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

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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.