**Article Title:** Evaluation of Chemical Hazards at a Criminal Investigation Section of a Police Department

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**Author:** Kenneth W. FENT, US Dept of Health and Human Services, CDC, NIOSH Cincinnati Ohio

**Article’s Subject Matter:**

The article covers the use of Ninhydrin, Luminol, Cyanoacrylate (Glue Fuming), and powders, in a US Police Department “Crime Lab”. They examined the practices of the examiners in the unit, when using the above mentioned chemicals, and attempted to measure the OELs (Occupational Exposure Levels).

**Key Points in Article**

- Recommended further study of OEL’s for powders, as black powder OELs in garage during vehicle exam were at the limit for exposure
- All other chemicals tested were lower than OEL’s
- Recommended negative pressure for the Lab to prevent chemicals from floating around office
- Use of PPE and standardized recommendation of masks for use during powder examinations
- Inspection of exhaust systems in labs, and increase airflow through them

**Fallacies and Issues**

- 1) Ninhydrin formula is dramatically different from RCMP recommended standard (we use the non-toxic, inflammable HFE7100 as a carrier, and not acetone).
- 2) Chemicals should always be mixed inside the fumehood and I suspect the preparation of ninhydrin outside the fumehood was a major contributor to the detection of ethyl acetate throughout the workspace. I was actually surprised that the levels were so far below the occupational exposure levels (OELs).
- 3) CA fuming - opening the door during the fuming process is something RCMP FIS should have been trained not to do. In fact many chambers do not even allow this. I am sure this would contribute to the detection of ethyl cyanoacrylate throughout the workspace and again I am surprised the levels were well below OELs.
- 4) Examination using fingerprint powders would normally occur within a fingerprint hopper but perhaps the use of the N95 filtering facepiece should be considered for crime scene or vehicle dusting in the garage if it isn't already done.
- 5) Engineering controls are mostly common sense (replace filters following manufacturer's recommendations) and most RCMP labs will be a negative pressure environment because of the fumehoods, wet sinks and vented-CA chambers.

Reviewed by Dr Della WILKINSON.