



WELDING FUME TEST RESULTS ON Epox Z Kote®

INTRODUCTION

An industrial hygiene evaluation was conducted for Atlas Tube which included a review of potential hazards and air monitoring associated with the use of Epox Z Kote®. The purpose of the evaluation was to determine potential exposures to air contaminants that might be generated when welding on steel coated with Epox Z Kote®. A review of the Material Safety Data Sheet (MSDS) for Epox Z Kote® indicated the potential for various aldehydes and carbon monoxide to be generated. Both personal samples, on the welder as well as area samples adjacent to the welding were obtained and analyzed for eighteen (18) aldehydes. Carbon monoxide was also evaluated. The evaluation was performed from January 21 to 23, 2008, under the supervision of a Certified Industrial Hygienist (CIH) and Certified Safety Professional (CSP).

METHODOLOGY

The airborne aldehyde air monitoring samples were collected utilizing pre-calibrated and post-calibrated MSA Flow-Lite™ low volume pumps calibrated to a nominal flow rate of 0.1 liters per minute. Airborne aldehyde contaminants were captured on SGD Silica Gel Treated with DNPH Reagent tubes. The personal samples were positioned in the workers breathing zone as welding activities were performed. These air

samples were analyzed by an American Industrial Hygiene Association (AIHA) accredited laboratory, according to modified EPA IP-6 High Pressure Liquid Chromatography.

Area carbon monoxide monitoring was performed using a KD Engineering AirBoxx Indoor Air Quality Monitor. These results were further validated using Gastec carbon monoxide detector tubes with a measuring range of 5-50 parts per million (ppm). Both of these methods are consistent with sampling and analytical methods used by the Occupational Safety and Health Administration (OSHA).



SUMMARY

All eighteen (18) aldehydes evaluated were magnitudes less than the OSHA, Permissible Exposure Limits (PEL) or recommended guidelines during the welding on Epox Z Kote® coated steel. Carbon monoxide results were consistent with background levels during the welding period and less than the OSHA, Permissible Exposure Limits (PEL). It is the professional opinion of the Certified Industrial Hygienist (CIH) that welding on steel treated with Epox Z Kote® will not generate levels of potential airborne contaminants that would exceed the OSHA (PELs) or recommended values. It is also the Certified Industrial Hygienists' (CIH) opinion that the aldehyde concentrations generated while welding on Epox Z Kote® are consistent with those generated while welding on uncoated metal.