

Abstract Submitted  
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**Shock-recovery studies on InSb single crystals up to 24 GPa** HIROAKI KISHIMURA, HITOSHI MATSUMOTO, Department of Materials Science and Engineering, National Defense Academy — A series of shock-recovery experiments on InSb single crystals along the (100) or (111)-axis up to 24 GPa were performed using a flyer plate impact. The structures of recovered samples were characterized by X-ray diffraction (XRD) analysis. According to calculated peak pressures and temperatures, and phase diagram for InSb, the sample could undergo phase transitions from zinc-blende structure to high-pressure phases. However, the XRD trace of each sample revealed the absence of additional constituents including metastable phases and high-pressure phases of InSb except for 15 and 16 GPa. The XRD trace of each sample corresponded to powder pattern of InSb with zinc-blende structure. At 16 GPa, in addition to zinc-blende structure, additional peaks were obtained. One of these peaks may correspond to the *Cmcm* or *Immm* phase of InSb, and the other peaks were not identified.

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