

- 10 micrometers)
- a. Acrolein
 - b. Ammonia
 - c. Chloramine
 - d. Ethylene oxide
 - e. Formaldehyde
 - f. Hydrogen chloride
 - g. Methyl bromide
 - h. Sodium azide
 - i. Sulfur dioxide
5. Intermediate water solubility (bronchus and bronchiole, particle size 5–10 micrometers)
 - a. Chlorine
 6. Low water solubility/less irritating (alveolar, particle size less than 5 micrometers)
 - a. Cadmium fume
 - b. Fluorine
 - c. Hydrogen sulfide (rotten egg odor; olfactory fatigue)
 - d. Mercury fume
 - e. Mustard gas (also delayed blistering skin manifestations)
 - f. Nickel carbonyl
 - g. Ozone
 - h. Phosgene
 7. Asphyxia agents (two categories)
 - a. Oxygen deprivation below 19.5% oxygen atmosphere ("simple asphyxiants")
Any gas that reduces oxygen fraction or displaces oxygen from the inspired air
 - i. Argon
 - ii. Carbon dioxide
 - iii. Ethane
 - iv. Helium
 - v. Methane
 - vi. Natural gas (e.g., heptane, propane)
 - vii. Nitrogen
 - viii. Nitrogen dioxide (delayed symptom onset)
 - b. Chemical interfering with oxygen delivery or utilization ("chemical asphyxiants")
 - i. Carbon monoxide [See [Carbon Monoxide/Smoke Exposure Guideline](#)]
 - ii. Cyanide [See [Cyanide Exposure Guideline](#)]
 - iii. Hydrogen sulfide
 8. Inhalants of abuse
 - a. These agents or substances are a diverse class of substances that include volatile solvents, aerosols, and gases
 - b. These chemicals are intentionally inhaled to produce a state that resembles alcohol intoxication with initial excitation, drowsiness, lightheadedness, and agitation
 - c. Users of these inhaled agents are often called huffers, sniffers, baggers, or snorters
 - i. These individuals often present after inhaling an aerosol or gas with a loss of consciousness and the presence of the aerosol can or residue/paint around or in the mouth, nose, and oral pharynx