

## **Recommendation for capture and control of stainless steel Cr(VI) weld fumes released by United Air Specialists**

*Manufacturer reviews available solutions in light of stricter OSHA standard*

**CINCINNATI, OH — July 10, 2006** — Media filtration collectors with separate hoods and ducting are the best way to meet OSHA's new regulation limiting exposure to hexavalent chromium (Cr(VI)) fumes to 5µ/m<sup>3</sup> when welding stainless steel. The engineering staff at United Air Specialists (UAS) reached this conclusion after a thorough review of the best way to control Cr(VI) dust/fumes in the work space.

"Our review," notes Ed Ravert, senior application engineer, UAS, "looked in depth at the effectiveness of the two main types of dust/fume collection—electrostatic precipitators (ESPs) and media filtration collectors—in light of the new OSHA 5µ/m<sup>3</sup> Cr(VI) exposure limit. ESPs have long been ideal for the collection of weld fume submicronic particles. Typically, ESPs are used for source capture systems, or ambient air systems on carbon steel welding, and prior to the new OSHA standard on stainless steel welding. ESPs require very little maintenance and are not subject to periodic media filter replacement costs. However, our review clearly showed that ESPs cannot match the overall efficiency of a media filtration source capture system for stainless steel weld fumes, especially if the air is to be returned into the work space.

"If welding on stainless steel and ambient air collection is desired, we found that the welder must be required to wear personal respiratory protection at all times. Even then, and if the air is to be returned into the work space, a monitored HEPA after-filter would be required."

### **Source capture systems best for Cr(VI) dust/fumes**

With 99.99% efficiency, media filtration units, including cartridge dust collectors, are ideal for the collection of Cr(VI) weld smoke. Depending on the welding process, source capture systems do the best job of capturing weld fume contaminants using the least amount of cubic feet of air per minute (CFM). Source capture systems include hoods, ducting, an air-cleaning device and air moving devices (fans). The air-cleaning device can include swing arm(s) and hood(s). "With separate hoods and ducting," Ravert points out, "the cartridge collector is ideal for stainless steel weld fumes because the dust/fumes are captured before they can escape into the ambient air."

**SFC Series downward flow cartridge dust collectors ideal for task**

UAS recommends its SFC Series downward flow cartridge dust collectors combined with either a hooding or ducting source capture system as the ideal solution for Cr(VI) dust/fume collection. These media filtration units can be situated inside a factory or outdoors and their modular design permits easy expansion in the field. Patented pulse-jet cleaning technology continuously cleans cartridge filters without having to suspend operations. The result is more energy to clean the entire length of the filter, fewer pulses needed to clean filters and increased cartridge filter life. Air volumes range from 510 CFM to 62,280 CFM.

**Stainless weld fume control guidance available from UAS**

Every stainless welding situation has special requirements as to the welding process in use, the amount of weld fumes generated and the welding location, UAS has application engineering staff available to provide guidance on the best solution for each individual application. To discuss your situation, contact UAS at [sales@uasinc.com](mailto:sales@uasinc.com).

**About United Air Specialists, Inc.**

For 40 years, United Air Specialists, Inc., has been an industry leader in designing and manufacturing technologically innovative, high-performance custom air-filtration equipment for a wide range of commercial and industrial dust applications. United Air Specialists, Inc., is a CLARCOR Company. For more information visit [www.uasinc.com](http://www.uasinc.com) or call 800-252-4647.

# # #