

ALLOY Mo-Ti

Technical Datasheet

Code	ALLOY Mo-Ti	Chemical Composition (Reference values %)	Ti 0,5	Zr 0,08	C 0,03	Mo balance
Material-Properties	High melting point, higher high-temperature strength in comparison with pure Molybdenum, low thermal extension, good thermal conductivity and chemical resistance.					
Applications	<ul style="list-style-type: none">• Trays in continuous heating furnaces• Sinter boats• Hot-runner tips in plastic injection nozzles• Vacuum furnace heating elements• Electrodes for RP welding of copper sheets					
Mechanical Properties (Reference values)	Hardness	HV	200 – 250			
	c. 85 % reduced	N/mm²	800 – 1.000			
	Yield strength	N/mm²	750 – 900			
	Elongation L = 5 D	%	6 – 10			
	Modulus of elasticity 293 K (20 °C)	kN/mm²	300			
Physical Properties	Electrical conductivity 293 K (20 °C)	MS/m	c. 15			
	Electrical resistance 293 K (20 °C)	$\frac{\Omega \text{ mm}^2}{\text{m}}$	c. 0,06			
	Coefficient of electrical resistance	$\frac{1}{\text{K}}$	c. 0,0046			
	Coefficient of thermal expansion 273-573 K (0-300°C)	$\frac{1}{\text{K}}$	5,3 – 5,7 10 ⁻⁶			
	Specific heat	$\frac{\text{W}}{\text{m K}}$	0,25			
	Thermal conductivity 293 K (20 °C)	$\frac{\text{J}}{\text{g K}}$	c. 130			
	Density	$\frac{\text{g}}{\text{cm}^3}$	10,2			
Available sizes	Wire, bars, sheets, machined parts against drawing					
Tensile strength properties depend on cross-section and design.						

RS Acciai Srl

UFFICI: Via dello Stagnaccio Basso, 46/a
MAGAZZINO: Viuzzo di Porto, 61
50010 SCANDICCI - FIRENZE
Tel +39 055 7318818
Fax +39 055 7311083

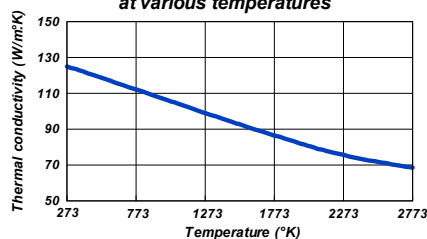
Web: www.rsalloys.eu

e-mail: rsalloys@rsalloys.eu

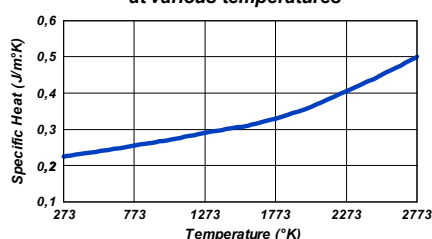
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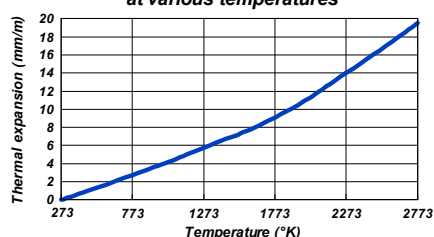
**Thermal conductivity of Mo-Ti
at various temperatures**



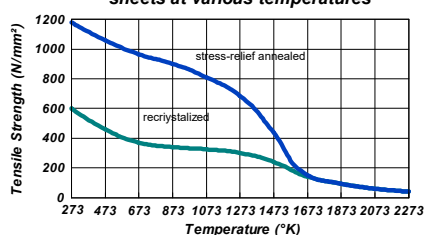
**Specific heat of Mo-Ti
at various temperatures**



**Thermal expansion of Mo-Ti
at various temperatures**



**Tensile strength at 1 mm thickness Mo-Ti
sheets at various temperatures**



Machining Instructions (Reference values)

Turning

	Tungsten Carbide ISO K 05	HSS 1. 3202
Feed	70 – 120	30 – 40
Rake angle	c. 20°	c. 20°
Feed and depth of cut	-	-
Clearance angle	7 – 10°	7 – 10°

Milling

	Tungsten Carbide ISO K10 or ISO K05	HSS 1. 3202
Feed	80 – 120	20 – 25

Drilling

	Tungsten Carbide ISO K10 or ISO K05	HSS 1. 3202
Feed	mm/min.	-
Cutting speed	m/min.	10 -15

All statements as to the properties or utilization mentioned in this datasheet are only for the purpose of description. Guarantees in respect of the existence of certain properties or utilization at the material mentioned are only valid if agreed upon in writing.

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