

Cleaning metal parts contaminated with metal oxides using a supercritical carbon dioxide cleaning process

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Supercritical fluid cleaning of metal parts contaminated with metal oxides has been studied. A new technique based on the use of supercritical carbon dioxide has been developed. Various kinds of metal oxides (Cu, Al, Fe, Ni, W) were selected as the contaminants on metal parts. Appropriated co-solvent and surfactant were added to the supercritical carbon dioxide process in order to increase the total removal efficiency. A microscope, XPS and contact angle meter were used to analyze the surface of metal parts. When co-solvent and surfactant were added to the carbon dioxide, the removal efficiency of metal oxides improved significantly.