

Accepted Manuscript

A comparative investigation of the corrosion and tribocorrosion behaviour of nitrocarburized, gas nitrided, fluidized-bed nitrided, and plasma nitrided plastic mould steel



E. Boztepe, A.C. Alves, E. Ariza, L.A. Rocha, N. Cansever, F. Toptan

PII: S0257-8972(17)31179-9
DOI: doi:[10.1016/j.surfcoat.2017.11.033](https://doi.org/10.1016/j.surfcoat.2017.11.033)
Reference: SCT 22881
To appear in: *Surface & Coatings Technology*
Received date: 11 July 2017
Revised date: 23 October 2017
Accepted date: 14 November 2017

Please cite this article as: E. Boztepe, A.C. Alves, E. Ariza, L.A. Rocha, N. Cansever, F. Toptan , A comparative investigation of the corrosion and tribocorrosion behaviour of nitrocarburized, gas nitrided, fluidized-bed nitrided, and plasma nitrided plastic mould steel. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Sct(2017), doi:[10.1016/j.surfcoat.2017.11.033](https://doi.org/10.1016/j.surfcoat.2017.11.033)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

A comparative investigation of the corrosion and tribocorrosion behaviour of nitrocarburized, gas nitrided, fluidized-bed nitrided, and plasma nitrided plastic mould steel

E. Boztepe^a, A.C. Alves^{b (*)}, E. Ariza^{b,c}, L.A. Rocha^{b,d,e}, N. Cansever^a, F. Toptan^{b,e,f}

^a Yildiz Technical University, Department of Metallurgical and Materials Engineering, Faculty of Chemistry & Metallurgy, Davutpasa Campus, 34210 Esenler, Istanbul, Turkey

^b CMEMS-UMinho - Center for MicroElectroMechanical Systems, Universidade do Minho, Azurém, 4800-058 Guimarães, Portugal

^c Universidade do Minho, SEMAT/UM, Azurém, 4800-058 Guimarães, Portugal

^d UNESP—Univ. Estadual Paulista, Faculdade de Ciências de Bauru, Dep. Física, 17033-360 Bauru, SP, Brazil

^e IBTN/Br – Brazilian Branch of the Institute of Biomaterials, Tribocorrosion and Nanomedicine, Bauru, SP, Brazil

^f Universidade do Minho, Dept. Eng. Mecânica, Azurém, 4800-058 Guimarães, Portugal

(*) Corresponding Author: CMEMS-UMinho - Center for MicroElectroMechanical Systems, Universidade do Minho, Departamento de Engenharia Mecânica, Azurém, 4800-058 Guimarães, Portugal, Tlf +351 253 510 220, Fax +351 253 516 007

Abstract

The present study aims to compare the corrosion and tribocorrosion behaviour of nitrocarburized, gas-nitrided, fluidized-bed nitrided, and plasma-nitrided Impax Supreme (equivalent to AISI P20) pre-hardened plastic mould steel. Corrosion behaviour was investigated by electrochemical impedance spectroscopy and potentiodynamic polarization in 3.5 wt. % NaCl solution. Tribocorrosion tests were performed in the same solution under open circuit potential during sliding against 10 mm alumina balls. Results showed that plasma-nitrided samples presented better corrosion behaviour in terms of tendency to corrosion,

Download English Version:

<https://daneshyari.com/en/article/8024501>

Download Persian Version:

<https://daneshyari.com/article/8024501>

[Daneshyari.com](https://daneshyari.com)