

## PURE TUNGSTEN METAL POWDER MATERIAL DATA SHEET

Elmet Technologies manufactures high quality tungsten metal powders for use in mill products, tungsten heavy alloys, electrical contacts, electrodes, transducers, sputtering targets, tungsten-polymer compounds, and metal injection molded products.

### TYPICAL PHYSICAL PROPERTIES AND OXYGEN CONTENTS

Grade	UX 1.5	UX 3	UX 5
FSSS particle size, as-supplied	1.1 – 1.7	2.5 – 3.5	4.5 – 5.5
Scott density, g/in <sup>3</sup>	30 – 45	55 – 70	58 – 70
Tap density, g/cm <sup>3</sup>	4.0 – 4.5	5.5 – 7.0	5.5 – 7.5
Screen size	-150 mesh	-150 mesh	-150 mesh
Oxygen content, wt. %	0.08	0.04	0.02

Particle size distribution by laser scattering is available on request.

### CHEMICAL COMPOSITION EXCLUDING GASES

W	≥ 99.95 wt%	K	≤ 100 ppm
Al	≤ 20 ppm	Mo	≤ 50 ppm
Cr	≤ 20 ppm	Na	≤ 20 ppm
Cu	≤ 10 ppm	Ni	≤ 40 ppm
Fe	≤ 50 ppm	Si	≤ 20 ppm

All other metallic elements are contained at ≤ 20 ppm.

The chemical and physical properties for each production lot are determined by using commercially accepted methods and are reported to the customer on a Certificate of Analysis. All material is packed in polyethylene bags inside of 3.5 gallon pails (up to 50 kg per container). Alternative packaging is available.

All products comply with: DFAR 252.225-7001 Buy American Act; DFAR 252.225-7009 Specialty Metals. All products are compliant with EU RoHS Directive 2015/863 and with Regulation (EC) No. 1907/2006 of The European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH). Mercury or mercury-containing compounds were not intentionally added or came in direct contact with hardware or supplies furnished under this purchase order. Pursuant to Section 1502 ("the Provision") of the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Act") (Pub. L. 111-203, 124 Stat. 1376, July 21, 2010), also referred to as the "Conflict Minerals Act", Elmet Technologies only purchases "DRC conflict-free" minerals from smelters on the Conflict-Free Smelter Program (CFSP) Compliant Smelter list. Material free from radiation contamination. The liability of Elmet Technologies LLC is limited to the cost of the materials in question.