



## MOLYBDENUM POWDER METALLURGY PRODUCTS

# Molybdenum Titanium P/M-MoTi Powder Metallurgy Plate

This specification covers HIP Molybdenum / Titanium Alloy Plates for sputtering applications.

### CHEMICAL CHARACTERISTICS<sup>1</sup>

(Mass fraction in %)

The chemical composition of the molybdenum blended powder used for producing sheet bar shall conform to the following limits (inquire for other specific concentration):

Mo	Balance
Ti	33.8 ± 0.4 wt%
Al	< 0.01 %
Cr	< 0.01 %
Cu	< 0.01 %
Fe	< 0.03 %
Ni	< 0.015 %
C	< 0.015 %
O	< 0.2 %

### DENSITY

≥ 7.1 g/cm<sup>3</sup>

### STRUCTURE

Material will be supplied with a multiphase HIP structure unless otherwise specified and agreed upon between the customer and Elmet Technologies.

### DIMENSIONAL TOLERANCES

Tolerances as agreed upon at the acceptance of the order. The deviation from flatness will be determined by a straight edge across the plate and measuring the gap between the bottom of the straight edge and the plate with a taper gauge. The flatness tolerance will be agreed upon at the time of the order.

<sup>1</sup> Information on testing methods on request. <sup>2</sup> SCOTT VOLUMETER per ASTM B 329.

## **BOND SURFACE**

Machined surface will be free from cracks, embedded contamination, pits, voids, stains, abrasions, and discolorations that are detectable with an unaided eye, machined to ∇∇ surface finish.

## **SPUTTER SURFACE**

Ground surface is free from cracks, embedded contamination, pits, voids, stains, abrasions, and discolorations that are detectable with an unaided eye. Surface finish shall be ground to ∇∇ finish.

## **IDENTIFICATION**

The material will be identified with appropriate billet ID and plate number. Shipping containers will be marked with the name of the customer and the purchase order number.

## **PACKAGING**

The molybdenum titanium plate shall be packed for shipment in accordance to customer requirements. Specifically, the molybdenum titanium plate shall be packaged in a properly labeled sturdy wood outer container closed with metal banding and fasteners. The product will be packaged in a manner to ensure protection from the environment and handling damage during transit.

## **LABELING**

Labeling shall include:

Shipped from

Shipped to

MSDS

Gross wt

Net wt

Shop Order Number

Purchase Order Number

Box size

Pre-cautionary Labels (e.g. Do Not Stack)

## **CERTIFICATION**

Certification includes:

Identification (individual ingot number, sales order number)

Chemistry

Dimensions

Weight

**Hazards identification in Advertising (REGULATION (EC) No 1272/2008 Article 48) none.**

## **REJECTION**

Elmet Technologies must receive written notification of rejected material with the reason for rejection. The right is reserved to inspect rejected material at customer plant for claim validation. The material may be returned only after proper authorization.



### **ELMET TECHNOLOGIES**

1560 Lisbon Street • Lewiston, Maine 04240

P +1.207.333.6100

sales@elmettech.com

www.elmettechnologies.com

The conditions of your use and application of Elmet Technologies products, technical assistance, and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, is your responsibility. Therefore, you are encouraged to test our products and review any technical assistance and/or information you may receive from Elmet Technologies with your own resources, and determine to your own satisfaction whether Elmet Technologies products are suitable for your intended uses and applications. This application-specific analysis should include at minimum testing to determine suitability for the intended use from a technical as well as health, safety, and environmental standpoint. Any technical assistance and/or information provided by Elmet Technologies is given without any express or implied warranty or guarantee. You agree and understand and hereby expressly release Elmet Technologies from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and/or information, except as may be contained otherwise in a written agreement between you and Elmet Technologies. Any statement or recommendation not contained herein or in a written agreement between you and Elmet Technologies is unauthorized and shall not bind Elmet Technologies. Nothing herein shall be construed as a recommendation to use any Elmet Technologies products in a manner violative of the intellectual property rights of any third party. No license is implied or granted under or to Elmet Technologies intellectual property. All product deliveries are based on the then current product specification and Elmet Technologies' Conditions of Sale. IN NO EVENT WILL ELMET TECHNOLOGIES BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.