



## High Temperature Furnance Products

QSIL offers nearly 100 years of experience with a trusted supply chain of superior refractory pure and alloyed materials for heat treating medical, aerospace, defense and automotive products.

### Materials

- > Molybdenum
- > Tungsten
- > Tantalum
- > Niobium
- > TZM
- > MHC
- > MoLa (molybdenum-lanthanum)
- > MoW (molybdenum-tungsten)

### Applications

- > Annealing
- > Brazing
- > Heat Treating
- > HIPing
- > Melting
- > Pre-heating for Metalworking
- > Powder Processing
- > Sintering
- > Tempering
- > MIM (Sintering/Debonding)

### Forms Available

- > Furnace Assemblies
- > Boats & Trays
- > Furnace Racks
- > Flat Ribbed Heating Elements
- > Hot Zones
- > Heat Shields
- > Rolled and Bent Formed Product
- > Brackets and Furnace Fixture

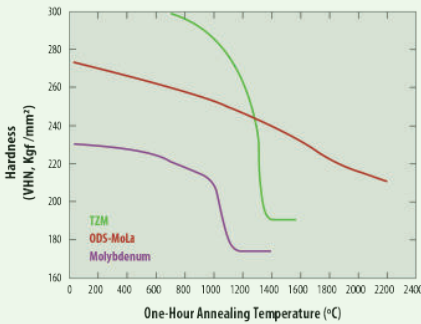
### Furnaces Served

- > High temperature furnaces in vacuum, reducing or inert atmospheres
- > Chemical reaction furnaces in vacuum, air, or various atmospheres

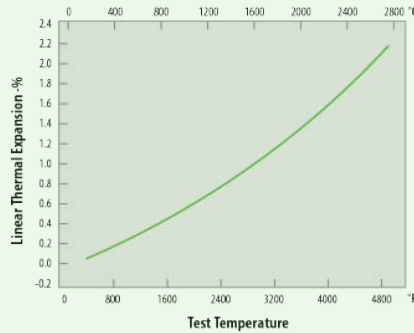


# Superior Mechanical Properties with Molybdenum Alloys

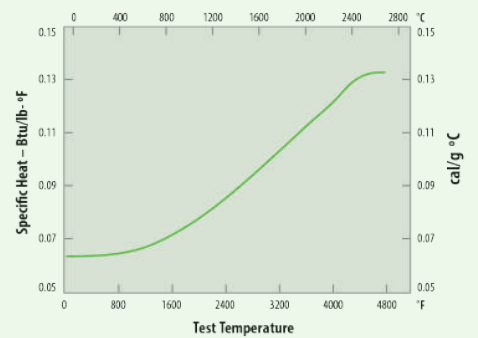
**HARDNESS VERSUS ANNEAL TEMPERATURE**



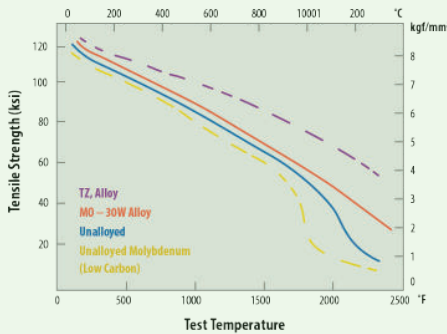
**THERMAL EXPANSION VERSUS TEMPERATURE**



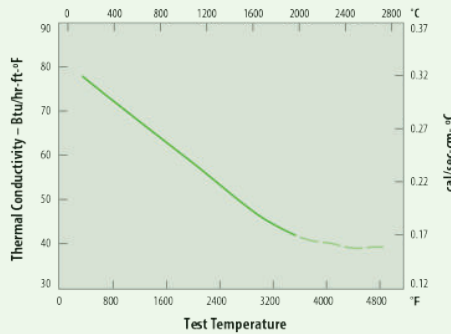
**SPECIFIC HEAT VERSUS TEMPERATURE**



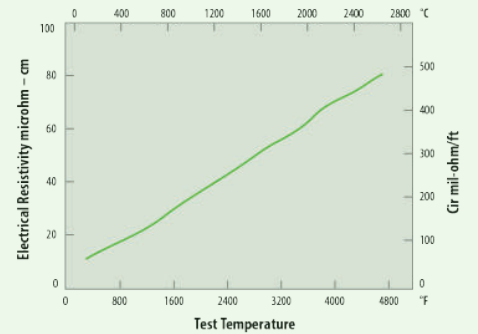
**TENSILE STRENGTH VERSUS TEMPERATURE**



**THERMAL CONDUCTIVITY VERSUS TEMPERATURE**



**ELECTRICAL RESISTIVITY VERSUS TEMPERATURE**



Typical Tensile Properties for indicated Products (5/8 inch Diameter bars)

High melting temperature refractory, lower cost than Tungsten, creep resistance, and high temperature mechanical properties.

The conditions of your use and application of our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis at least must include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by QSIL Metals Hermsdorf. All information is given without warranty or guarantee. It is expressly understood and agreed that the customer assumes and hereby expressly releases QSIL Metals Hermsdorf from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorized and shall not bind QSIL Metals Hermsdorf. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent. Properties of the products referred to herein shall as general rule not be classed as information on the properties of the item for sale. In case of order please refer to issue number of the respective product data sheet. All deliveries are based on the latest issue of the product data sheet and the latest version of our General Conditions of Sale and Delivery. The values in this publication are typical values and do not constitute a specification.

For additional information please contact:

**QSIL Metals Hermsdorf GmbH**

Robert-Friese-Straße 4 | 07629 Hermsdorf / Germany

Tel. +49 36601 922 0 | Email: [info@qsil.com](mailto:info@qsil.com) | [www.qsil-metals.com](http://www.qsil-metals.com)

