Emergency Response Guidebook (ERG): Ins and Outs

Jason Johnson, WIPP Planner
Technological Hazards Unit
Learning Objectives

- Define the ERG
- 9 classes of hazardous materials
- Describe the colored sections
2016 EMERGENCY RESPONSE GUIDEBOOK

A guidebook intended for use by first responders during the initial phase of a transportation incident involving dangerous goods/hazardous materials.

2016 GUÍA DE RESPUESTA EN CASO DE EMERGENCIA

Una guía destinada al uso de los primeros respondedores durante la fase inicial de un incidente en el transporte que involucre mercancías peligrosas / materiales peligrosos.
What is the ERG?

- The Emergency Response Guidebook 2016 (or, ERG 2016) is a guidebook for use by first responders to assist in safely conducting operations on an incident involving dangerous goods or hazardous materials.

- Created by the U.S. Department of Transportation with intent to assist responders on transportation-related incidents, but useful for any emergency scene in which hazardous materials or dangerous goods pose a significant health or life safety risk.
Scene size-up: What to look for

• Placards, labels, or markings indicating presence of hazardous materials
• Container labels
• Rail cars or road trailers specific for carrying hazardous materials and dangerous goods
• Shipping documents or MSDS sheets if readily available to access
• Vapors, fumes, smoke, or spills
  • Whistling from a tank may indicate leak of gaseous material
  • Being close enough to smell odors emitted from hazardous materials may mean personnel are too close and in danger
Hazardous Materials Classes

- Class 1: Explosives
- Class 2: Gases
- Class 3: Flammable Liquids
- Class 4: Flammable Solids
- Class 5: Oxidizing Substances
- Class 6: Toxic and Infectious Substances
- Class 7: Radioactive Materials
- Class 8: Corrosives Substances
- Class 9: Miscellaneous
Placards

Nine Classes of Hazardous Materials

- Class 1: Explosives
- Class 2: Gases
- Class 3: Flammable Liquid and Combustible Liquid
- Class 4: Flammable Solid, Spontaneously Combustible, and Dangerous When Wet
- Class 5: Oxidizer and Organic Peroxide
- Class 6: Poison (Toxic) and Poison Inhalation Hazard
- Class 7: Radioactive
- Class 8: Corrosive
- Class 9: Miscellaneous

Federal MotorCarrier Safety Administration
U.S. Department of Transportation
www.fmcsa.dot.gov
3. SHIPPING DOCUMENT INFORMATION:

A. PACKAGE NUMBER: 0001
   MATERIAL ID: UN2916
   ERG GUIDE #: 163
   MATERIAL NAME: WASTE RADIOACTIVE MATERIAL
   CONTAINER: TYPE B (U) PACKAGE
   FISSILE: Y
   HAZARD CLASS: 7
   WEIGHT: 8463 KG
   PHYSICAL FORM: SOLID/OXIDE
   CHEMICAL FORM: TRANSURANIC WASTE
   LABEL CATEGORY: RADIOACTIVE YELLOW II
   HWY RTE CNTRLD: Y

B. PACKAGE NUMBER: 0002
   MATERIAL ID: UN2916
   ERG GUIDE #: 163
   MATERIAL NAME: WASTE RADIOACTIVE MATERIAL
   CONTAINER: TYPE B (U) PACKAGE
   FISSILE: Y
   HAZARD CLASS: 7
   WEIGHT: 8230 KG
   PHYSICAL FORM: SOLID/OXIDE
   CHEMICAL FORM: TRANSURANIC WASTE
   LABEL CATEGORY: RADIOACTIVE YELLOW II
   HWY RTE CNTRLD: Y

C. PACKAGE NUMBER: 0003
   MATERIAL ID: UN2916
   ERG GUIDE #: 163
   MATERIAL NAME: WASTE RADIOACTIVE MATERIAL
   CONTAINER: TYPE B (U) PACKAGE
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   HAZARD CLASS: 7
   WEIGHT: 6389 KG
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   CHEMICAL FORM: TRANSURANIC WASTE
   LABEL CATEGORY: RADIOACTIVE YELLOW II
   HWY RTE CNTRLD: Y
Road Trailers and Rail Cars Identification Chart

ROAD TRAILER IDENTIFICATION CHART

- DOT406, TC406, SCT-306 Non-pressure Liquid Tank (MC306, TC306)
- DOT407, TC407, SCT-307 Low Pressure Chemical Tank (MC307, TC307)
- DOT412, TC412, SCT-312 Corrosive Liquid Tank (MC312, TC312)
- MC331, TC331, SCT-331 High Pressure Tank
- DOT407, TC407, DOT412, TC412 Vacuum Loaded Tank (TC396)
- MC339, TC339, SCT-339 Cryogenic Liquid Tank (TC341, CGA341)
- Compressed Gas/Tube Trailer
- Dry Bulk Cargo Trailer
- Pressure Tank Car Compressed Liquefied Gases (Closed Dome Only on top)
- Mixed Cargo
- Intermodal Tank

Rail Car Identification Chart

- Hopper Car Dry Bulk
- Box Car Mixed Cargo
- Low Pressure Tank Car Liquids (Closed Dome and Outlets on top)

CAUTION: This chart depicts only the most general shapes of road trailers. Emergency response personnel must be aware that there are many variations of road trailers, none illustrated above, that are used for shipping chemical products. The suggested guides are for the most hazardous products that may be transported in these trailer types.

The recommended guides should be considered as last resort if the material cannot be identified by any other means.
### Yellow Section

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Acetaminophen</td>
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<td>2</td>
<td>Aspirin</td>
<td>Salicylate, antipyretic</td>
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<td>3</td>
<td>Codeine</td>
<td>Morphine, analgesic</td>
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<td>4</td>
<td>Hydrocodone</td>
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<td>5</td>
<td>Morphine</td>
<td>Morphine, analgesic</td>
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<tr>
<td>6</td>
<td>Oxycodone</td>
<td>Opioid, analgesic</td>
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</table>

(Continued in the table)
Yellow Section

- ID Number Index
- ID Numbers are listed in numeric order from 1001 to 9279
- Follow Guide Number
<table>
<thead>
<tr>
<th>Name of Material</th>
<th>Guide ID</th>
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<th>Guide ID</th>
<th>Name of Material</th>
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<td>Alkaloids, liquid, n.o.s. (poisonous)</td>
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</tr>
</tbody>
</table>
Blue Section

- Name Of Material Index
- Materials are listed in alphabetical order
- Follow Guide Number
If the hazardous material entry found in the Yellow or Blue sections is **Highlighted in Green**, follow these steps:

- **If there is no fire:**
  - Go directly to Table 1 in the Green Section
  - Look up the ID number and Name of Material
  - Identify initial isolation and protective action distances

- **If there is a fire or a fire is involved:**
  - Also consult the assigned Orange Section
  - Apply the evacuation information shown under Public Safety
# Orange Section

<table>
<thead>
<tr>
<th>GUIDE 124</th>
<th>GASES - TOXIC AND/OR CORROSIVE - OXIDIZING</th>
</tr>
</thead>
</table>

## Potential Hazards (continued)

### Protective Clothing
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Use appropriate breathing protection as recommended by the manufacturer.
- Personal protective equipment (PPE) must be provided.
- Chemical protective clothing must be worn to protect against potential hazards.

### Evacuation
- See the Table of Initial Involvement and Protective Action Distance for highly hazardous substances.
- For non-hazardous substances, evacuate the area as soon as the hazard is known.
- In the case of a fire, evacuate the area immediately.

### Fire
- If a fire occurs, evacuate the area immediately. Refer to the Table of Initial Involvement and Protective Action Distance for highly hazardous substances.
- Use water to extinguish the fire if it is small and contained.
- Use fire extinguishers if available.

### Emergency Response
- **Small Fires**: Use dry chemical, CO2, or water.*
- **Large Fires**: Use water, foam, or dry chemical.*
- **Liquid Fires**: Use water, foam, or dry chemical.*
- **Electrical Fires**: Use dry chemical or dry powder.*

### Public Safety
- Call Emergency Response Telephone Number or Shipping Paper First. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the media back cover.
- Isolate spill or leak area immediately for at least 100 to 200 feet in all directions.
- Keep unauthorized personnel away.
- Stay away.
- Keep away from air or water and will spread along ground and collect in low-lying areas.
- Keep out of reach.
- Keep area closed areas.

### Spill or Leak
- Fully encapsulating protective clothing should be worn for spills and leaks with no fire.
- Use non-flammable fire extinguishing equipment.
- Keep combustibles away from spilled material.
- Use water sprays to reduce vapor or dust vapor cloud and avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Use chemical protective clothing for spills larger than 100 feet.
- Provide entry into waterways, sewers, basements, or confined areas.
- Evacuate area until gas has dispersed.
- Ventilate the area.

### First Aid
- Use eye wash or irrigation.
- Call 911 for emergency medical service.
- Apply artificial respiration if victim is not breathing.
- Do not use mouth-to-mouth method.
- Administer oxygen or breathing apparatus.
- Remove contaminated clothing and shoes.
- Keep victim warm and quiet.
- Keep victim under observation.
- Replace contaminated clothing and shoes.
- Keep victim warm and quiet.
Orange Section

• Details how to respond to an incident involving the hazardous material that has been identified at the scene
• Potential hazards involved with this particular hazardous material
  • Fire or Explosion hazards
  • Health Hazards
• Public safety considerations
  • Protective Clothing recommendations
  • Evacuation recommendations
### Green Section

#### Table of Initial Isolation and Protective Action Distances

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Small Spills</th>
<th>Large Spills</th>
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<tbody>
<tr>
<td></td>
<td>DAY</td>
<td>NIGHT</td>
</tr>
<tr>
<td></td>
<td>DISTANCE (ft)</td>
<td>DISTANCE (ft)</td>
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</tbody>
</table>

Note: Distances are for illustrative purposes and may vary based on specific conditions.

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**Texas Department of Public Safety**

**DIVISION OF EMERGENCY MANAGEMENT**
Green Section

• Initial Isolation and Protective Action Distances
• Recommends distances (in all directions) to isolate personnel and others from the hazardous material incident
  • Distance recommendations vary based on whether the spill/leak is considered “Small” or “Large”
Limitations of ERG

- It should not be considered as a substitute for emergency response training, knowledge or sound judgment.
- Does not address all possible circumstances that may be associated with a dangerous goods incident.
- Designed for use at a dangerous goods incident occurring on a highway or railroad.
- Limited value in its application at fixed facility locations.
ERG Smart Phone App

SEARCH
- Search by Name or UN
- Search by Image

BROWSE
- Browse Guide Pages
- Reference Material

ABOUT
- ERG 2016
Waste Isolation Pilot Plant (WIPP)
Thank You!

For More Information

For more information about this presentation, contact Jason Johnson, WIPP Planner, at jason.johnson@dps.texas.gov.