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TITLE: (15) Experimental investigation of kinetic correspondence in the development of super-ductility in metastable eutectics

SOURCE: (15) Akademiya nauk Kazakhskoy SSR. Institut metallurgii i obogashcheniya. Trudy. v. 5, 1962, Tsvetnaya metallurgiya, 184 - 185

TEXT: The investigation was made with metastable specimens of lead-tin eutectics on a special machine designed by V. Ya. Shtraus operating with tension velocities as high as 1.25; 4; 20; 78; 504; and 960 mm/min. The tests were carried out at 20, 40, 65, 90, 115, 140, 155, 165 and 180°C. Maximum indices of super-ductility attaining 425%, are obtained at 4 mm/min tension velocity. Elongation approaching this value takes place at 20 mm/min. At all the other, higher or lower, velocities, ductility indices do not exceed 250%. At 960 mm/min tension velocity, maximum elongation is not over 85%. The ductility maximum varies with temperature. At 1.25 mm/min tension velocity, it is located at about 175°C. At a higher deformation speed (up to 4 mm/min) the

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Experimental investigation of...

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ductility maximum is attained at 155°C. The results obtained show that in the tension of metastable cast eutectics, highest indices of super-ductility are revealed at a particularly favorable kinetic correspondence of deformation and stabilization processes; they decrease when this correspondence is eliminated. There is 1 figure.

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