

ABSTRACT

Nowadays, the kitchen knife manufacturing industry is growing quite rapidly. Although currently factory-produced kitchen knives are widely sold in the market, but this does not reduce the existence of kitchen knives produced by blacksmiths because they are better in terms of sharpness and durability (Wildhania, 2017) but kitchen knives produced by blacksmiths do have some shortcomings such as they often experience cracked or broken. So it is necessary to research on the blacksmith's kitchen knives.

The specimen material obtained from UD. Pandai Besi Yogyakarta is then prepared for the chemical composition testing process, microstructure testing and hardness testing. The testing process was carried out in the Material Engineering laboratory of the Mechanical Engineering Department, Vocational School, Gadjah Mada University.

After testing the chemical composition of the kitchen knife material of UD Pandai Besi Yogyakarta by using a spectrometer there are 17 elements, which are dominated by (Fe), (C), and (Mn). This alloy is categorized into nonresulfurized carbon steel with serial number SAE-AISI 1070 and is dominated by a hard and brittle martensite structure.

Keywords : the kitchen knife , the chemical composition , microstructure testing

INTISARI

Dimasa kini Industri pembuatan pisau dapur berkembang cukup pesat. Meskipun saat ini pisau dapur hasil produksi pabrik banyak dijual dipasaran tetapi tidak menurunkan eksistensi pisau dapur yang diproduksi oleh pandai besi karena lebih baik dari segi ketajaman dan ketahanan (Wildhania, 2017) akan tetapi pisau dapur hasil produksi pandai besi memang memiliki beberapa kekurangan seperti sering mengalami retak atau patah. Sehingga perlu penelitian tentang pisau dapur hasil pandai besi.

Material benda uji yang diperoleh dari UD . Pandai Besi Yogyakarta kemudian dipersiapkan untuk dilakukan proses pengujian komposisi kimia, pengujian struktur mikro dan pengujian kekerasan. Proses pengujian dilakukan di laboratorium Bahan Teknik Departemen Teknik Mesin Sekolah Vokasi Universitas Gadjah Mada.

Setelah dilakukan pengujian komposisi kimia material pisau dapur produk UD. Pandai Besi Yogyakarta dengan menggunakan alat *spectrometer* terdapat 17 unsur, yang didominasi oleh (Fe), (C), dan (Mn). Paduan ini di katagorikan kedalam baja karbon *nonresulfurized* dengan nomor seri SAE-AISI 1070 dan didominasi struktur martensit yang bersifat keras dan getas.