Grain boundary sliding in experimental deformation of Octachloropropane

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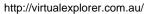


Abstract: Grain boundary sliding is an important deformation process not only in diffusion creep but also in dislocation creep. The details of grain boundary sliding and associated accommodation mechanisms are discussed in experimentally deformed octachloropropane at a high homologous temperature. Grains unsuitably oriented for basal slip tend to deform by grain boundary sliding. Grain boundary sliding is accommodated mainly by grain boundary diffusion and intracrystalline plastic deformation. With grain boundary sliding, openings develop preferentially along grain boundaries at a low angle to the shortening direction, maintaining a steady openings ratio of 0.5-3% of the sample volume without the development of any large-scale fracture. The preferred orientation of remnants of grain boundary openings is the best evidence of grain boundary sliding.



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Editor's Note

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