

PENELITIAN KARBIDA DALAM BAHAN BAJA TAHAN KARAT AUSTENITIK TIPE 304.

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ABSTRAK

PENELITIAN KARBIDA DALAM BAJA TAHAN KARAT AUSTENITIK TIPE 304. Presipitat karbida kromium dalam baja tahan karat austenitik tipe 304 yang *diaging* pada suhu 650 °C telah diteliti. Karakterisasi dilakukan dengan menggunakan beberapa teknik peralatan seperti Mikroskop Optik (MO), SEM-EDAX dan TEM. Hasil identifikasi cuplikan dengan teknik peralatan tersebut menunjukkan bahwa karbida diendapkan pada bidang batas butir dan matrik. Kandungan kromium di dalam batas butir cuplikan tipe 304 asli adalah 17,27 % berat. Kandungan kromium meningkat hingga menjadi 25 % berat dalam karbida yang diendapkan pada batas butir dari tipe 304 yang *diaging* pada suhu 650 °C. Harga tetapan kisi rata-rata diperoleh 10,61 Å, yang merupakan presipitat karbida kromium dengan ikatan $M_{23}C_6$ atau $(Cr, Fe)_{23}C_6$. Karbida kromium meningkat dan tumbuh dengan kenaikan waktu *aging*.

ABSTRACT

INVESTIGATION OF CARBIDES IN AUSTENITIC STAINLESS TYPE 304. The chromium carbides precipitate of aged stainless steels type 304 at 650 °C was investigated. The characterization was carried out by means of various techniques such as optical microscope (OM), SEM-EDAX, and TEM. The identification results in sample by those techniques showed that carbides was precipitated at the grain boundaries and matrix. The chromium content at the grain boundaries of as-received materials type 304 is 12,27 wt %, and it increased up to 25 wt % at the grain boundaries of aged type 304 at 650 °C. Average lattice constant was obtained of 10,61 Å. It is carbides chromium precipitate $M_{23}C_6$ or $(Cr, Fe)_{23}C_6$. The chromium carbides precipitate increased and grown with increasing aging time.

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