Chemical Assisted Suicide: Responder Information

Problem: There is no longer a routine call. Recognize that every response is unique and treat as such. Always wear proper PPE and SCBA.

- First responders “unexpected” chemical exposure concern
  - Ensure that dispatch information is shared between all disciplines to enhance responder safety
  - Be alert for information indicating the potential for occupants in any enclosed space
  - First responders must utilize the proper protective equipment
- Mixing household chemicals to create toxic vapors
  - Look for and recognize containers that may indicate presence of common household chemicals
- In most cases, two (or more) chemicals will be mixed to produce vapors

Plan the Response

- Two seconds to look into the vehicle for signs of a suicide (mixing vessels, residue, containers), ten seconds for law enforcement

Response Options
- Rescue/Recovery
- Evacuation/Isolation
- Protective handline
- Decontamination
- Preserve evidence

- Selection of PPE
  - Follow department policy and procedure for proper PPE and respiratory protection selection
- Obtain control of air monitoring equipment
- Selection of Decontamination
  - Occupants need to be decontaminated using a simple water shower of 3-5 minutes, following clothing removal
  - Technical decontamination should be established for entry teams conducting control tasks
- Plan of Action
  - Implement agency Hazardous Materials Response Protocols
  - Develop a site safety plan
  - Use a Risk Based Response control plan that is based on possible options listed above
- Vehicle vs. Structure
  - Compartment size will/can play a role in the levels of concentration, resulting in varying levels of evacuation/shelter in place options
  - The smaller the compartment the higher the concentration -> higher toxic levels and potential to reach LEL levels
  - Ventilate all occupancies to change the concentration levels of the environment
  - Open the doors to vent and remove any occupant(s)
  - Check for signs of life prior to removal (chest movement, body movement)
  - If vehicle/structure is locked and there are no signs of life, isolate and warn others
- Evacuation vs. Shelter in place – a determination must be made of which method will be more effective in life safety

Implement the Plan

- Handline (vapor disbursement or extinguishment)
  - Vapor Disbursement - Use water spray to reduce vapors or divert vapor cloud drift. Attempt to control and isolate runoff
  - Extinguishment - May form explosive mixtures with air. May be ignited by heat, sparks or flames
- Ventilation/Change the Environment – Properly trained and equipped first responders should ventilate after a thorough analysis of potential hazards
- Air monitoring - Should be conducted throughout the incident and until evidence has been collected and the scene rendered safe
- Victim transport – Decon prior to leaving the scene; methods will be based on occupant’s status
- Decontamination – All entry team members should undergo a technical decon according to local protocols. Beware of potential for occupants and clothing to ‘off-gas’ trapped vapors. EMS and the hospital must be notified in advance in order to avoid contamination of personnel/equipment
- Crime scene considerations – Minimize responder exposure while preserving evidence and supporting law enforcement

Evaluate

- Maintain Situational Awareness – Don’t count on warning signs. Be aware of secondary contamination
## CHEMICAL PROPERTIES

### Hydrogen Sulfide

<table>
<thead>
<tr>
<th>Description</th>
<th>Colorless gas</th>
<th>Odor threshold</th>
<th>0.77 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular formula</td>
<td>H₂S</td>
<td>Odor description</td>
<td>Rotten egg</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>34.08</td>
<td>Exposure route</td>
<td>Inhalation</td>
</tr>
<tr>
<td>Density</td>
<td>1.19 (≈ 20% heavier than air)</td>
<td>Signs &amp; symptoms</td>
<td>Irritation of respiratory system &amp; eyes, apnea, coma</td>
</tr>
<tr>
<td>Auto ignition temperature</td>
<td>260°C (500°F)</td>
<td>LEL/UEL</td>
<td>4%, 44%</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>15, 600 mm Hg @ 25°C (77°F)</td>
<td>IDLH</td>
<td>100 ppm</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water, hydrocarbon solvents, ether and ethanol</td>
<td>Detection</td>
<td>PID with 10.6 eV lamp</td>
</tr>
<tr>
<td>Notes</td>
<td>Death by inhalation can occur quickly at low levels</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Hydrogen Cyanide

<table>
<thead>
<tr>
<th>Description</th>
<th>Bluish-white liquid/colorless gas</th>
<th>Odor threshold</th>
<th>0.58 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular formula</td>
<td>HCN</td>
<td>Odor description</td>
<td>Bitter almond (odor may not be detected by smell)</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>27.03</td>
<td>Exposure route</td>
<td>Inhalation, absorption</td>
</tr>
<tr>
<td>Density</td>
<td>0.94 (lighter than air)</td>
<td>Signs &amp; symptoms</td>
<td>Respiration/depth change, confusion, asphyxia</td>
</tr>
<tr>
<td>Auto ignition temperature</td>
<td>538°C (1000°F)</td>
<td>LEL/UEL</td>
<td>5.6%, 40%</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>630 mm Hg @ 20°C (68°F)</td>
<td>IDLH</td>
<td>50 ppm</td>
</tr>
<tr>
<td>Solubility</td>
<td>Miscible in water, alcohol, slightly soluble in ether</td>
<td>Detection</td>
<td>PID with 13.6 eV lamp</td>
</tr>
<tr>
<td>Notes</td>
<td>Death by inhalation can occur quickly at low levels</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For more information on chemical assisted suicide response visit www.hazmatfc.com