

Refractory Metals for Accelerator Technology



A Step ahead in Technology.

PLANSEE



„A step ahead in technology“ is not just a commitment to develop new solutions, provide in-depth expert advice, and deliver premium-quality products and components; it also conveys more than 85 years of innovation in refractory metals such as molybdenum, tungsten, tantalum, niobium and their alloys in leading-edge technologies.

PLANSEE metals and products are used for critical components in a variety of industries. Outstanding physical and thermal properties make tungsten, niobium, tantalum and their alloys ideal materials for accelerators significantly contributing to the success of the latest developments in this field.

Tungsten / Tungsten Alloys	Niobium / Niobium Alloys	Tantalum / Tantalum Alloys
<ul style="list-style-type: none"> - High density - High melting point - High strength - High absorption efficiency for X-rays and gamma rays - Machinability (especially good for W-alloys DENSIMET® and INERMET®) 	<ul style="list-style-type: none"> - High melting point - Good cold ductility - Excellent corrosion resistance - High purity (RRR-grade) 	<ul style="list-style-type: none"> - High density - High melting point - Good cold ductility - Excellent corrosion resistance

Advantages of selected PLANSEE metals

PLANSEE is consistently working on optimising materials and meeting new mechanical, chemical and physical demands arising from the needs of our customers. For more detailed material specifications please refer to our material brochures or contact your local sales partner. Information is also available at www.plansee.com or info@plansee.com

High performance components for accelerators

PLANSEE develops high performance products for leading accelerator centres in the world and is qualified with Nb RRR for the XFEL project at DESY/Germany. Our product portfolio for accelerators includes a wide variety of products from semi-finished materials to very complex components such as:



- Semi-finished products in different geometries and sizes
- RF cavity components and supporting parts
- Calorimeter parts, targets and shieldings
- Metal shieldings and heating elements for UHP/UHV heat treatment furnaces

Customized product solutions

In close cooperation with leading partners highly experienced PLANSEE engineers continually develop new solutions for key accelerator components. Based on our material and technological capabilities combined with extensive application know-how we fully support individual designs according to customers requirements. Our clients benefit from our ability to develop prototype designs as well as series production of complete assemblies within short lead times.

Advanced production processes for maximum quality

The specific properties of refractory metals require broad experience not only in product development, but also in manufacturing and assembling such materials. Our production is based on leading edge technologies that have been developed in-house to an essential core competence based on decades of research and development.

- **Forming:** PLANSEE applies highly specialised forming technologies perfectly adjusted to the exceptional characteristics of our materials, such as high temperature strength, hardness and flow properties.
- **Machining:** Conventional machining techniques, such as turning, milling, drilling and grinding, have been developed further at PLANSEE for the special machining of high performance materials. All procedures are optimised with regard to the requested material and product qualities.
- **Joining and coating:** PLANSEE joining and coating technologies support our extensive range of material applications.

Delivery program for semi-finished products

Material	Sheets / ribbons (thickness)	Rods (Ø)	Wires (Ø)	Tubes	
				OD (Ø)	Wall thickness
Ta / Nb	0.015 - 20 mm	0,5 - 150 mm	0.05 - 3 mm	2 - 52 mm	0.25 - 4 mm
W	0.02 - 20 mm	0.5 - 90 mm	0.3 - 1.50 mm	-	-
DENSIMET® / INERMET®	on request	6 - 62 mm	on request	-	on request
other dimensions and materials on request					

Mr. Sozhan.C – Regional Manager,
PLANSEE SE, 503 A wing, Mittal Tower, MG Road,
Bangalore – 560001.
Ph:080-25323338.
E-mail:sozhan@plansee.co.in
www.plansee.com

Mr. Wolfgang Simader – Head MU Material
Technologies,
PLANSEE Metall GmbH., 6600 Reutte, Austria.
Ph:00435672600-2274.
E-mail:wolfgang.simader@plansee.com
www.plansee.com

A Step ahead in Technology.

PLANSEE

We reserve the right to make technical changes for improvement of the product.

7001611 - 894 TI E 11.07 (1,000) AP