tight
 seals!**

These specialized precision alloys were developed for sealing metal to glass. Wilbur B. Driver sealing alloys are processed, from melting to finished size, in our own plant to the strictest production standards.

Rigid quality controls insure consistent analysis, temper, uniform grain size and exact conformance to customers' specifications. Superior stamping and sealing properties make them the preferred sealing alloys.

RODAR®

NOMINAL ANALYSIS: 29% NICKEL, 17% COBALT, 0.3% MANGANESE, BALANCE—IRON

Rodar, for sealing metal to hard glass, was developed in response to the demands of the industry for additional materials to meet this specialized requirement. This alloy matches the expansivity of thermal shock resistant glasses, such as Corning 7052 and 7040. Rodar produces a permanent vacuum-tight seal with simple oxidation procedure and resists attack by mercury. It is readily machined and fabricated, and can be welded, soldered or brazed. Available in bar, rod, wire and strip to customers' specifications.

Average Mechanical Properties

Tensile Strength, PSI	150,000 max. 65,000 min.
Yield Strength, PSI (0.2% offset)	50,000 aver.
Elongation in 2 inches (%)	30

Average Physical Constants

Density, lb./cu. in.	0.302
Specific Gravity	8.36
Melting Point °C	1430

Coefficient of Linear Expansion

Temperature Range	Average Thermal Expansion in./in./°C x 10 ⁻⁷
30° To 200°C.	43.3 To 53.0
30 300	44.1 51.7
30 400	45.4 50.8
30 450	50.3 53.7
30 500	57.1 62.1

*As determined from cooling curves, after annealing in hydrogen for one hour at 900° C. and for 15 minutes at 1100° C.

Thermal Conductivity (20°—100°C) cal/sec/sq cm/cm/°C	0.05
Electrical Resistivity (20°C) ohms/cm microhm cm	294 48.9
Magnetic Attraction	Strong
Curie Temperature °C	420

NIROMET® 46

NOMINAL ANALYSIS: 46% NICKEL, BALANCE IRON

A 46% nickel-balance iron alloy with expansion properties between Niron 52 and Rodar. It is used extensively as terminal bands for vitreous enameled resistors.

Average Mechanical Properties

Tensile Strength, PSI	150,000 max. 70,000 min.
Yield Strength, PSI (0.2% offset)	50,000 aver.
Elongation in 2 inches (%)	35

Average Physical Constants

Density, lb./cu. in.	.298
Specific Gravity	8.17
Melting Point °C	1425
Coefficient of Linear Expansion (25°—425°C)	77×10^{-7}
Thermal Conductivity (20°—100°C) cal/sec/sq cm/cm/°C	0.027
Electrical Resistivity (20°C) ohms/cm microhm cm	275 45.7
Magnetic Attraction	Strong
Curie Temperature °C	410

NIRON® 52

NOMINAL ANALYSIS: 51% NICKEL, BALANCE IRON

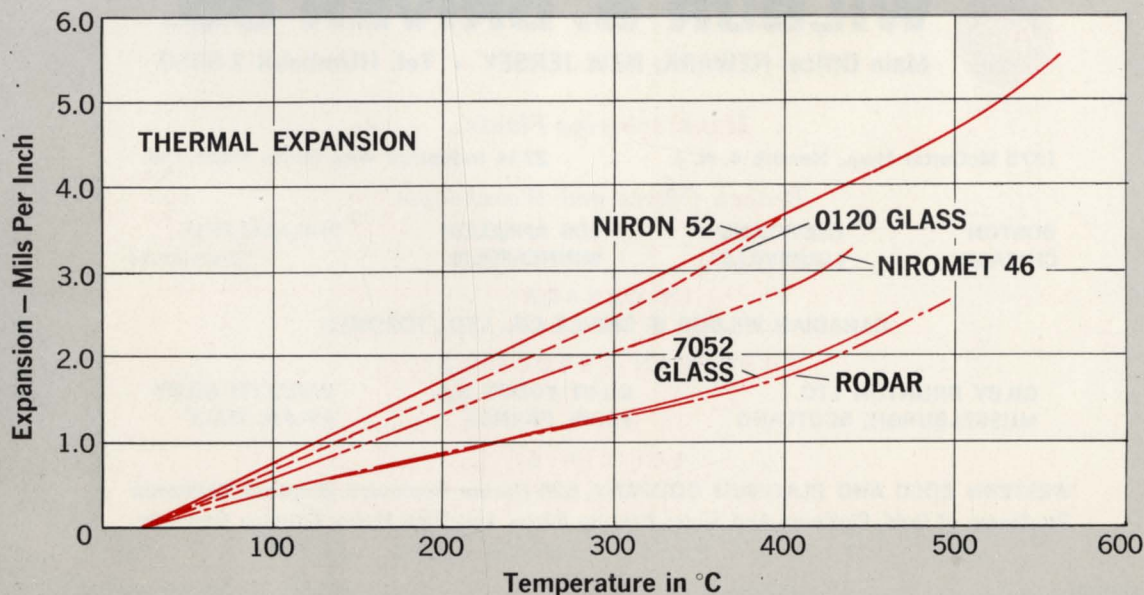
This Wilbur B. Driver nickel iron alloy contains 51% nickel. Niron 52 sealing alloy is exceptionally well adapted, and widely employed, for making seals with 0120 glass.

Average Mechanical Properties

Tensile Strength, PSI	150,000 max. 70,000 min.
Yield Strength, PSI (0.2% offset)	50,000 aver.
Elongation in 2 inches (%)	35

Average Physical Constants

Density, lb./cu. in.	.301
Specific Gravity	8.25
Melting Point °C	1425
Coefficient of Linear Expansion (25°—300°C) (25°—500°C)	97×10^{-7} 98×10^{-7}
Thermal Conductivity (20°—100°C) cal/sec/sq cm/cm/°C	0.0286
Electrical Resistivity (20°C) ohms/cm microhm cm	260 43.2
Magnetic Attraction	Strong
Curie Temperature °C	510



FOR OVER 40 YEARS...

MELTERS AND MANUFACTURERS OF PRECISION

resistance, chemical and mechanical alloys

IN WIRE, ROD, RIBBON, STRIP AND FOIL

Resistance Alloys:

Alchrome®	Balco®	Ballast®
Tophet A®	Tophet® C	Cupron®
Evanohm®	Cromin D®	Manganin
#30 Alloy	#60 Alloy	#90 Alloy
#180 Alloy		

Glass Sealing Alloys:

Rodar®	Niron® 52	Niromet® 46
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Vacuum Tube Materials:

Cobanic®	Mangrid®	Permagrid®
Sylvaloy®	Permocarb®	Cuprochrome®
Magnocarb®	Modified Hilo®	Policarb®
Britecarb®	Duocarb®	Cathode Nickel
Radiocarb®		

Special Spring Alloys:

Beraloy®	Cobenium®	Ni-Span C*
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Corrosion Resisting Alloys:

Nilstain®	Monel*	Inconel*
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*T.M. International Nickel Co.



Custom Alloy Service

Research and production facilities are available to help industry work out special problems requiring custom alloys. This integrated service provides complete development and manufacturing departments and features one of the nation's largest vacuum-melting installations.



WILBUR B. DRIVER CO.

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Manufacturing Plants:

1875 McCarter Hwy., Newark 4, N. J.

2734 Industrial Way, Santa Maria, Cal.

Branch Offices and Warehouses:

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CHICAGO*

CLEVELAND*
LOUISVILLE*

LOS ANGELES*
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