

What HPV could mean to Industrial Hygiene Risk Assessment

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Hazard Identification (HI) is a Critical Step for Us

- It is the **First Step** to just about Everything that we do as Industrial Hygiene Professionals:
 - Hazard Identification, leads to
 - Dose-Response Characterization, which allows the
 - Assignment of Exposure Limits, for use in
 - Exposure Assessment, which results in
 - Risk Characterization and finally well-informed
 - **RISK MANAGEMENT**
- In short, **Risk Assessment** is a “**non-starter**” without it.

Hazard Identification Provides “Color” to the Risk Associated with any Chemical Compound

- For example, Chemicals are the “Color” of a:
 - Local tissue irritant or
 - Systemic toxicant with target organ or
 - Reproductive toxicant or
 - Other controlling toxic end-point
- Untested compounds have no “color” and no place to start a Risk Assessment
- Testing reveals the type or “hue” of the risk

Risk Management Hierarchy

- One can not even start to manage any Risk which has not been identified. Management decisions are not based on Hazard or Risk.

←===== **HPV Program** =====→

- Once identified it can not be managed reasonably unless and until it is assessed. Decisions can be Hazard-Based but not Risk-Based.
- If the Risk is reasonably well assessed then logical and cost-effective management should be possible.

HPV Provides the Input for Half of Risk Assessment

- The HPV Program provides Hazard Identification, some indication of repeat dose-response and enough data to establish an exposure limit.
- HPV does not require any exposure data.
- HPV does not require a Risk Assessment.

Providing Half of a Risk Assessment Always Begs for the **Other Half**

- Doing Exposure Assessment Reveals a Need for Toxicology (e.g., EPA WPEM or Wall Paint Exposure Model)
- Toxicological Assessment (HPV) Requires Exposure Assessment to provide the contextual meaning regarding the RISK associated with this toxic potential.

What Could Go Wrong?

Toxicity without the context of exposure and risk could ultimately result in:

- Irrational Fear (Chemo phobia)
- Over-regulation
 - Banning
 - Restrictive use rules (*de facto* banning)
- Use of substitutes with no data and potentially **less** safety.

What Should You be Doing Now

- Check out the Alliance for Chemical Awareness.
<http://www.chemicalawareness.org/>
- Find out who is converting your HPV data into exposure limits in your organization.
- Begin talking with your Business folks about your HPV chemicals and their customers that use them.
- Learn about Exposure Modeling (AIHA Modeling Book, Whitebook, ToolBox PDC)

Alliance for Chemical Awareness

- The Alliance for Chemical Awareness (ACA) is an initiative of the business community to enhance the availability of information to the public about major chemicals in commerce, with a particular focus on the High Production Volume (HPV) chemicals that have been the subject of public/private chemical testing programs

ACA Vision Statement

HPV “...data are likely to influence a wide variety of public and private choices about chemical risk management throughout the world. The participants in the Alliance for Chemical Awareness believe that these choices would be improved substantially by enhanced access to objective timely and relevant information about commonly used chemicals.”

Converting HPV data into Exposure Limits

- Feeds the Standard Industrial Hygiene Risk Assessment Paradigm.

$$\mathbf{Risk = EXP/EL}$$

- If its not being done in your organization you might want to take the opportunity to initiate this important project.

Learn about Exposure Modeling

- Modeling is critical for early tiered exposure/risk assessment.
- Modeling is the only way to estimate exposures for venues you can not monitor.
- Modeling will increase your value to any employer.

Conclusion

As Industrial Hygienists, exposure assessment is our primary stock-in-trade.

The HPV Program represents an exciting development and opportunity for the industrial hygienist. It provides a rapid influx of toxicity data that will beg for the tools of **exposure assessment** to put the risk into context.