

# Kinetics

A Climax Engineered Materials Company

## MATERIALS & PROPERTIES

### MIM F-15 (Kovar™) as Sintered

Material Properties	MPIF Standard 35	Kinetics
	Typical	Typical
Ultimate Strength (KSI)	67	62
Yield Strength (KSI)	43	40
Elongation (% in 1")	25	30
Surface Finish (Ra)	-	32
Impact Energy (ft-lbf) <sup>1</sup>	-	75
Macro Hardness (HRB)	65	64.1
Sintered Density (g/cm <sup>3</sup> )	7.8	7.85
Avg. CTE (10-6/c RT to 450c)	-	5.1-5.5

<sup>1</sup>Test method uses 1/2 sized un-notched charpy bar.



### Material Description

High nickel, high cobalt iron alloy. A traditional metal-to-glass sealing alloy that offers a low coefficient thermal expansion (CTE) similar to glass. Provides the hermeticity required for firmly bonding between metal and glass. Frequently used for hermetic enclosures or packages used to protect electronic or optical devices in aerospace, automotive, optical, optoelectronic and telecommunications industries.

### Nominal Material Composition

Fe	Ni	Co	Mn (max)	Si (max)	C (max)	Al (max)	Mg (max)	Zr (max)	Ti (max)	Cu (max)	Cr (max)	Mo (max)
Balance	29	17	0.5	0.2	0.04	0.1	0.1	0.1	0.1	0.2	0.2	0.2

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This information is subject to change with internal research and development