

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

Analyze the Problem

- Recognition/ID and Warning Signs
 - Open containers or a ‘mixing container’. Chemicals may not be properly marked/labeled
 - Do NOT rely on suicide notes or placards near the entry pathway for first responders which warn of danger
 - Open containers or household chemicals where they would not normally be found (vehicles, bedrooms, etc.)
 - Taping of doors, windows, dash vents, openings or other attempts to seal the enclosure
- Locations: Vehicles and Structures
 - If this is a chemical suicide remember it is a crime scene and once life safety considerations are met to treat as such
 - Look for indicators in the surrounding area and question occupants. After analysis, vehicles and structures can be ventilated. Do NOT rely on presence or lack of chemical/unusual odors. Be aware of contact with liquids or powders and provide decontamination for occupants and responders

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

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

CHEMICAL PROPERTIES

Hydrogen Sulfide

Description	Colorless gas	Odor threshold	0.77 ppm
Molecular formula	H ₂ S	Odor description	Rotten egg
Molecular weight	34.08	Exposure route	Inhalation
Density	1.19 (≈ 20% heavier than air)	Signs & symptoms	Irritation of respiratory system & eyes, apnea, coma
Auto ignition temperature	260°C (500°F)	LEL/UEL	4%, 44%
Vapor pressure	15, 600 mm Hg @ 25°C (77°F)	IDLH	100 ppm
Solubility	Soluble in water, hydrocarbon solvents, ether and ethanol	Detection	PID with 10.6 eV lamp
Notes	Death by inhalation can occur quickly at low levels		

Hydrogen Cyanide

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

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