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Precipitation behavior of sigma phase in 304 and 430 stainless steels as hot-rolled at 800°C[1] CHIH-CHUN HSIEH[2], Department of Materials Engineering, National Chung Hsing University, DONG-YIH LIN[3], Department of Materials Science and Engineering, I-Shou University, WEITE WU[4], Department of Materials Engineering, National Chung Hsing University — The effect of various reduction ratios on the precipitation of sigma phase in 304 and 430 stainless steels as hot-rolled at 800^{o}C have been investigated in this study. The sigma phase showed a dendrite –like morphology in the as received materials. A hot rolling process changed the morphology of sigma phase from dendrite-like to globular, especially at higher reduction ratio. The amounts of sigma phase in the stainless steels increased gradually at 800°C with the increasing the reduction ratios from 0 to 75%. The XRD analyses showed that a higher reduction ratio also enhanced the conversion of the delta (110) to sigma (542).

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