ESTIMATION OF CRITICAL POINT PARAMETERS OF TUNGSTEN AND COPPER FROM EXPERIMENTS ON ISENTROPIC EXPANSION OF SHOCK-COMPRESSED POROUS METALS

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Experimental data on thermodynamic properties of expanded metals by the isentropic expansion of shock-compressed porous tungsten and copper are presented. The metals reached the near-critical region of the liquidvapor phase transition at the expansion. High temperatures at the expansion of shock-compressed porous tungsten into two-phase liquid-vapor regions was recorded. This led to the conclusion that local overheating is accompanied by shock compression. That is, there is uneven heating of the shock-compressed porous metal after shock-compressed and expansion. This can introduce errors at the estimation of the critical point parameters obtained from experiments on isentropic expansion of shockcompressed porous samples. The critical point parameters of tungsten and copper were estimated.