Carl F. Bowland

DOT P 5800.4

1987 EMERGENCY RESPONSE GUIDEBOOK

GUIDEBOOK FOR INITIAL RESPONSE TO HAZARDOUS MATERIALS INCIDENTS

READ INSTRUCTIONS ON FIRST PAGE

WHEN APPROACHING THE SCENE OF AN ACCIDENT INVOLVING ANY CARGO (NOT ONLY REGULATED HAZARDOUS MATERIALS):

- APPROACH INCIDENT FROM AN UPWIND DIRECTION, IF POSSIBLE
- MOVE AND KEEP PEOPLE AWAY FROM INCIDENT SCENE
- DO NOT WALK INTO OR TOUCH ANY SPILLED MATERIAL
- AVOID INHALING FUMES, SMOKE AND VAPORS EVEN IF NO HAZARDOUS MATERIALS ARE INVOLVED
- DO NOT ASSUME THAT GASES OR VAPORS ARE HARMLESS BECAUSE OF LACK OF SMELL

WHO'S IN CHARGE?

- FIND OUT WHO IS IN CHARGE WHEN YOU ARE INVOLVED IN AN EMERGENCY RESPONSE ACTION
- AN ON-THE-SCENE LEADER SHOULD BE DESIGNATED WHEN MORE THAN ONE PERSON IS INVOLVED IN AN EMERGENCY RESPONSE ACTION
- PRIOR DESIGNATION OF AN EMERGENCY RESPONSE COMMAND STRUCTURE IS HIGHLY RECOMMENDED TO AVOID CONFUSION AND MISDIRECTION AT THE SCENE.

PLANNING

This Guidebook is intended to assist FIRST RESPONDERS in making informed judgments during the initial phases of a transportation incident involving hazardous materials. It is not to be used as a substitute for a specific plan developed by a local planning committee or a state planning commission for response to hazardous materials incidents. Further, the Guidebook does not provide information or tools to perform detailed hazards analysis or emergency planning as required by the Emergency Planning and Community Right-to-Know Act of 1986 (SARA Title III). For assistance in complying with the requirements of that Act, a publication entitled "Hazardous Materials Emergency Planning Guide" (NRT-1) will be of assistance in establishing a plan for your community. In addition, a publication tentatively titled "Technical Guidance For Hazards Analysis Emergency Planning For Extremely Hazardous Substances" was under development at the time this Guidebook was published. When completed, the methods and values used in the new publication may produce evacuation distances which differ from some of the evacuation distances in this Guidebook. These differences will be adjusted in future editions. For a copy of NRT-1 and technical guidance for hazards analysis, you should write to

Hazardous Materials Emergency Planning Guide
Attn: WH-562A
Washington, DC 20460

POSSIBLE MULTIPLE HAZARDS OF POISONOUS & IRRITATING MATERIALS:

1. Inhalation, absorption, ingestion
2. Container rupture
3. Contamination of water
4. Flammability

POSSIBLE MULTIPLE HAZARDS OF CORROSIVE MATERIALS:

1. Contact or inhalation destroys tissue
2. Violent ruptures
3. Oxidizers
4. Splatter in contact with water
5. Toxic or thermally unstable

POSSIBLE HAZARDS OF DANGEROUS PLACARDS:

1. Mixed loads
2. Large amounts shipped together
3. Possibility of several hazards together

POSSIBLE MULTIPLE HAZARDS OF AN ETIOLOGIC AGENT:

1. Inhalation, absorption, ingestion
2. Contaminate environment

POSSIBLE MULTIPLE HAZARDS OF COMPRESSED GAS:

1. BLEVE
2. Combustion explosion
3. Asphyxiation
4. Toxicity or corrosiveness
5. Frostbite
6. Move along ground to ignition source
7. Reactivity

POSSIBLE MULTIPLE HAZARDS OF FLAMMABLE AND COMBUSTIBLE LIQUIDS:

1. Fire
2. BLEVE
3. Combustion explosion
4. Toxicity or corrosiveness
5. Reactivity (may react with other substances)
6. Move along ground to ignite
7. Contaminate water supply

POSSIBLE MULTIPLE HAZARDS OF FLAMMABLE SOLIDS:

1. Ignite easily & burn explosively
2. Air reative
3. Water reactive
4. Spontaneously combustible
5. Toxicity & corrosiveness

POSSIBLE MULTIPLE HAZARDS OF EXPLOSIVES:

1. Blast overpressure & shock waves
2. Scattering fragments
3. Additional fires

POSSIBLE MULTIPLE HAZARDS OF OXIDIZERS:

1. Supply oxygen
2. Sensitive to heat, shock, friction
3. React with organic matter spontaneously
4. Form ignitible mixture

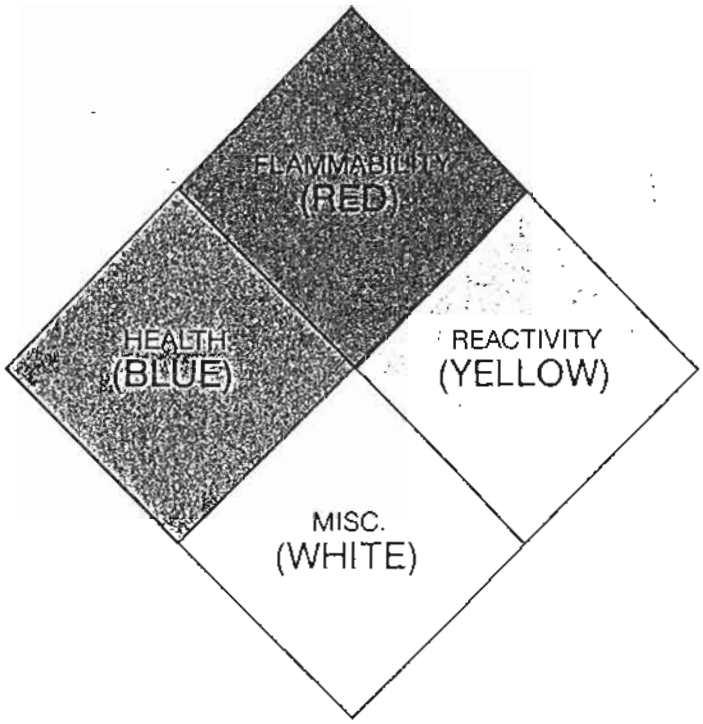
POSSIBLE MULTIPLE HAZARDS OF ORGANIC PEROXIDES:

1. Highly flammable
2. Sensitive to heat, shock, friction
3. Release heat
4. Toxic
5. S.A.D.T. — self accelerating decomposition temperature

POSSIBLE MULTIPLE HAZARDS OF RAMs:

1. External — internal
2. Contamination — smoke, steam, water runoff
3. Fire may melt lead shielding

NFPA SYSTEM
OF
IDENTIFICATION FOR HAZARDOUS MATERIALS (704M)



HEALTH	FLAMMABILITY	REACTIVITY
4 - TOO DANGEROUS TO ENTER VAPOR	4 - EXTREMELY FLAMMABLE	4 - MAY DETONATE. VACATE AREA IF IN ADVANCED STAGES OF FIRE.
3 - EXTREMELY DANGEROUS. USE FULL PROTECTIVE CLOTHING	3 - IGNITES AT NORMAL TEMPERATURES.	3 - STRONG SHOCK OR HEAT MAY DETONATE. USE MONITORS FROM BEHIND EXPLOSION RESISTANT BARRIERS.
2 - HAZARDOUS - USE BREATHING APPARATUS	2 - IGNITES WHEN MODERATELY HEATED	2 - VIOLENT CHEMICAL CHANGE POSSIBLE - USE HOSE STREAMS FROM DISTANCE.
1 - SLIGHTLY HAZARDOUS	1 - MUST BE PREHEATED TO BURN	1 - UNSTABLE IF HEATED. USE NORMAL PRECAUTION
0 - LIKE ORDINARY MATERIAL	0 - WILL NOT BURN	0 - NORMALLY STABLE

MISCELLANEOUS: Used for special situations; e.g.

- W Use water with caution
- P- Material may self-react or polymerize
- Radioactivity
- OXY- Oxidizing agents

MATERIAL TOXIC BY INHALATION

Acetone cyanohydrin
Acrolein, inhibited
Acrylonitrile, inhibited
Allyl alcohol
Allylamine
Ammonia anhydrous
Arsenic trichloride
Arsine
Boron trichloride
Boron trifluoride
Bromine
Bromine chloride
Bromine pentafluoride
Bromine trifluoride
Bromoacetone
sec-Butyl chloroformate
n-Butyl isocyanate
tert-Butyl isocyanate
Carbon dioxide and ethylene oxide mixtures
Carbon monoxide, cryogenic
Carbon monoxide gas
Carbon monoxide and hydrogen mixture
Carbonyl fluoride
Carbonyl sulfide
Chlorine
Chlorine pentafluoride
Chlorine trifluoride
Chloroacetic acid
Chloro acetonitrile
Chloroacetophenone, liquid
Chloropicrin
Chloropicrin/Methyl bromide
Chloropicrin/Methyl chloride
Chloropicrin mixtures, n.o.s.
Chloropivaloyl chloride
Coal gas
Compressed or liquefied gases, flammable, toxic, n.o.s.
Compressed or liquefied gases, toxic, n.o.s.
Crotonaldehyde, stabilized
Cyanogen, liquified
Cyanogen bromide
Cyanogen chloride
Cyclohexyl isocyanate
Diborane
Dichlorodifluoromethane and ethylene oxide mixture
Dichlorosilane
3,5 Dichloro-2,4,6 trifluoropyridine
Dimethylamine, anhydrous
Dimethyldichlorosilane
Dimethyl hydrazine, unsymmetrical
Dimethyl hydrazine, symmetrical
Di-n-amylamine
Di-(n-butyl) amine
Dimethyl phosphorochloridothioate
Diphenylchloroarsine
Epichlorohydrin
Ethyl chloride
Ethyl chloroformate
Ethyl chlorothioformate
Ethyl dichloroarsine
Ethylene chlorohydrin
Ethylene dibromide
Ethyleneimine
Ethylene oxide
Ethyl fluoride
Ethyl isocyanate
Ethyltrichlorosilane
Fluorine, gas
Furan
Gas identification kit
Germane
Hexaethyltetraphosphate and compressed gas mixtures
Hexafluoroacetone
Hydrogen bromide, anhydrous
Hydrogen chloride, anhydrous
Hydrogen chloride, refrigerated liquid
Hydrogen cyanide, anhydrous
Hydrogen selenide, anhydrous
Hydrogen sulfide, liquefied
Insecticide gases, toxic, n.o.s.
Iron pentacarbonyl
Isopropyl chloroformate
Methacrylonitrile, inhibited
Methoxymethyl isocyanate
Methylamine, anhydrous
Methyl bromide
Methyl bromide and ethylene dibromide mixtures, liquid
Methyl chloride
Methyl chloroformate
Methyl chloromethyl ether
Methyl chlorosilane
Methyl dichloroarsine
Methyl dichlorosilane
Methylene isocyanate
Methyl hydrazine
Methyl isocyanate
Methyl isothiocyanate
Methyl mercaptan
Methyl orthosilicate
Methylphosphonic dichloride
Methylphophonous dichloride
Methyltrichlorosilane
Nickel carbonyl
Nitric acid, fuming
Nitric oxide
Nitric oxide and nitrogen tetroxide mixtures
Nitrogen dioxide, liquefied
Nitrogen trifluoride
Nitrogen trioxide
Nitrosyl chloride
Nitrous oxide, compressed
Nitrous oxide, refrigerated
tert-Octyl mercaptan
Organic phosphate mixed with compressed gas
Oxygen difluoride
Parathion and compressed gas mixture
Perchloro methylmercaptan
Perchloryl fluoride
Phenyl carbylamine chloride
Phenyldichloroarsine
Phenyl isocyanate
Phenyl mercaptan
Phenyl trichlorosilane
Phosgene
Phosphine
Phosphorus oxychloride
Phosphorus pentafluoride
Phosphorus trichloride
n-Propyl chloroformate
Selenium hexafluoride
Silicon tetrafluoride
Stibine
Sulfur dioxide, liquefied
Sulfur tetrafluoride
Sulfuryl fluoride
Tear gas devices (>2% tear gas substances)
Tellerium hexafluoride
Tetraethyldithiopyrophosphate and gases
Tetraethyl lead, liquid
Tetraethyl pyrophosphate and compressed gas mixture
Thia-4 pentanal
Thiophosgene
Titanium tetrachloride
Trimethyl chlorosilane
Trimethoxy silane
Tungsten hexafluoride
Xylyl bromide

Materials added

Allyl chloroformate
n-Butyl chloroformate
Chloroacetone, stabilized
Chloroacetophenone, solid
Chloroformates (not all mixtures)
Diketene
Dimethyl thiophosphoryl chloride
Diphenylamine chloroarsine
Ethyl phosphonothioic dichloride, anhydrous
Hexachlorocyclopentadiene
Nitric acid, with more than 70% nitric acid
Pentaborane
Sulfur chloride (mono)
Sulfur trioxide
Tetranitromethane
Thionyl chloride

Materials which data are inconclusive:

Acrylonitrile, inhibited
Dimethyldichlorosilane
Methyl dichlorosilane
Methyl trichlorosilane
Phenyl trichlorosilane
Trimethyl chlorosilane

Materials which may be toxic by inhalation but are not designated as such by Special Provision 10 in the § 172.101 Table:

Chloropicrin mixtures, n.o.s.
Chlorosulfonic acid
Cumyl hydroperoxide
Ethyl phosphonous dichloride
Hydrazine
Hydrobromic acid, greater than 49% concentration
Isophorone diisocyanate
Methyl fluoride
Methyl parathion
Nitrocresol
Phosphorous pentachloride
Phosphorous pentoxide
Pivaloyl chloride
Propyl trichlorosilane
Sulfuric acid, fuming
Sulfuryl chloride
Tetraethyl dithiopyrophosphate
Thionyl chloride
Tributyl amine
Trimethyl acetyl chloride
Vanadium oxytrichloride