

Accepted Manuscript

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PII: S0304-3894(17)30672-6
DOI: <http://dx.doi.org/10.1016/j.jhazmat.2017.08.070>
Reference: HAZMAT 18835

To appear in: *Journal of Hazardous Materials*

Received date: 28-5-2017
Revised date: 24-8-2017
Accepted date: 29-8-2017

Please cite this article as: N.Meï, L.Belleville, Y.Cha, U.Olofsson, I.Odnevall Wallinder, K.-A.Persson, Y.S.Hedberg, Size-separated particle fractions of stainless steel welding fume particles – A multi-analytical characterization focusing on surface oxide speciation and release of hexavalent chromium, *Journal of Hazardous Materials* <http://dx.doi.org/10.1016/j.jhazmat.2017.08.070>

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Size-separated particle fractions of stainless steel welding fume particles – a multi-analytical characterization focusing on surface oxide speciation and release of hexavalent chromium

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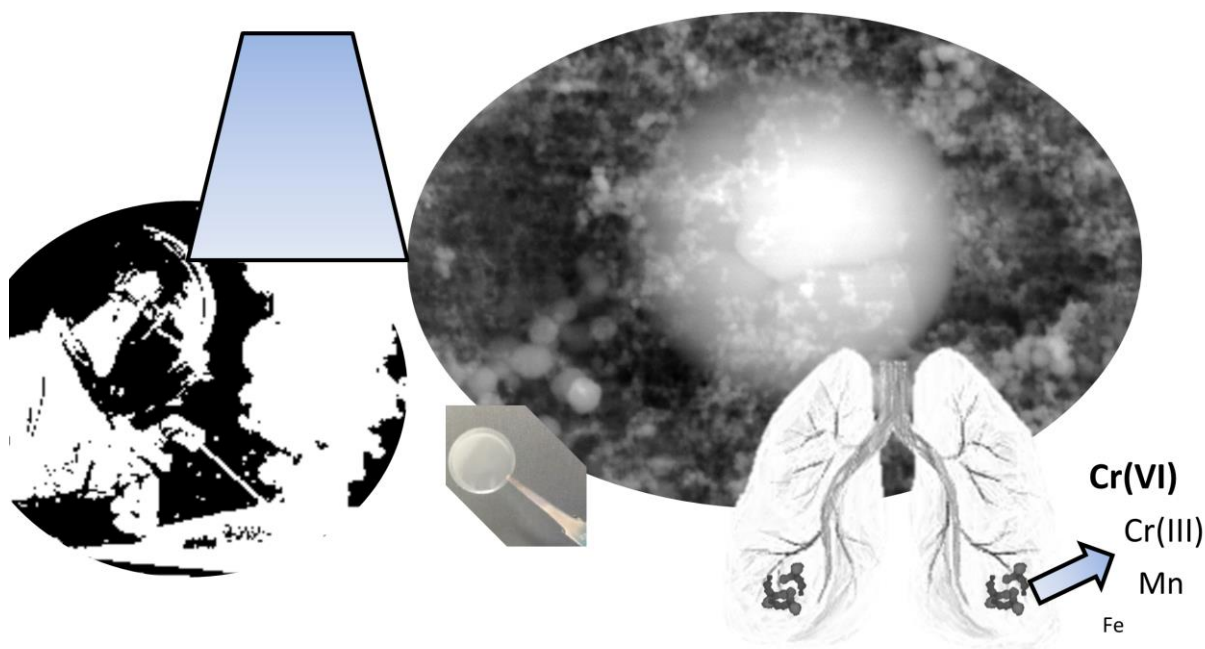
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GRAPHICAL ABSTRACT



Highlights

- Cr predominantly released from welding fume at pH 7.4.
- More Cr(VI) when welding duplex stainless steel with flux-cored wire.
- More Ni released from nano-sized particles compared to large particles.
- Cr(VI) released despite no sodium/potassium-(di)chromate present.
- Highly oxidized mixed surface oxide present on all particles.

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