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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | |  | Torrance Fire DepartmentHazardous Materials Worksheet RESCUE/FAST ENTRY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Date: Incident#: Dispatched: Radio Channel:** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Responsible Party: Cell: Landline: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Description of incident: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  |  | | --- | --- | | Spill | Leak | | Odor | Dumping | |  |  | | | | |
| Exposed # | | | | | | Injured # | | | | | | | | | | | | Transported# | | | | | | | | Hospital Name/Address/Phone | | | | | | | | |
| Initial Shelter in place Y/N  Distance | | | | | | Initial Evacuaton Y/N  Distance | | | | | | | | | | | | Dead # | | | | | | | |
| **Chemical Information:** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Product Name | | | | | | | | | | | | | Trade Name: | | | | | | | | | | | | | | Synonym(s) | | | | | | | |
| Manfacturer | | | | | | | | | | | | | Shipper | | | | | | | | | | | | | |  | | | | | | | |
| Physical Description: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Incompatible/Reactive: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DOT# | | | | Compsition | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Volume: | | | | Name | | | | | | | | | | | | | | | | | | CAS | | | | | | | | | | % | | |
| Name | | | | | | | | | | | | | | | | | | CAS | | | | | | | | | | % | | |
| Name | | | | | | | | | | | | | | | | | | CAS | | | | | | | | | | % | | |
| Solid  Liquid  Gas | | IDLH  PEL  TWA  REL  TLV | Odor  Thres  ppm | Vapor Pressure  Heat  Reactivity  Pressure | | | | %LEL/UEL | | | | Flash Point  Liquids Only | | | Ignition  Temp F | | | | | | I.P.  <10.6  Lamp  PID Y/N | | Boiling Point | | Polymerize  (Heat) | | | | | Water Soluble  >10% | | | Vapor Density  <1 Up  >1 Down | Specific  Gravity  <1 Floats  >1 Sinks |
|  | |  |  |  | | | |  |  | | |  | | |  | | | | | |  | |  | |  | | | | |  | | |  |  |
| Extinguishing Agents | | | | | Water  AFFF AFFF/ATC  Dry Chemical  Dry Powder  Halon  CO2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Decon Solutions | | | | | Water  “E” **S**oap & Water | | | | | | “A”5% Sodium Bicarbonate & 5% TSP  ”B” 10% Calcium Hypocholorite | | | | | | | | | | | | | | | “C” 5% Trisodium Phosphate (TSP)  “D” Citric Acid | | | | | | | | |
| **Action Objectives** | | | | | | | | | | | | | | | | **Evacuation Distances & Control Zones** | | | | | | | | | | | | | | | | | | |
| 1 | Approach with Caution | | | | | | | | | | | | | | | Shelter in Place  Solid 75’  Liquid 150’  Gas 300’ | | | | | | | | | | | | Evacuation  Solid 75’  Liquid 150’  Gas 300’ | | | | | | |
| 2 | ID & Assess | | | | | | | | | | | | | | |
| 3 | Rescue | | | | | | | | | | | | | | |
| 4 | Isolate | | | | | | | | | | | | | | |
| 5 | Control/Contain | | | | | | | | | | | | | | | First Aid | | | | | | | | | | | | | | | | | | |
| 6 | Evacuate/Shelter in Place | | | | | | | | | | | | | | |  | | | | | | | | | | | | |  | | | | | |
| 7 | Notifications | | | | | | | | | | | | | | |  | | | | | | | | | | | | |  | | | | | |
| 8 | Decontamination | | | | | | | | | | | | | | |  | | | | | | | | | | | | |  | | | | | |
| 9 | Documentation/RP | | | | | | | | | | | | | | |  | | | | | | | | | | | | |  | | | | | |
| **Personal Protective Equipment**  **Questions? = Use Safest Protection** | | | | | | | | | | **Detection**  **ERG Guide # 112,113,114 are Explosives - ERG Guide # 161-166 are RADS** | | | | | | | | | | | | | | | | | |  |  |  | | --- | --- | --- | | **RESCUE / FAST ENTRY** | | | |  | YES | NO | | Hot Liquid? |  |  | | Cold Liquid? |  |  | | Gamma Rad? |  |  | | Flammable? |  |  | | Explosive? |  |  | | Suit Compatible |  |  | | **ALL  checked? GO** | | | | **Any  ­-- Risk vs Gain?** | | | | | | | | | | |
| Level “A” (Corrosive gas - ERG Guide # 118, 123, 124, 125 or skin absorbing gas) | | | | | | | | | | CGI | | | | PID/  FID | | | Rad Pager | | | | | Ph Paper | | F-Paper | | |
| Level “B” (Solid or liquid corrosive or skin absorbing chemical) | | | | | | | | | | Tubes/  Chips | | | | Heat Gun | | | Freon | | | | | RP Inst. | | **Take all if you don’t know** | | |
| Turnouts w/SCBA (Solid, liquid, or gases that are not corrosive or skin absorbing gas) | | | | | | | | | | Bio Strips | | | | WMD | | | FTIR | | | | | Raman | |
| **Resources: Have questions ready with the CAS# handy. Get contacts name and title in case you have to call back**  Medical Questions: Poison Contro l-800-876-4766  Medical ,Chemical Questions, Other: CHEMTREC 800-424-9306  Toxicity, Environmental Questions: ATSDR Duty Officer 770-488-7100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **When you have doubts call outside resources**  When calling chemists or doctors attempt to get CAS#’ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Vapor Pressure** | | | | | | | | | | | | | | | | | | | | **Water Solubility** | | | | | | | | | | | | | | |
| Will chemical come and come get me?  O mm/hg = Rock  25 mm/hg = Water  180 mm/hg = Acetone  760 mm/hg = Gas | | | | | | | Other ways you see mm/hg  1 atm = 760 mm/hg  1 Torr = 1 mm/hg  1kPa = 7.5 mm/Hg  1 psi = 50 mm/Hg  1psi = 6.895kPa | | | | | | | | | | | | | **<10% Use fog stream to push like a smoke ejector**  **Decon with soap and water**    **>10% Use fog stream to absorb**  **BE AWARE OF RUNOFF ISSUES BECAUSE NOW YOU HAVE REACTED A NEW CHEMICAL**  **Decon with water** | | | | | | | | | | | | | | |
| **Exposure Values - Is it going to hurt me** | | | | | | | | | | | | | | | | | | | | **Vapor Density and Molecular weight** | | | | | | | | | | | | | | |
| IDLH., TLV, TWA, PEL, REL - ppm or mg/m**3.**  0-100 ppm Don’t inhale, touch or ingest  100-1000 ppm Don’t touch or ingest  1000 ppm or more Don’t ingest    Every time people are exposed or potentially exposed call!  Less <100 ppm Probably need some type of protection – Call if not sure  MW divided by 25 will give you conversion from mg/m**3** to ppm, sometimes conversion in NIOSH | | | | | | | | | | | | | | | | | | | | **Tells us if chemical goes up or down**  Vapor Density of air = 1  More than 1 VD = goes down  Less than 1 VD = goes up  Molecular weight of air = 30  More than 30 MW goes down  Less than 30 MW goes up | | | | | | | | | | | | | | |
| **Odor Threshold Value**  If odor threshold less than < TLV,TWA,PEL,REL you know people are at least getting chronic exposure.  If odor threashold is more than > TLV, TWA, PEL,IDLH if they are smelling it they are getting acute exposure. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Corrosivity/ ph paper Blue = Base Red = Acid Green = Neutral**  **F-Paper Yellow = Fluorine or not soluble** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Radiation**  **Rescue 50 Rem**  **Yearly Dose Rad Worker 5 Rem**  **2 milirem = Hot Zone**  **Background Radiation varies ~5-15** 1 microrem (µrem)  1000 microrem (µrem) = 1 millirem (mrem)  1000 miliren (mrem) = 1 rem (rem)  \*3-4 Times background indicates something is present. | | | | | | | | | | | | | | | | | | | |  |  |  |  | | --- | --- | --- | --- | | **Isotope** | **Type** | **Half Life** | **Rad Type** | | **Iodine 131** | **Medical** | **8 Days** | **Beta** | | **Technetium** | **Medical** | **6 hrs.** | **Beta** | | **Cesium 137** | **Industrial** | **30 yrs** | **Beta, Gam** | | **Ameriecum** | **Industrial** |  |  | |  |  |  |  | | **Uranium 235** | **WMD** | **703 mil yrs** | **Alpha** | | **Plutonium 239** | **WMD** | **24,000 yrs** | **Alpha** | |  |  |  |  | | | | | | | | | | | | | | | | |
| **Ionizing Radiation**  Alpha  Beta  Gamma  Neutron  X-ray | | | | [http://upload.wikimedia.org/wikipedia/commons/thumb/6/61/Alfa_beta_gamma_radiation_penetration.svg/300px-Alfa_beta_gamma_radiation_penetration.svg.png](http://en.wikipedia.org/wiki/File:Alfa_beta_gamma_radiation_penetration.svg) | | | | | | | | | | | | | | | **Radiation Surface Radiation**  **White I <0.5 mr/hr**  **Yellow II >0.5 <50 mr/hr**  **Yellow III >50 <200 mr/hr**  **Transportation Inded (TI) is measured at 1M from the surface.** | | | | | | | | | | | | | 1µrem=10nSv  1mrem=10µSv  1rem=10mSv  100rem=1Sv  1krem=10 Sv | | |
| **Convert Celsius to Fahrenheit**  Fahrenheit Degrees = (1.8 x C) + 32  Example: 100C converted to 212F . (1.8 C 100) + 32 = 212F  Tech Ref Resources  [www.genium.com](http://www.genium.com)  [www.wiser.com](http://www.wiser.com) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |