8-HOUR HAZWOPER REFRESHER TRAINING
March 31, 2022

24th California Unified Program Annual Training Conference

March 22, 23, 24, 29, 30, 31 - 2022

Thank you to all our 2022 SPONSORS and EXHIBITORS!

HEALTHSPACE

DTSC Department of Toxic Substances Control

ULTA BEAUTY

HCL

CalEPA California Environmental Protection Agency

Accela

CleanEarth

ENVIRONMENTAL HEALTH · PREVENT · PROMOTE · PROTECT · CCDEH

CAL FIRE

THE HOME DEPOT

VALLEY PACIFIC

Cal OES GOVERNOR'S OFFICE OF EMERGENCY SERVICES

Tanknology

SOUTHERN CALIFORNIA EDISON® Energy for What's Ahead®

Environmental Protection CUPA Trust Fund

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ACV ENVIRO

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TRINCHERO Family Estates

CITADEL EHS assess · resolve · strengthen

TAIT SINCE 1964

CDPH California Department Of PublicHealth

Yorke ENGINEERING, LLC www.YorkeEngr.com

CALIFORNIA WATER BOARDS State Water Resources Control Board

California Compliance School

TEMARRY A Triumvirate Environmental Co.

CALIFORNIA CUPA FORUM

Q&A – For Our Zoom Webinar

- We'll be using Zoom Live Q&A
- And Zoom chat if you don't have a microphone or are shy.

- After our Session is over, IF we need more time to "connect", we won't be going to a Zoom room, we'll just stay here

CALIFORNIA CUPA FORUM

HOW TO EARN CEUs…ALL STEPS REQUIRED

- Remember, to earn CEUs, you must
  - Arrive in the Session within the first 15 minutes of the Live Session
  - Attend 90-100% of the actual Session minutes
  - Complete your Session Evaluation (after EVERY Session)
  - Complete the overall Conference Survey (1 time) –

CALIFORNIA CUPA FORUM

Administrative Announcements

- Hazwoper refresher certs
- Cell phone and computer usage
  - Place phones on vibrate
  - Mute your microphones when you are not talking
- Breaks: 9:30am & 2:30pm
- Lunch: 11:30am
- Class completes: 5pm PDT
- Evaluations

Intro & Welcome

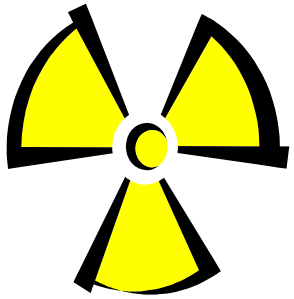
Nick Vent
Hazmatvent@gmail.com
619-778-9500

Bryan@Sustainablewp.org
863-676-4100

www.nickvent.com

SWA
SUSTAINABLE WORKPLACE ALLIANCE

What is “Hazardous”?



Federal 40 CFR requirements break it into four (4) classifications:

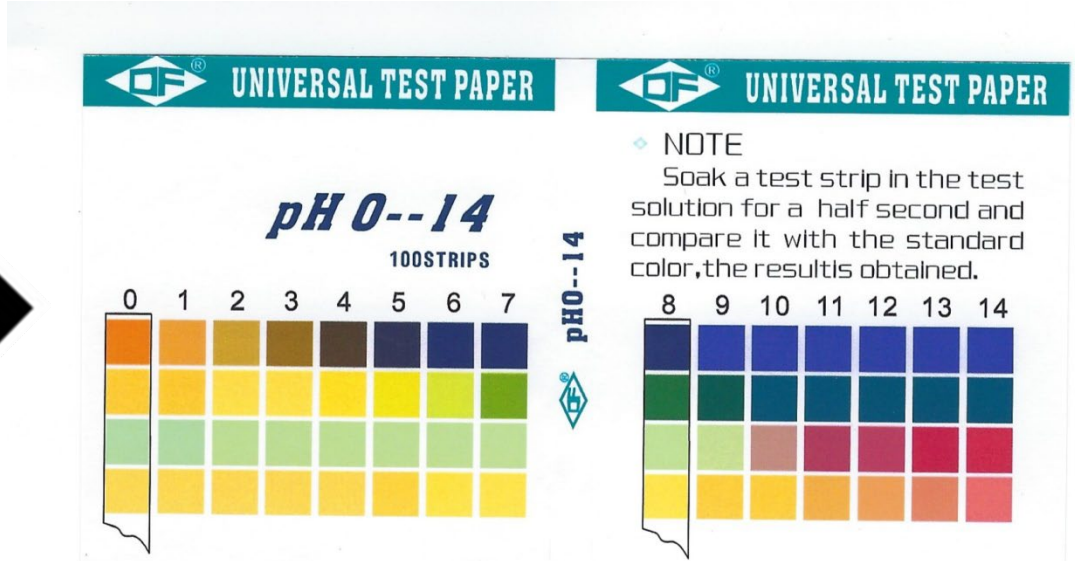
Toxic

Reactive

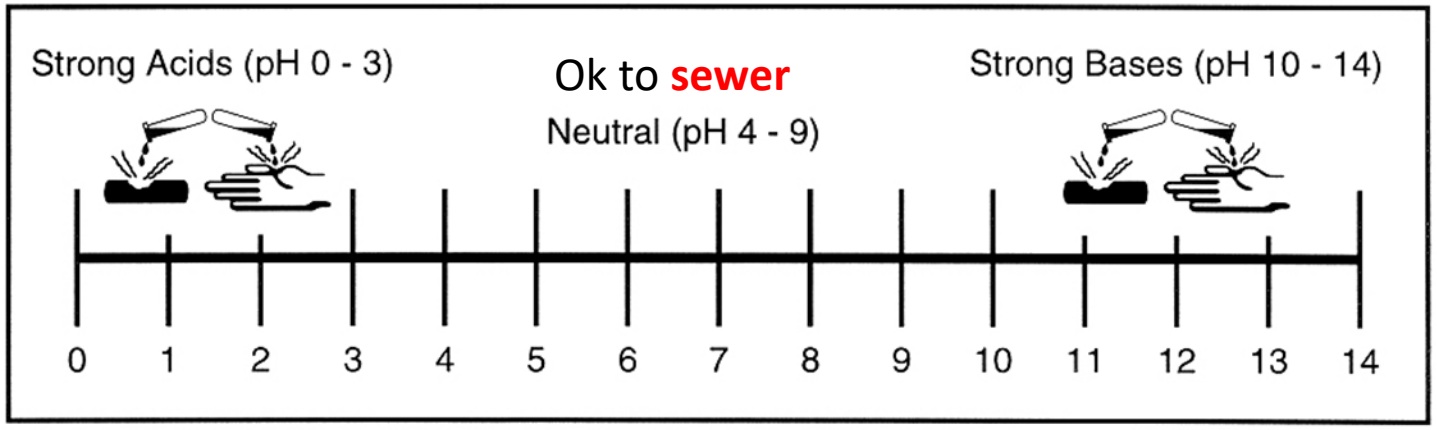
Ignitable

Corrosive

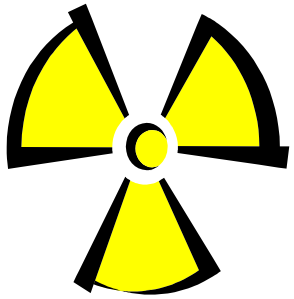
RCRA Corrosive pH 0-2 or 12.5-14



The pH Scale



What is “Hazardous”?



Federal 49 CFR requirements break it into nine (9) classifications:

Explosive

Gases

Flammable Liquid

Flammable Solid

Oxidizers

Poisons

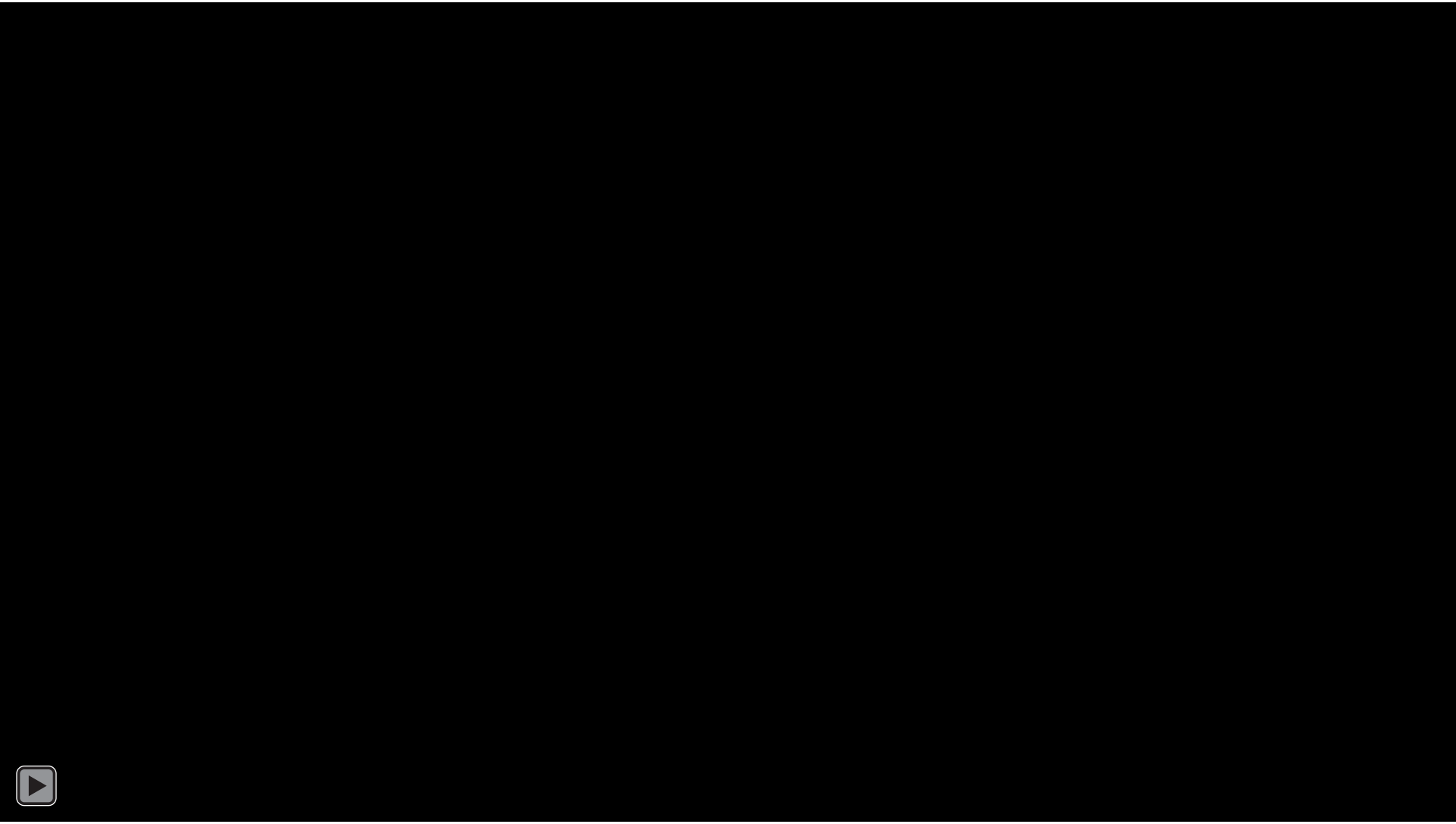
Radioactive

Corrosives

Other Regulated Materials

Explosives (Class 1)

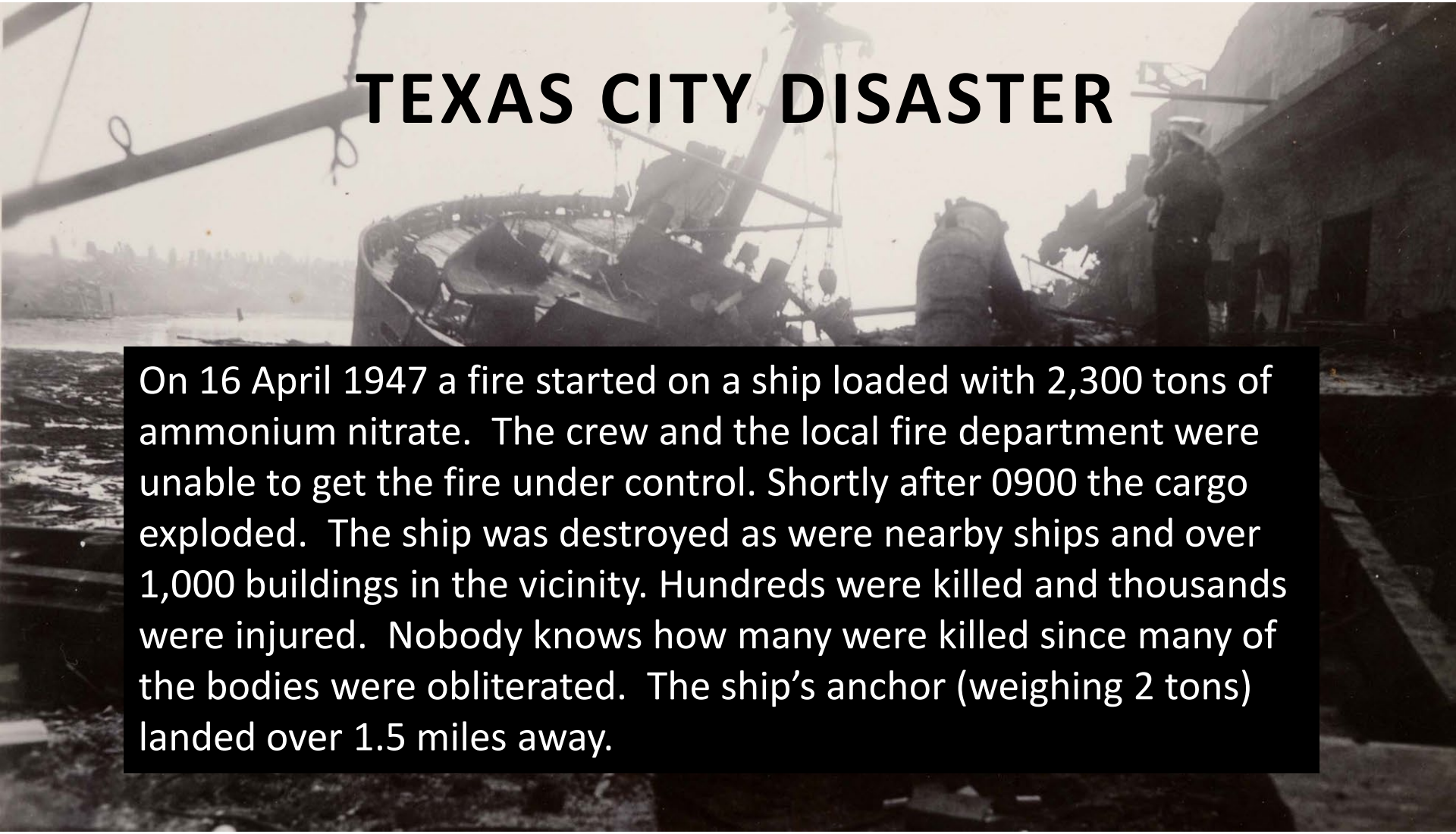
- Trinitrotoluene (TNT)
- Black Powder
- Lead azide
- ANFO
- PETN



August 4, 2020

The government there is saying that 2,750 tons of ammonium nitrate exploded

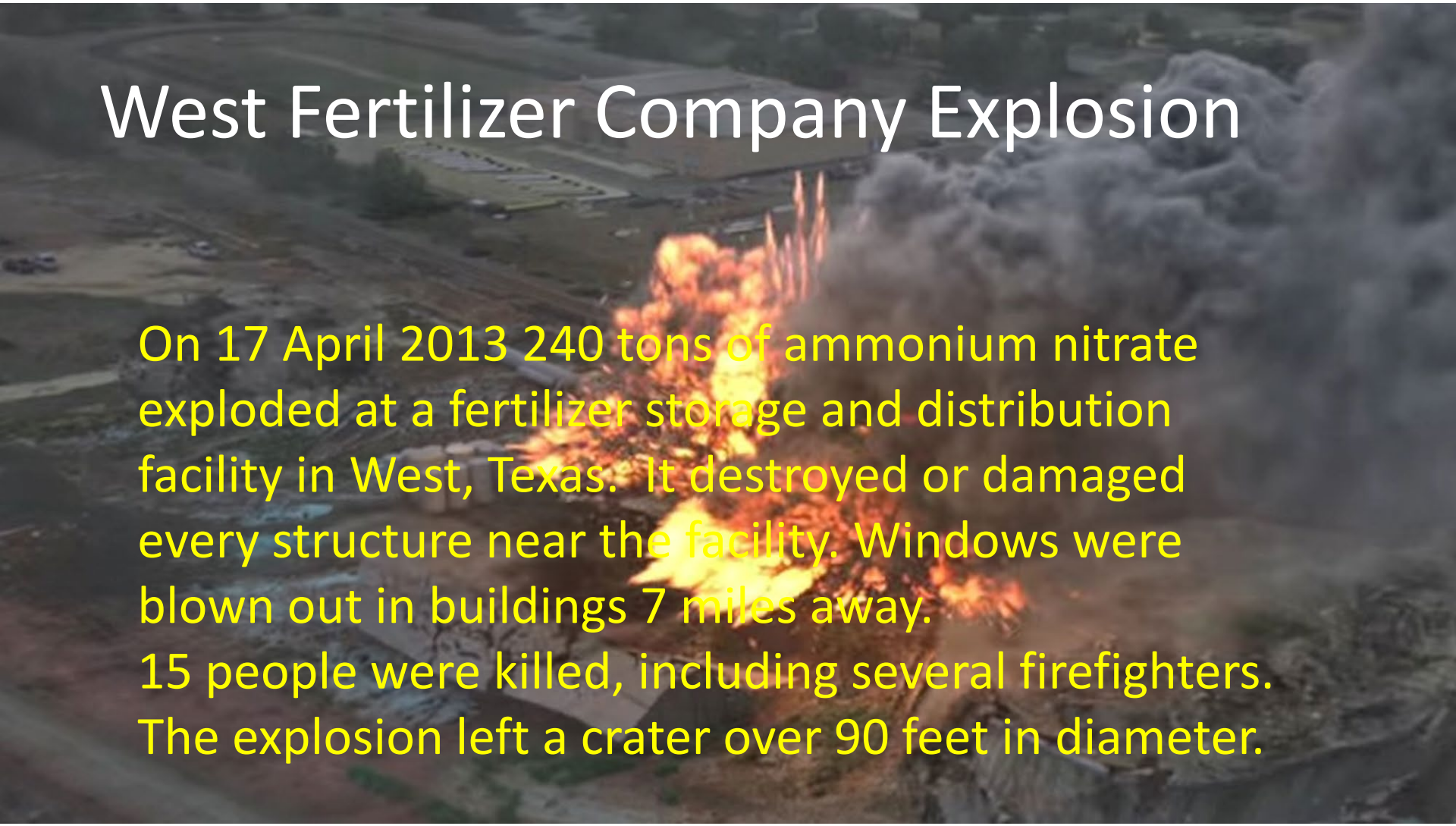
158 deaths, 6,000 injuries, and US$10–15 billion in property damage



TEXAS CITY DISASTER

On 16 April 1947 a fire started on a ship loaded with 2,300 tons of ammonium nitrate. The crew and the local fire department were unable to get the fire under control. Shortly after 0900 the cargo exploded. The ship was destroyed as were nearby ships and over 1,000 buildings in the vicinity. Hundreds were killed and thousands were injured. Nobody knows how many were killed since many of the bodies were obliterated. The ship's anchor (weighing 2 tons) landed over 1.5 miles away.

West Fertilizer Company Explosion



On 17 April 2013 240 tons of ammonium nitrate exploded at a fertilizer storage and distribution facility in West, Texas. It destroyed or damaged every structure near the facility. Windows were blown out in buildings 7 miles away.
15 people were killed, including several firefighters.
The explosion left a crater over 90 feet in diameter.

Video: BP Texas City Explosion

Length: 1 Minute

Gases (Class 2)

- Anhydrous Ammonia
- Hydrogen Sulfide
- Phosgene
- Acetylene
- Silane

Carbon Dioxide (Gas and Dry Ice) and Helium

- Secure cylinders from falling over and protect valves.
- Ensure areas where they are being used are well ventilated to prevent asphyxiation and/or fire.
- Avoid use or storage in confined rooms or walk-in refrigerators or freezers.
- Responders are dealing with death and injuries in Food establishments due to these gasses.


FOOD TRUCK
SAFETY
SNN


LiveLeak

Flammable/Combustible Liquids (Class 3)

- Gasoline
- Alcoholic Beverages

- Hydrazine
- Toluene
- Acetone

Conflict between DOT and NFPA on Storage of Flammables

This shows up more now that businesses have pivoted for Covid

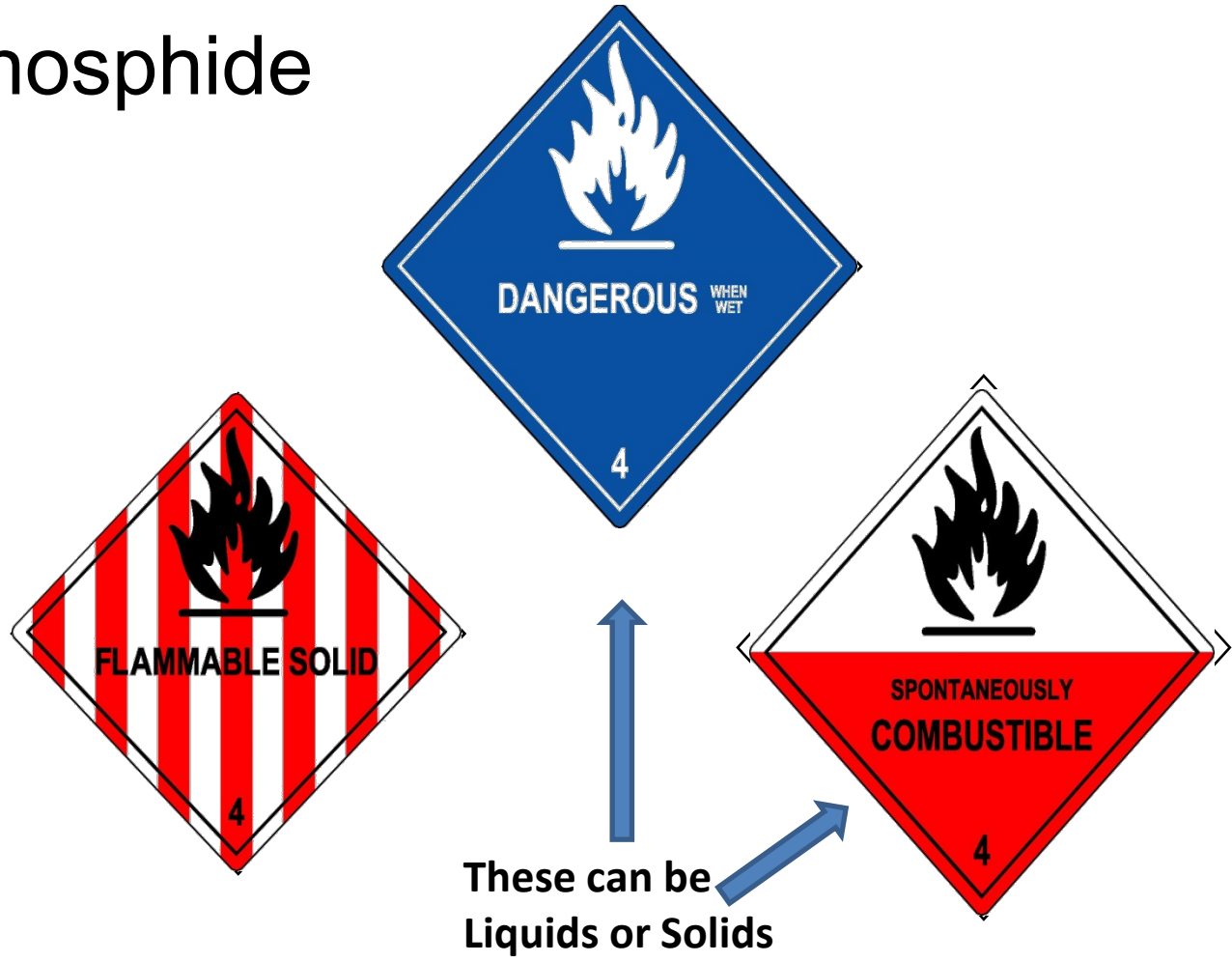
Intermediate Bulk Containers

Not allowed by NFPA code

Intermediate Bulk Containers are legal to ship per DOT but can not be stored indoors if they contain flammables.

Flammable Solids (Class 4)

Aluminum Phosphide
Napthalene
Sodium
Lithium
Phosphorus
Magnesium

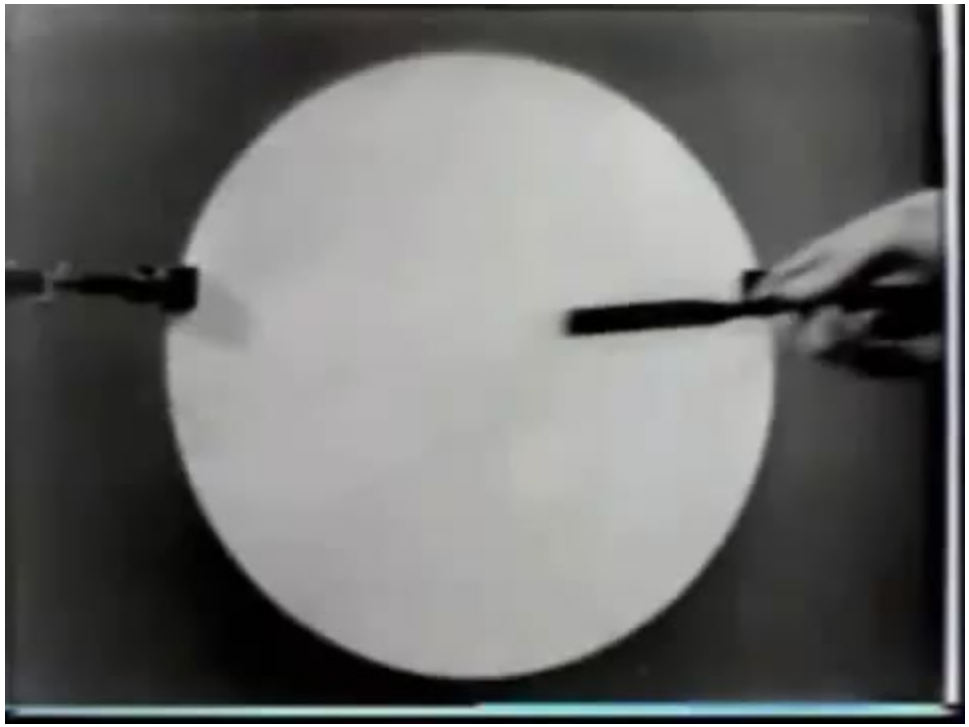


Flammable Solids

Aluminum dust

Pyrophoric Liquids or Solids

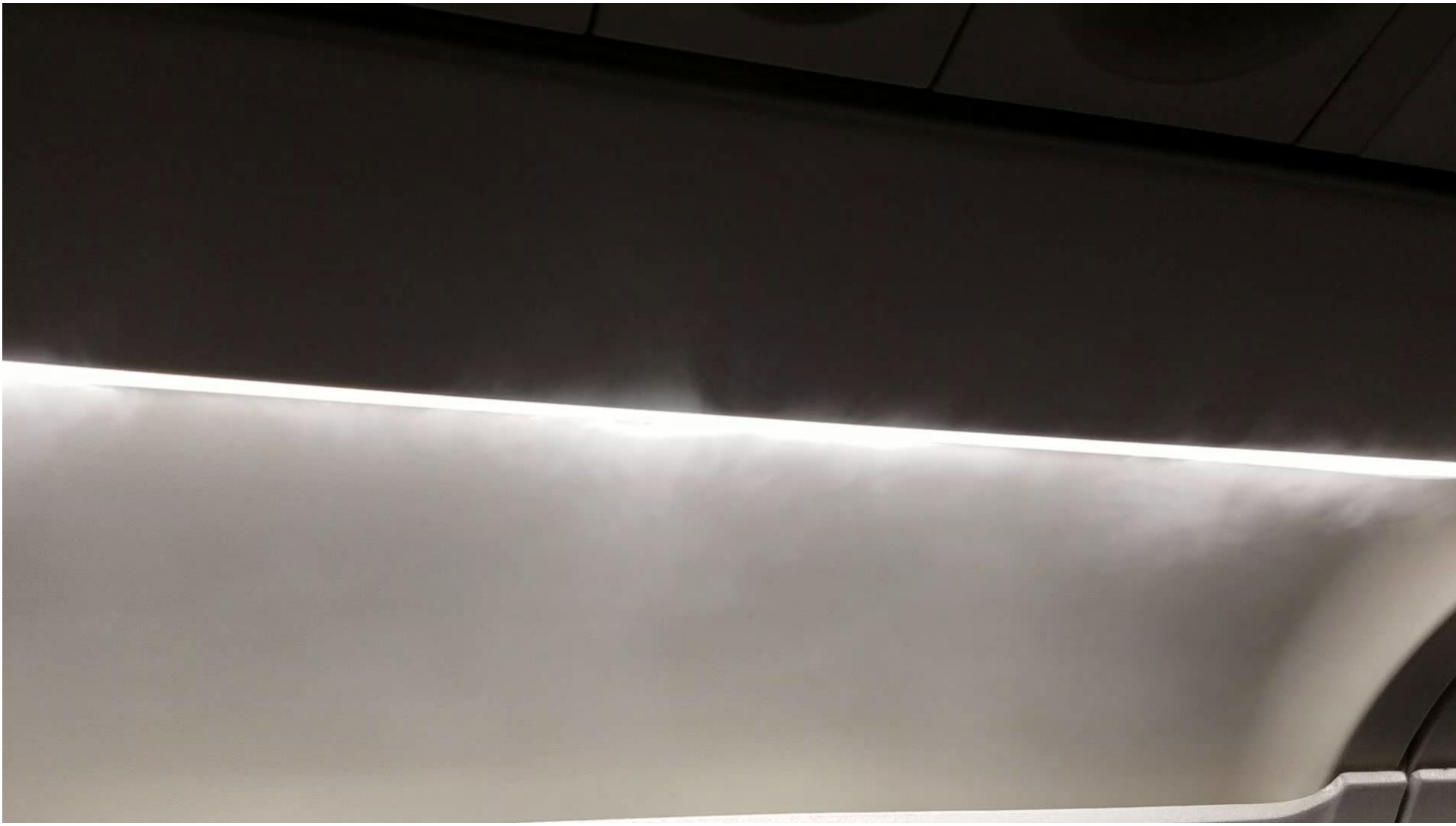
- A Liquid or solid which, even in small quantities, is liable to ignite within five minutes after coming into contact with air



SAMSUNG 7 Note Phone battery

The RED color is the Lithium

Moisture on an Airplane

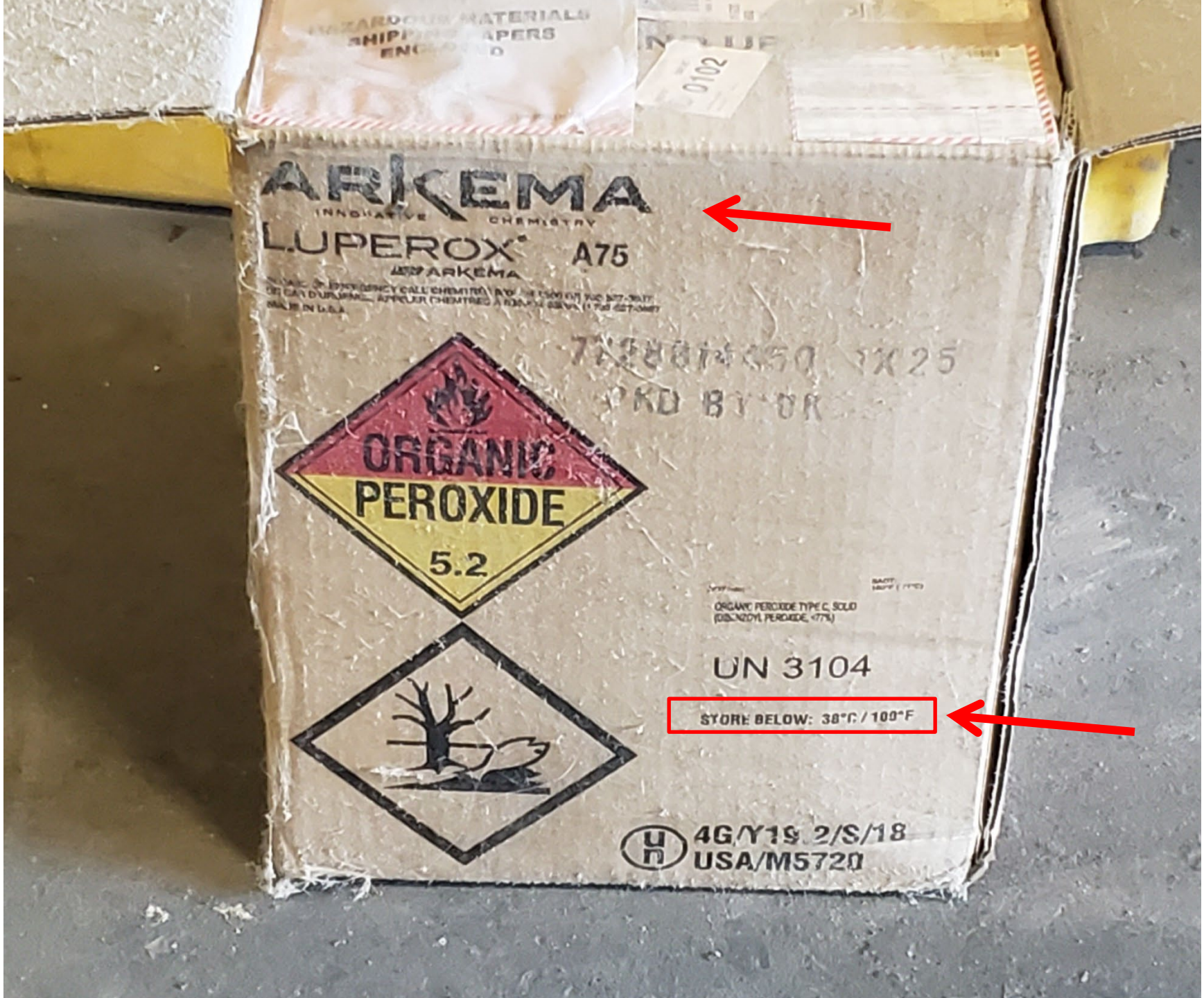


Oxidizers & Organic Peroxides (Class 5)

- Red Fuming Nitric Acid
- Nitrogen tetroxide
- Potassium nitrate
- Ammonium Nitrate
- Chlorine gas
- Dry Pool Bleach (Shock)

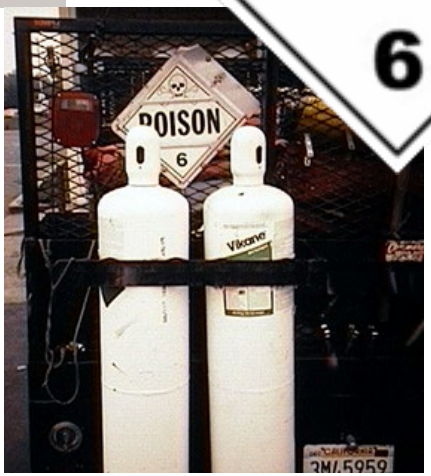
- Epoxy Glue Catalyst
- Methyl Ethyl Ketone Peroxide (MEKP)


ORGANIC
PEROXIDE
5.2


ARKEMA
INNOVATIVE CHEMISTRY
LUPEROX A75
ARKEMA
ORGANIC
PEROXIDE
5.2
ORGANIC PEROXIDE TYPE C, SOLID
UN 3104
STORE BELOW: 38°C / 100°F
4G/Y19.2/S/18
USA/M5720

Poisonous & Infections Materials (Class 6)

- Hydrazine
- Nicotine
- Ebola
- Fumigants
- Pesticides

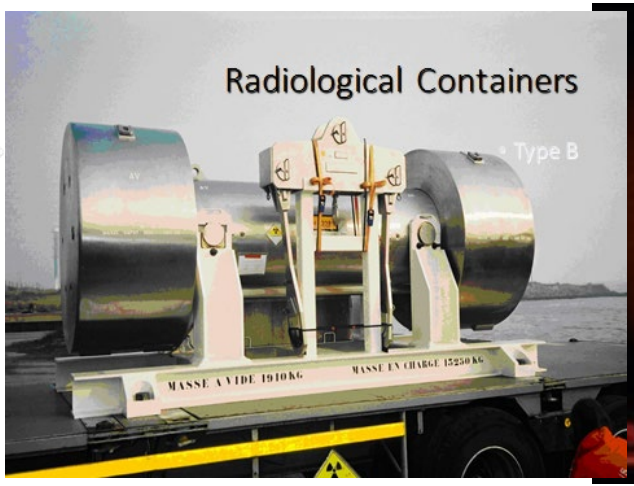


Placards and Labels

- Background color, symbol and number at bottom all correspond to hazard class

Radioactive Materials (Class 7)

- Uranium Hexafluoride
- Thorium
- Soil Penetrometers
- Industrial X-Ray Material

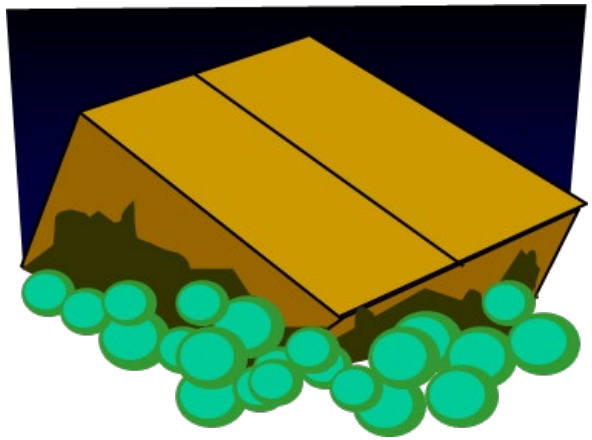


Labels

Label	Radiation Level Associated With Intact Package
Radioactive White-I	Almost-no radiation- 0.5 mrem/hr -maximum on surface.
Radioactive Yellow-II	Low radiation levels - 50 mrem/hr maximum on surface; 1 mrem/hr maximum at 3 ft.
Radioactive Yellow-III	Higher radiation levels - 200 mrem/hr maximum on surface; 10 mrem/hr maximum at 3 ft. Also required for fissile class III or large quantity shipments, regardless of radiation level.

Labels Required On Package Exterior.
Standard size is approximately 4" X 4".

Corrosive Materials (Class 8)

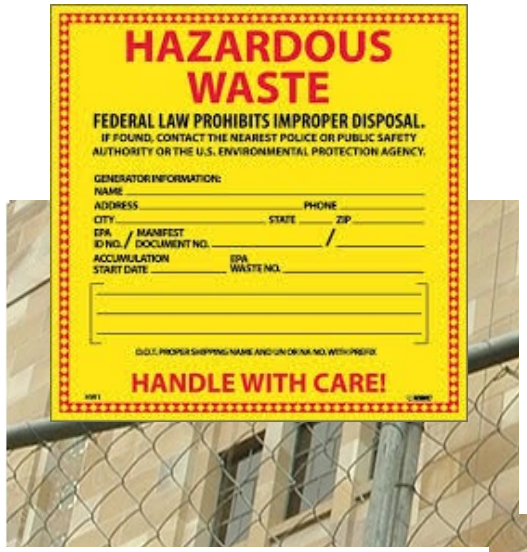


- Bleach (Chlorox®)
- Sodium Hydroxide - Lye
- Sulfuric Acid – Battery Acid
- Hydrazine
- Muriatic Acid


الحرية

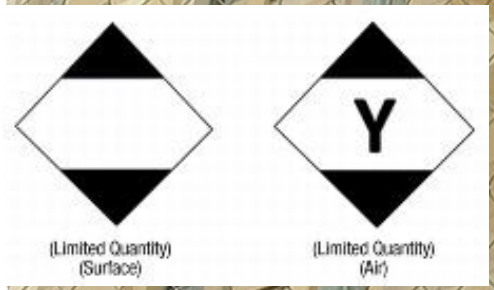
Misc. Hazardous Materials (Class 9)

- Ammonium nitrate fertilizers
- Hazardous waste
- Automobiles
- Asbestos
- Many Household products



New

ORM-D not used after 12/31/20 by ground transport



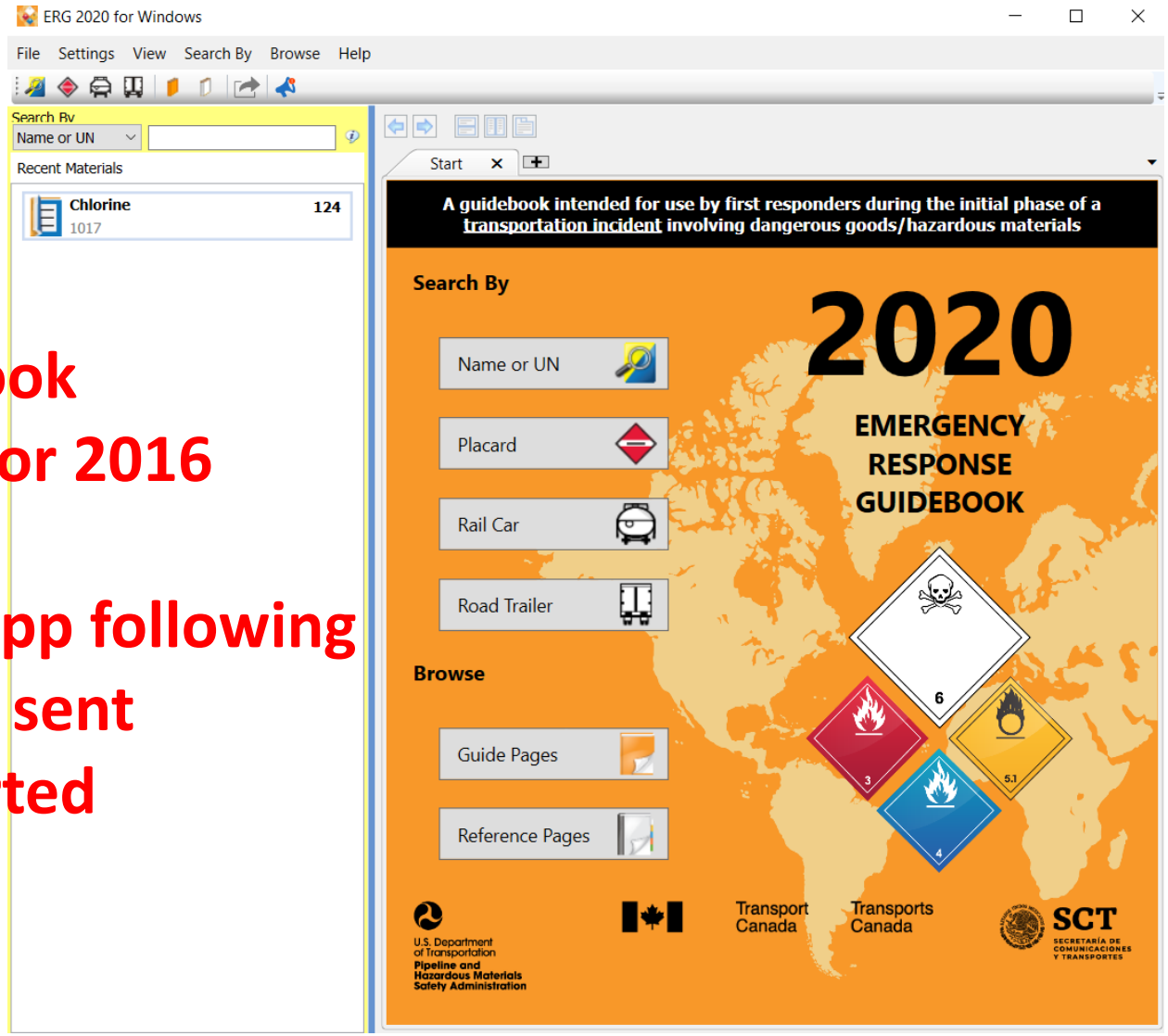
Inside each box, a device about the size of a cellphone measures temperatures, records GPS and can detect if a box is opened. Pfizer can track the boxes until they arrive at their destinations.


Pfizer
Powered by
Controlant
Shipment status
Connection
Battery
Start Shipment
(Press and hold for 3 seconds)
Stop Shipment
(Press and hold for 3 seconds)
CMS 1000F348

Compliant as of January 1, 2021,

- The new, smaller marks are 100 mm X 100 mm and 100 mm X 70 mm with bolder hashmarks.
- Previous: 120 mm X 110 mm and 105 mm X 74 mm.

Get your ERG book
Prefer the 2020 or 2016
or
Download the App following
The instructions sent
Before class started



https://www.phmsa.dot.gov/hazmat/erg/erg2020-mobileapp

Later you will want to log into www.kahoot.it to play this


ACCREDITING AGENCY
California
Unified
Program
Annual
Training
Conference
www.calcupa.org

BREAK TIME!


CALIFORNIA
CUPA
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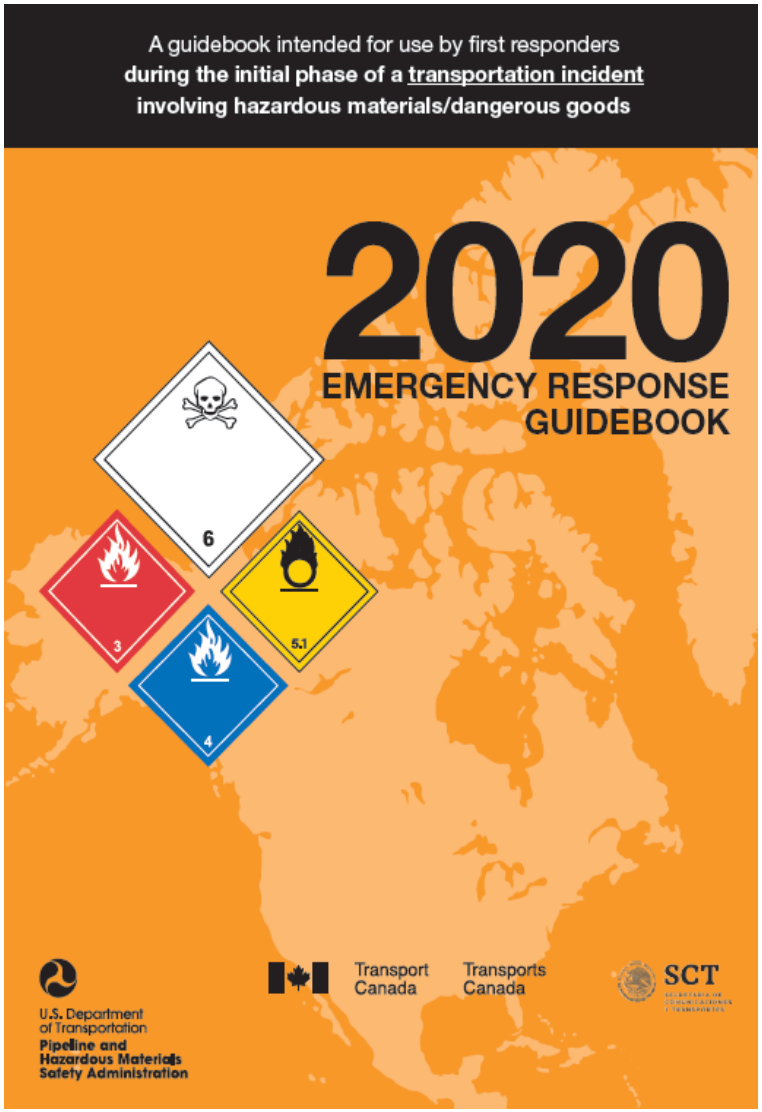


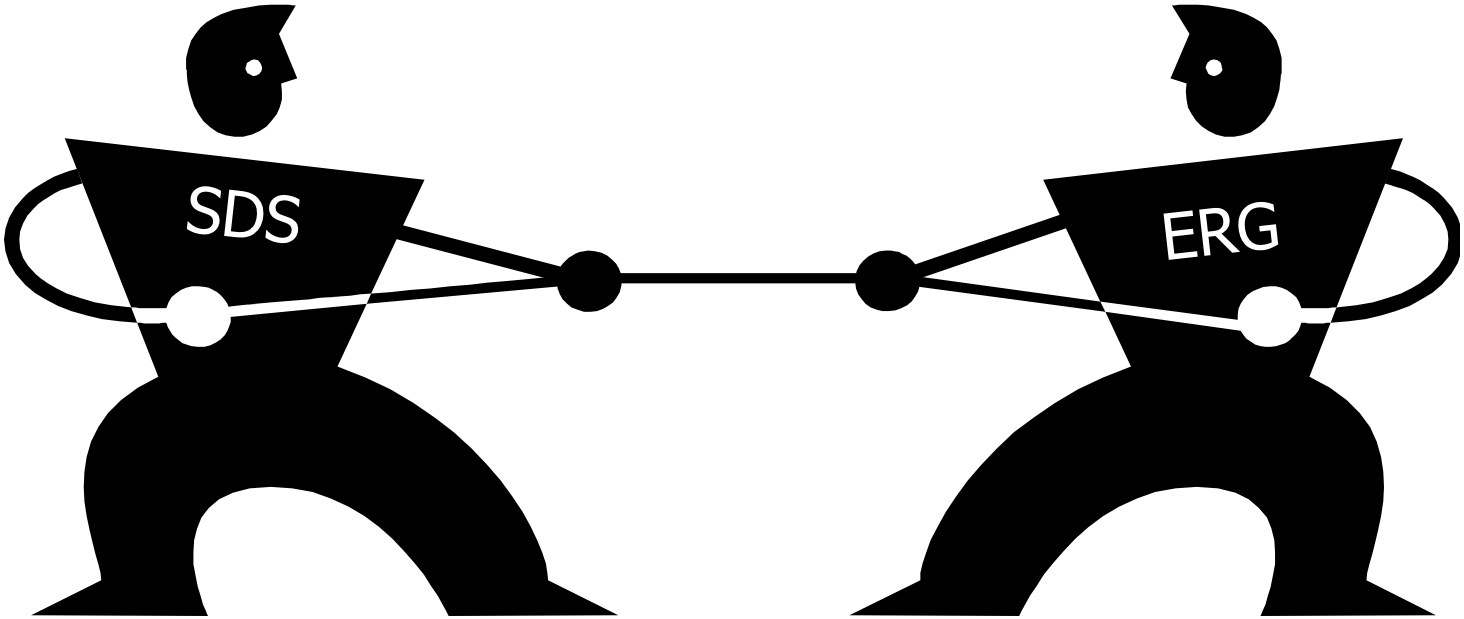
Updated every 4 years

DOT Emergency Response Guidebook (ERG)

Intended use -
"initial phase"
for perimeters

ERG versus SDS

- ERG – Initial transportation incidents
- Safety Data Sheet (SDS)
  - all other incidents
  - Longer term incidents!



ERG 2020 FREE

ERG 2020 for Android

or Iphone

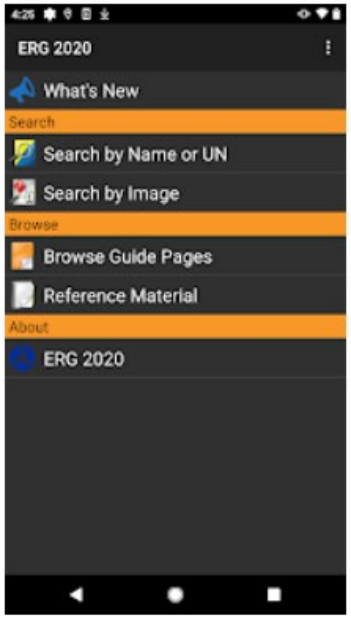
National Library of Medicine at NIH Medical

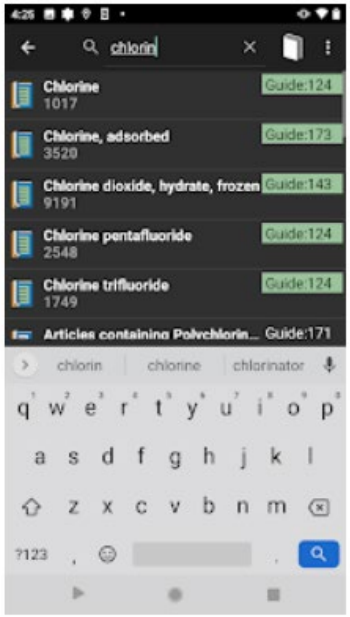
★★★★☆ 2,878

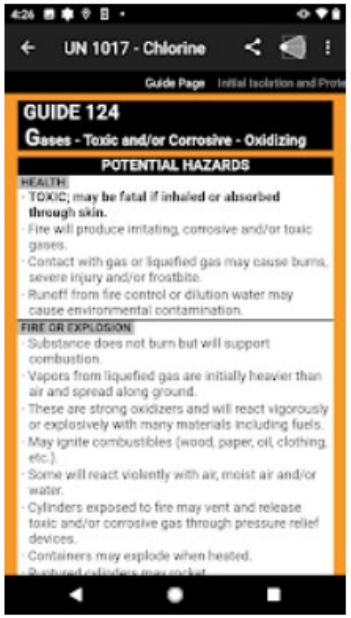
Everyone 10+

This app is compatible with your device.

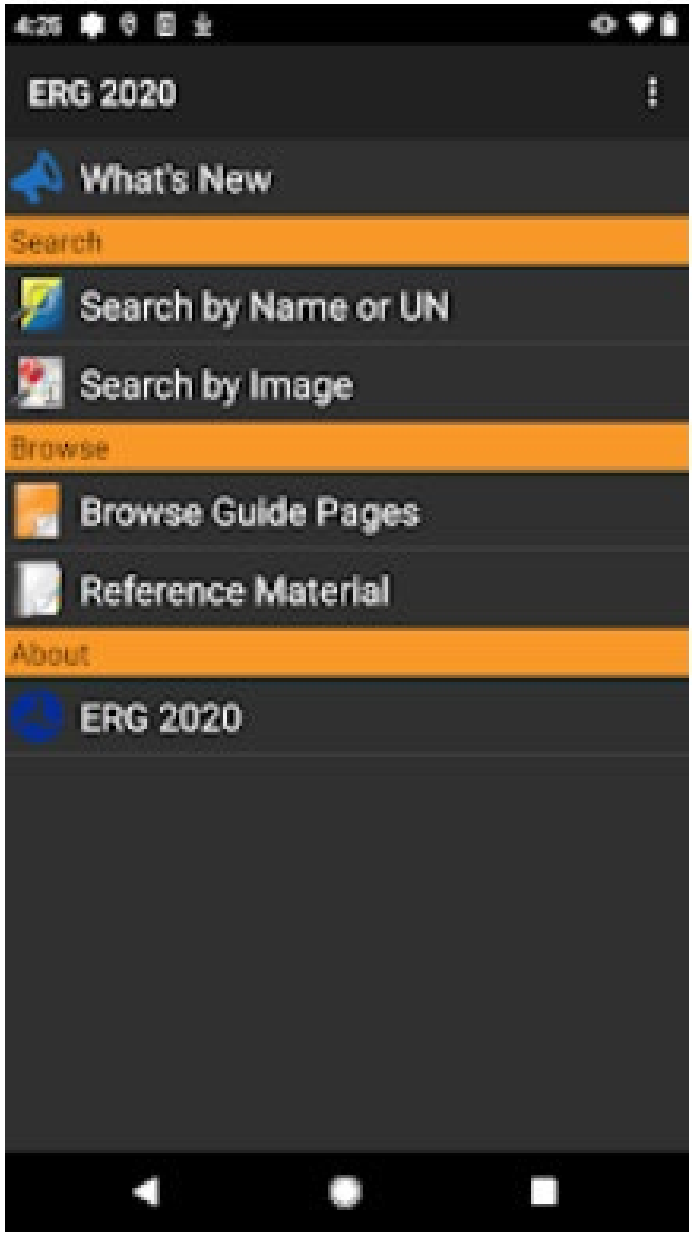
Installed



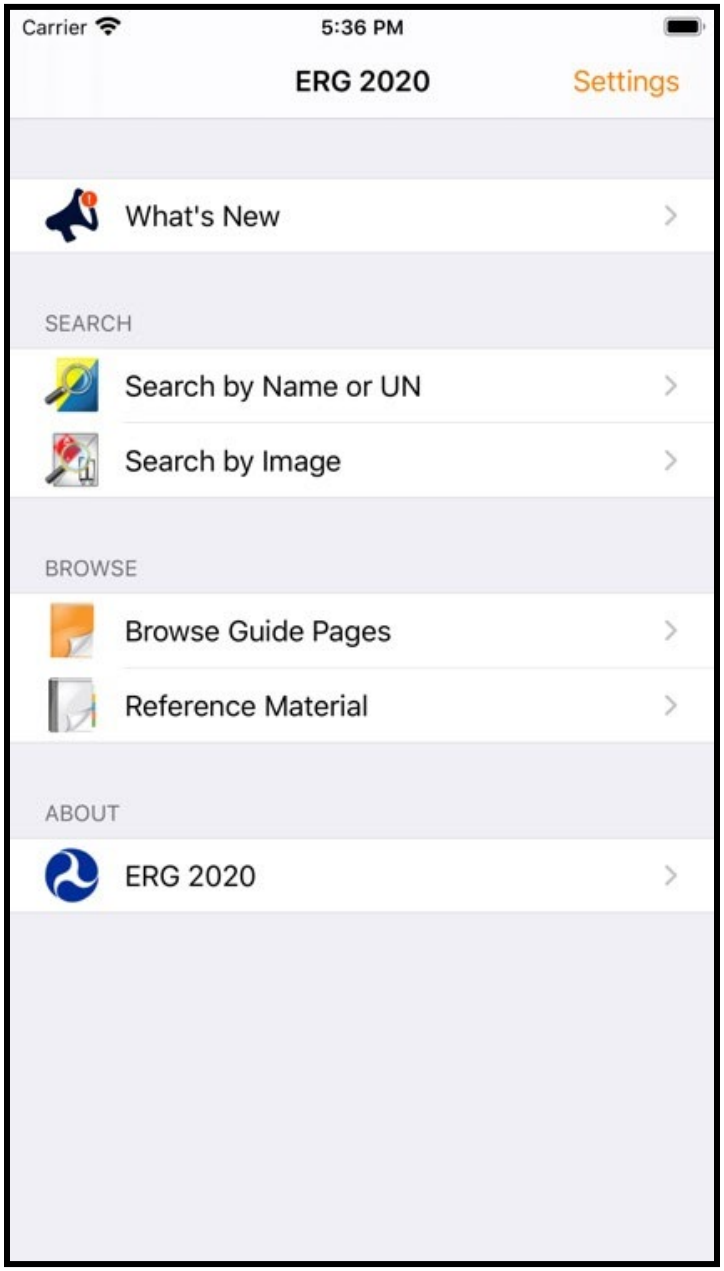




http://phmsa.dot.gov/hazmat/erg-mobile-app

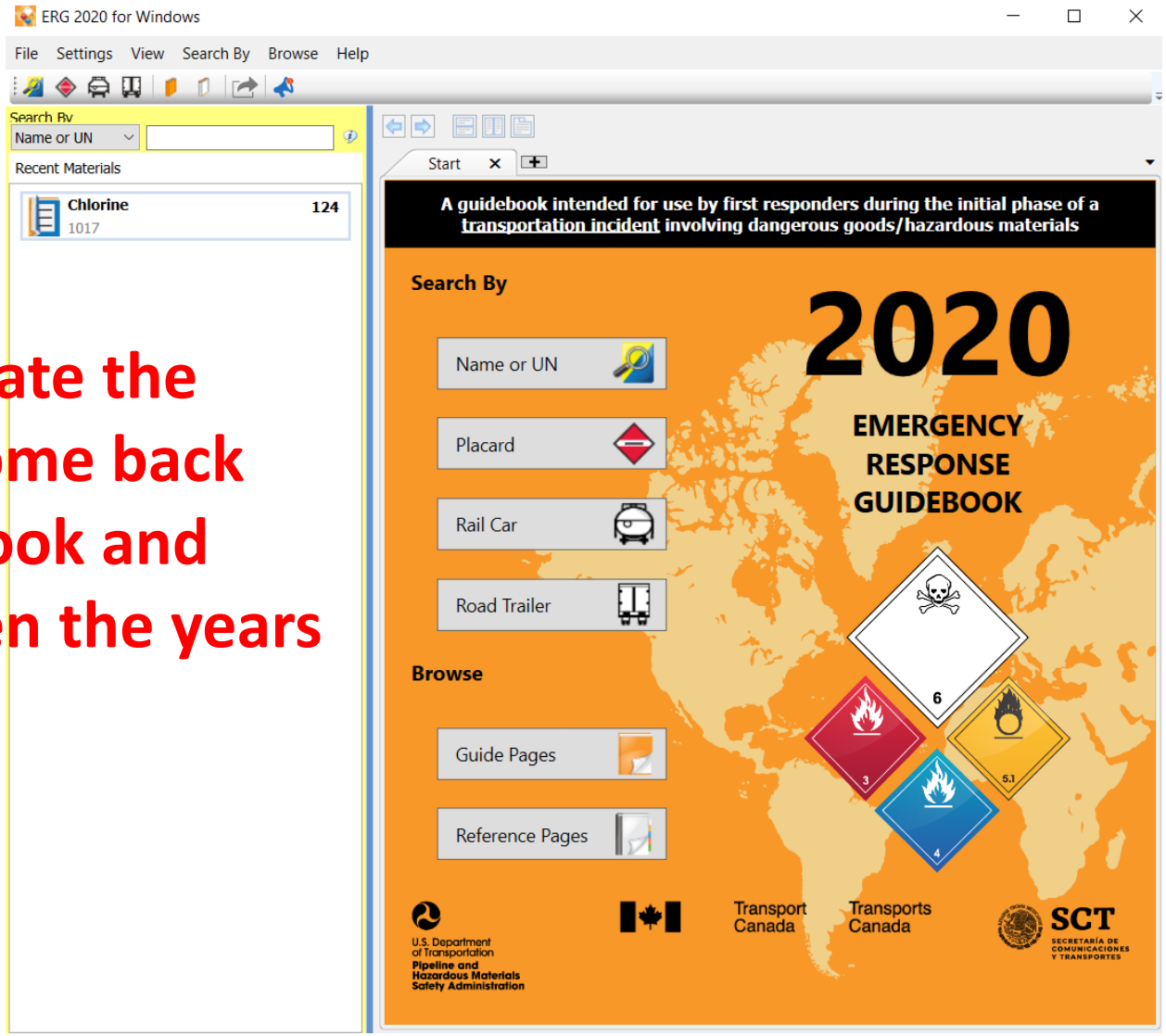


Android phone



Apple phone

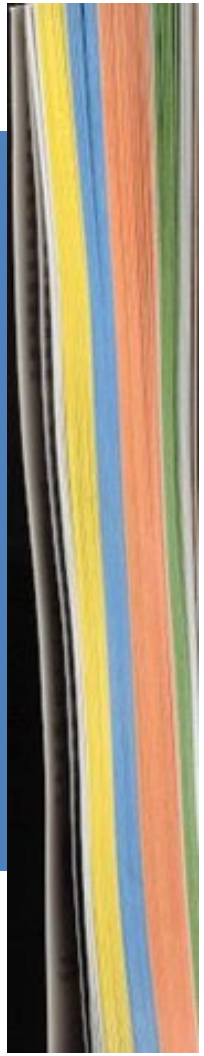
Let us demonstrate the APP and then come back To look at the book and Changes between the years



https://www.phmsa.dot.gov/hazmat/erg/erg2020-mobileapp

ERG Organization

- White — Basic info & instructions
- Yellow — UN #, guide # & material name
- Blue — Material name, guide # and UN #
- Orange — Guide number pages
- Green —Isolation & Protective Actions
  - Small and large quantity spills



ERG—Good But Limited

- Classification of hazard
  - Shipping Papers description behind cover
  - Flow Chart how to use book p.1
  - List of hazard classes p.6
  - Pictures of placards p7-9
  - Pictures of tank cars p.10-14
  - GHS information p.15-17
  - Explosive stand off distances p. 373-374
- **Guides** — "most essential guidance"
- Isolation/evacuation distances — guides

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

2020
EMERGENCY RESPONSE GUIDEBOOK

U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration

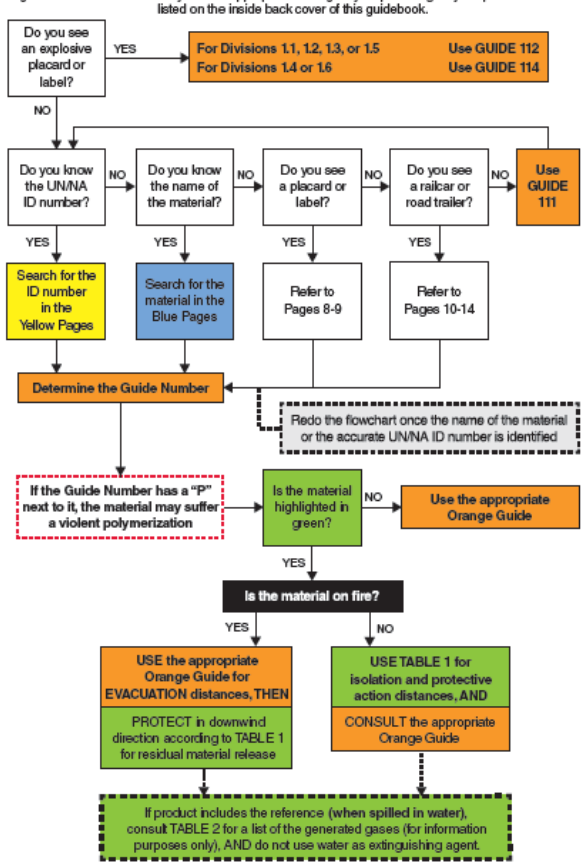
Transport Canada Transports Canada

SCT
SECRETARÍA DE COMUNICACIONES Y TRANSPORTES

HOW TO USE THIS GUIDEBOOK

RESIST RUSHING IN!
APPROACH INCIDENT FROM UPWIND, AND UPHILL AND/OR UPSTREAM
STAY CLEAR OF ALL SPILLS, VAPORS, FUMES, SMOKE, AND POTENTIAL HAZARDS

WARNING: DO NOT USE THIS FLOWCHART if more than one hazardous material/dangerous good is involved. Immediately call the appropriate emergency response agency telephone number listed on the inside back cover of this guidebook.



BEFORE AN EMERGENCY - BECOME FAMILIAR WITH THIS GUIDEBOOK!
First responders must be trained in the use of this guidebook.

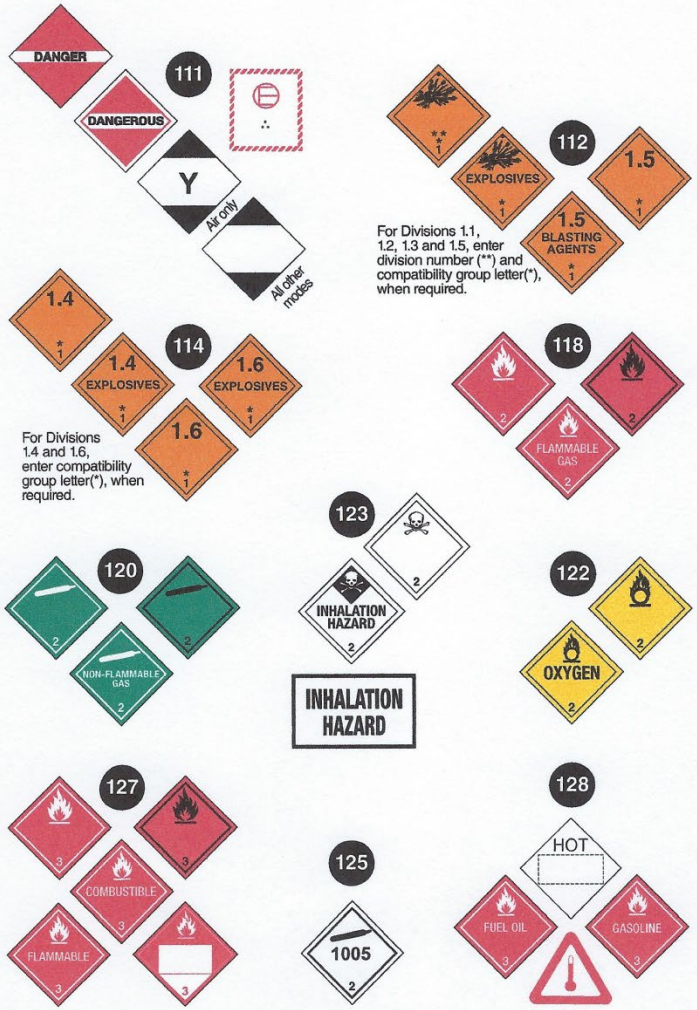
Emergency Response Guidebook 2020
Updates since 2016 edition

Summary of updates: White pages

- Minor edits based on plain language review
- Improved illustrations for railcar and road trailer identification charts
- New additions:
  - Lithium battery label and marking p. 9
  - Decontamination section p. 362
  - Heat Induced Tear (HIT) & (BLEVE) basic information p. 365
  - CBRNE explanations p, 368
  - New terms in glossary section

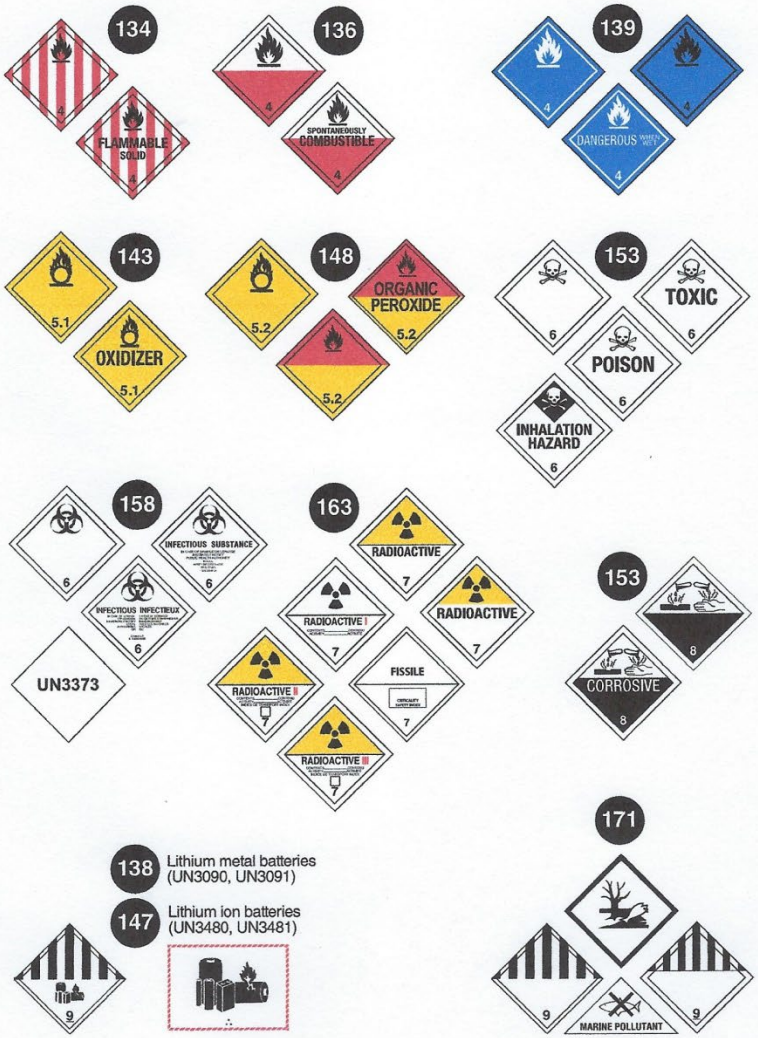
TABLE OF MARKINGS, LABELS, AND PLACARDS

USE THIS TABLE ONLY IF MATERIALS CANNOT BE SPECIFICALLY IDENTIFIED BY



AND INITIAL RESPONSE GUIDE TO USE ON-SCENE

USING THE SHIPPING PAPER, NUMBERED PLACARD, OR ORANGE PANEL NUMBER



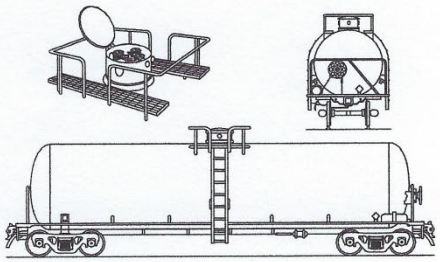
RAIL CAR IDENTIFICATION CHART

CAUTION: Emergency response personnel must be aware that rail tank cars vary widely in construction, fittings and purpose. Tank cars could transport products that may be solids, liquids or gases. The products may be under pressure. It is essential that products be identified by consulting shipping papers or train consist or contacting dispatch centers before emergency response is initiated. The information stenciled on the sides or ends of tank cars, as illustrated below, may be used to identify the product utilizing:

a. the commodity name shown;
b. the other information shown, especially reporting marks and car number which, when supplied to a dispatch center, will facilitate the identification of the product.

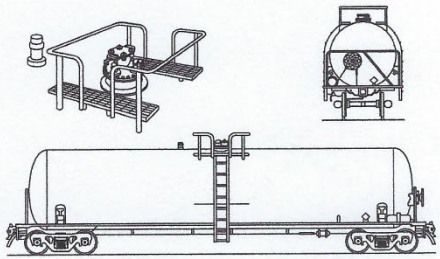
The recommended guides should be considered as last resort if the material cannot be identified by any other means.

117 Pressure tank car



- For flammable, non-flammable, toxic and/or liquefied compressed gases
- Protective housing
- No bottom fittings
- Pressures usually above 40 psi

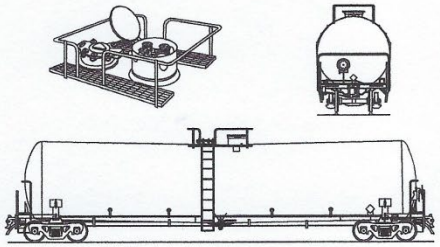
131 Non-pressure / low pressure tank car



- Known as **general service tank car**
- For variety of hazardous and non-hazardous materials
- Fittings and valves normally visible at the top of the tank
- Some may have bottom outlet valve
- Pressures usually below 25 psi

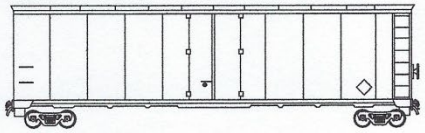
RAIL CAR IDENTIFICATION CHART

128 Non-pressure / low pressure tank car (TC117, DOT117)



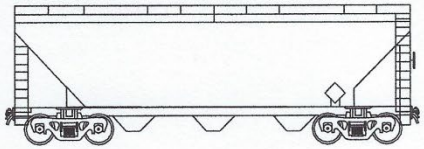
- For flammable liquids (e.g.,
- Petroleum crude oil, ethanol)
- Protective housing separate from manway
- Bottom outlet valve
- Pressures usually below 25 psi

111 Box car



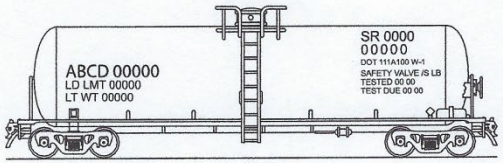
- For general freight that carry bulk or non-bulk packages
- May transport hazardous materials/dangerous goods in small packages or "tote bins"
- Single or double sliding door

140 Hopper car



- For bulk commodities and bulk cargo (e.g., coal, ore, cement and solid granular materials)
- Bulk lading discharged by gravity through the hopper bottom doors when doors opened

COMMON MARKINGS ON RAIL CARS: reporting marks and car number, load limit (pounds or kilograms), empty weight of car, placard, tank qualification and pressure relief device information, car specification, and commodity name.



ROAD TRAILER IDENTIFICATION CHART

CAUTION: This chart depicts only the most general shapes of road trailers and cargo transport units. Emergency response personnel must be aware that there are many variations of road trailers, not illustrated below, that are used for shipping chemical products. Many intermodal tanks that transport liquids, solids, liquefied compressed gases, and refrigerated liquefied gases have similar silhouettes. The suggested guides are for the most hazardous products that may be transported in these trailer types.

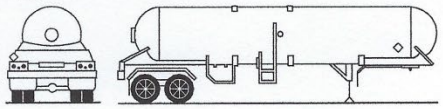
WARNING: Road trailers may be jacketed, the cross-section may look different than shown and external ring stiffeners would be invisible.

NOTE: An emergency shut-off valve is commonly found at the front of the tank, near the driver door.

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

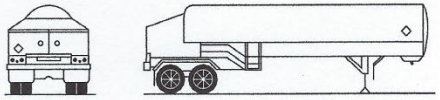
MAWP: Maximum Allowable Working Pressure.

117 MC331, TC331, SCT331



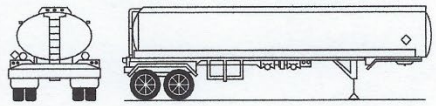
- For liquefied compressed gases (e.g., LPG, ammonia)
- Rounded heads
- Design pressure between 100-500 psi

117 MC338, TC338, SCT338, TC341, CGA341



- For refrigerated liquefied gases (cryogenic liquids)
- Similar to a "giant thermo-bottle"
- Fitting compartments located in a cabinet at the rear of the tank
- MAWP between 25-500 psi

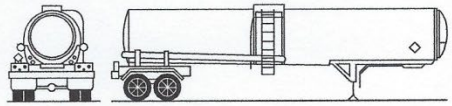
131 DOT406, TC406, SCT306, MC306, TC306



- For flammable liquids (e.g., gasoline, diesel)
- Elliptical cross-section
- Rollover protection at the top
- Bottom outlet valves
- MAWP between 3-15 psi

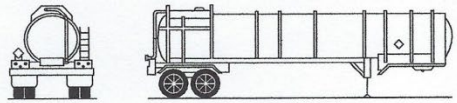
ROAD TRAILER IDENTIFICATION CHART

137 DOT407, TC407, SCT307, MC307, TC307



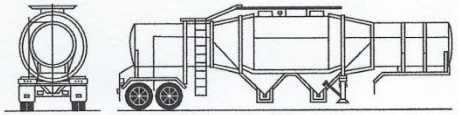
- For toxic, corrosive, and flammable liquids
- Circular cross-section
- May have external ring stiffeners
- MAWP of at least 25 psi

137 DOT412, TC412, SCT312, MC312, TC312



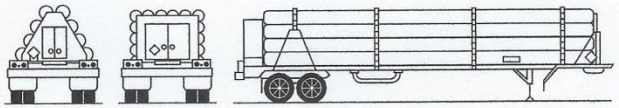
- Usually for corrosive liquids
- Circular cross-section
- External ring stiffeners
- Tank diameter is relatively small
- MAWP of at least 15 psi

112 TC423



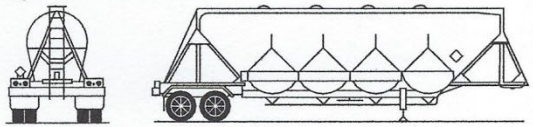
- For emulsion and water-gel explosives
- Hopper-style configuration
- MAWP between 5-15 psi

117 Compressed Gas/Tube Trailer

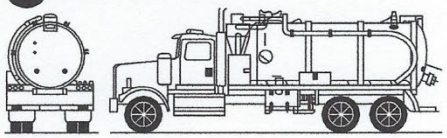


ROAD TRAILER IDENTIFICATION CHART

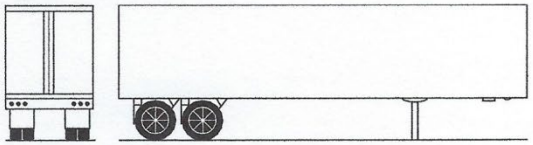
134 Dry Bulk Cargo Trailer



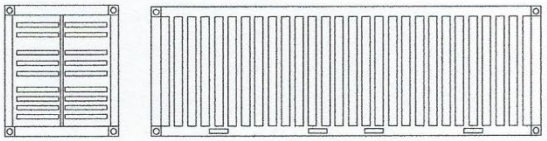
137 Vacuum Tanker



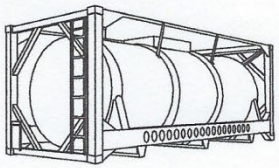
111 Mixed Cargo



111 Intermodal Freight Container



117 Intermodal Tank



DECONTAMINATION

The ways to decontaminate people and equipment can vary. If you need help with decontamination, contact the emergency response telephone number provided on the shipping papers or the agencies listed on the inside back cover. These resources may be able to put you in contact with the chemical manufacturer to determine the appropriate procedure if not otherwise available.

Decontamination is the process of removing or neutralizing hazardous materials/dangerous goods that have contaminated people and equipment during an incident.

Contamination happens in the area generally referred to as the Hot Zone. Everything and everyone entering this zone should be decontaminated when leaving, including emergency response personnel. This reduces the chances that more contamination will occur.

There are two main types of contamination:

- **Direct contamination** happens in the Hot Zone.
- **Cross contamination** happens when someone or something outside the Hot Zone was not properly decontaminated and comes in contact with another object or person, usually in the Warm or Cold Zone.

To decontaminate, you must:

- physically remove contaminants; and/or
- chemically neutralize contaminants*.

The NFPA 472, Chapter 3, describes the following four kinds of decontamination.

(1) **Gross decontamination:** Quickly removing surface contamination, which usually happens by mechanically removing the contaminant or rinsing with water from handheld hose lines, emergency showers, or other nearby water sources.

(2) **Technical decontamination:** Reducing contamination to a level as low as possible by chemical or physical methods. A hazmat team will perform this kind of decontamination.

(3) **Mass decontamination:** Reducing or removing surface contaminants as fast as possible from a large number of people in potentially life-threatening situations.

(4) **Emergency decontamination:** Immediately reducing contamination of people in potentially life-threatening situations with or without formally setting up a decontamination corridor. This process should be performed upwind and uphill from victims. Responders should avoid contact with victims, runoff or spray from the decontamination process.

Emergency and mass decontamination can be done with firefighting and rescue operations equipment. Nozzles can be put on wide-angle fog patterns and sprayed towards the ground to create a decontamination shower. Responders can also place nozzles on the discharge ports of engines.

Contaminated clothing and equipment must be removed after use and stored in a controlled area (Warm Zone) until cleanup procedures can begin. Sometimes protective clothing and equipment cannot be decontaminated and must be disposed of properly.

*Chemical neutralization releases heat. DO NOT PERFORM on a victim.

Summary of updates: Yellow and Blue Pages

- UN numbers for Chemical Warfare Agents were removed
- Removed and added UN numbers based on UN and North American regulations
- **Reviewed** polymerization hazards for certain materials
- Re-evaluated guide assignment for some materials

Summary of updates: Orange pages

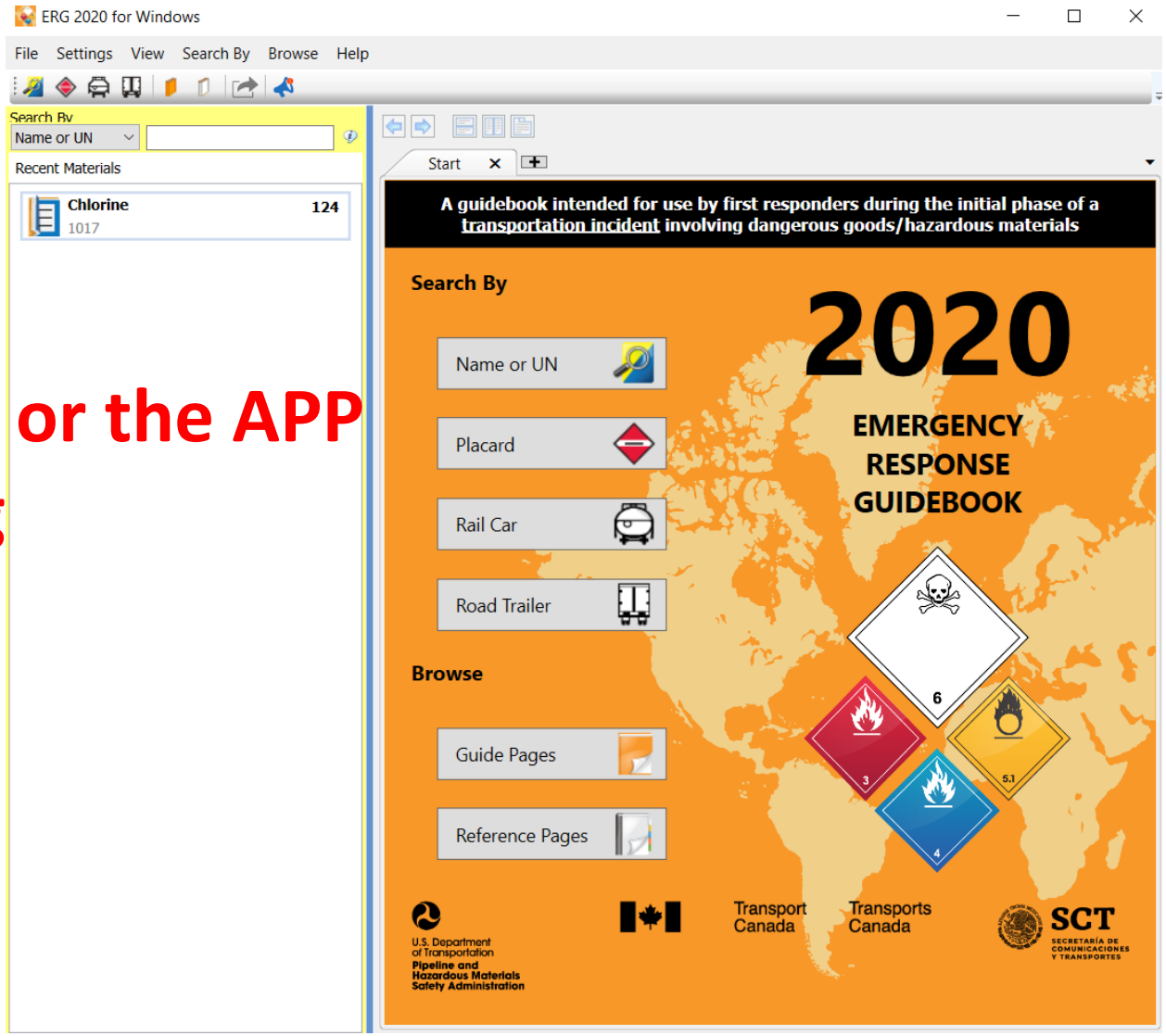
- Created new *How to use the orange guide pages* section p. 156
- Guide 121 *Gases - inert* was merged with Guide 120 *Gases - inert (Including refrigerated liquids)*
- Added CAUTION sentences for specific materials
- Comprehensive review of the sentences in the orange pages by FEMA/NFA
- Distances in PUBLIC SAFETY section are now in **EVACUATION section**

Summary of updates: Green pages

- Additional explanations of use for Green sections p. 286-293
- New terms in glossary section

USE your book or the APP

And play along



https://www.phmsa.dot.gov/hazmat/erg/erg2020-mobileapp

ERG

- Look up **Chlorine**
  - Is this gas or liquid or solid?
  - How did you find it?

Yellow section

ID No.	Guide No.	Name of Material
1013	120	Carbon dioxide
1013	120	Carbon dioxide, compressed
1014	122	Carbon dioxide and Oxygen mixture, compressed
1014	122	Oxygen and Carbon dioxide mixture, compressed
1015	126	Carbon dioxide and Nitrous oxide mixture
1015	126	Nitrous oxide and Carbon dioxide mixture
[illegible]		
1016	119	Carbon monoxide, compres[illegible]
1017	124	Chlorine
1018	126	Chlorodifluoromethane
1018	126	Refrigerant gas R-22
1020	[illegible]	[illegible]ethane
1020	126	Refrigerant gas R-115
1021	126	1-Chloro-1,2,2,2-tetrafluoroethane
1021	126	Refrigerant gas R-124
1022	126	Chlorotrifluoromethane
1022	126	Refrigerant gas R-13
1023	119	Coal gas
1023	119	Coal gas, compressed
1026	119	Cyanogen
1027	115	Cyclopropane
1028	126	Dichlorodifluoromethane
1028	126	Refrigerant gas R-12
1029	126	Dichlorofluoromethane
1029	126	Refrigerant gas R-21
1030	115	1,1-Difluoroethane
1030	115	Refrigerant gas R-152a
1032	118	Dimethylamine, anhydrous
1033	115	Dimethyl ether
1035	115	Ethane
1035	115	Ethane, compressed
1036	118	Ethylamine
1037	115	Ethyl chloride
1038	115	Ethylene, refrigerated liquid (cryogenic liquid)
1039	115	Ethyl methyl ether
1039	115	Methyl ethyl ether
1040	119P	Ethylene oxide
1040	119P	Ethylene oxide with Nitrogen
1041	115	Carbon dioxide and Ethylene oxide mixture, with more than 9% but not more than 87% Ethylene oxide
1041	115	Ethylene oxide and Carbon dioxide mixture, with more than 9% but not more than 87% Ethylene oxide
1043	125	Fertilizer, ammoniating solution, with free Ammonia
1044	126	Fire extinguishers with compressed or liquefied gas
1045	124	Fluorine
1045	124	Fluorine, compressed
1046	120	Helium
1046	120	Helium, compressed
1048	125	Hydrogen bromide, anhydrous
1049	115	Hydrogen
1049	115	Hydrogen, compressed
1050	125	Hydrogen chloride, anhydrous
1051	117P	Hydrogen cyanide, anhydrous, stabilized
1051	117P	Hydrogen cyanide, stabilized
1052	125	Hydrogen fluoride, anhydrous

Blue Section

Name of Material	Guide No.	ID No.
Carbonyl fluoride	125	2417
Carbonyl fluoride, compressed	125	2417
Carbonyl sulfide	119	2204
Carbonyl sulphide	119	2204
Castor beans, meal, pomace or flake	171	2969
Caustic alkali liquid, n.o.s.	154	1719
Caustic potash, solid	154	1813
Caustic potash, solution	154	1814
Caustic soda, solid	154	1823
Caustic soda, solution	154	1824
Cells, containing Sodium	138	3292
Celluloid, in blocks, rods, rolls, sheets, tubes, etc., except scrap	133	2000
Celluloid, scrap	135	2002
Cerium, slabs, ingots or rods	170	1333
Cerium, turnings or gritty powder	138	3078
Cesium	138	1407
Cesium hydroxide	157	268[illegible]
Cesium hydroxide, solution	154	2681
Cesium nitrate	140	1451
CG	125	—
Charcoal	133	1361
Chemical kit	154	1760
Chemical kit	171	3316
Chemical sample, poisonous	151	3315
Chemical sample, toxic	151	3315
Chemical under pressure, corrosive, n.o.s.	125	3503
Chemical under pressure, flammable, corrosive, n.o.s.	118	3505
Chemical under pressure, flammable, n.o.s.	115	3501
Chemical under pressure, flammable, poisonous, n.o.s.	119	3504
Chemical under pressure, flammable, toxic, n.o.s.	119	3504
Chemical under pressure, n.o.s.	126	3500
Chemical under pressure, poisonous, n.o.s.	123	3502
Chemical under pressure, toxic, n.o.s.	123	3502
Chloral, anhydrous, stabilized	153	2075
Chlorate and Borate mixture	140	1458
Chlorate and Magnesium chloride mixture, solid	140	1459
Chlorate and Magnesium chloride mixture, solution	140	3407
Chlorates, inorganic, aqueous solution, n.o.s.	140	3210
Chlorates, inorganic, n.o.s.	140	1461
Chloric [illegible] not more than 10% Chloric acid	[illegible]	2626
Chlorine	124	1017
Chlorine, adsorbed	173	3520
[illegible]rine dioxide, hydrate, fro[illegible]	143	91[illegible]
Chlorine pentafluoride	124	2548
Chlorine trifluoride	124	1749
Chlorite solution	154	1908
Chlorites, inorganic, n.o.s.	143	1462
Chloroacetaldehyde	153	2232
Chloroacetic acid, molten	153	3250
Chloroacetic acid, solid	153	1751
Chloroacetic acid, solution	153	1750
Chloroacetone, stabilized	131	1695
Chloroacetonitrile	131	2668

Guide Pages

POTENTIAL HAZARDS

HEALTH

- **TOXIC; may be fatal if inhaled or absorbed through skin.**
- Fire will produce irritating, corrosive and/or toxic gases.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Runoff from fire control or dilution water may cause environmental contamination.

FIRE OR EXPLOSION

- Substance does not burn but will support combustion.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- These are strong oxidizers and will react vigorously or explosively with many materials including fuels.
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- Some will react violently with air, moist air and/or water.
- Cylinders exposed to fire may vent and release toxic and/or corrosive gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

PUBLIC SAFETY

- **CALL 911. Then call emergency response telephone number on shipping paper.** If shipping paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- Keep unauthorized personnel away.
- Stay upwind, uphill and/or upstream.
- Many gases are heavier than air and will spread along the ground and collect in low or confined areas (sewers, basements, tanks, etc.).
- Ventilate closed spaces before entering, but only if properly trained and equipped.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer **when there is NO RISK OF FIRE.**
- Structural firefighters' protective clothing provides thermal protection **but only limited chemical protection.**

EVACUATION

Immediate precautionary measure

- Isolate spill or leak area for at least 100 meters (330 feet) in all directions.

Spill

- See Table 1 - Initial Isolation and Protective Action Distances.

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

In Canada, an Emergency Response Assistance Plan (ERAP) may be required for this product. Please consult the shipping paper and/or the ERAP Program Section (page 390).

EMERGENCY RESPONSE

FIRE

Small Fire

CAUTION: These materials do not burn but will support combustion. Some will react violently with water.

- Contain fire and let burn. If fire must be fought, water spray or fog is recommended.
- **Water only; no dry chemical, CO_2 or Halon®.**
- Do not get water inside containers.
- If it can be done safely, move undamaged containers away from the area around the fire.
- Damaged cylinders should be handled only by specialists.

Fire Involving Tanks

- Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned master stream devices or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- Do not touch or walk through spilled material.
- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Stop leak if you can do it without risk.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Isolate area until gas has dispersed.
- Ventilate the area.

FIRST AID

- Call 911 or emergency medical service.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
- Move victim to fresh air if it can be done safely.
- Give artificial respiration if victim is not breathing.
- **Do not perform mouth-to-mouth resuscitation if victim ingested or inhaled the substance; wash face and mouth before giving artificial respiration. Use a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Clothing frozen to the skin should be thawed before being removed.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim calm and warm.
- Keep victim under observation.
- Effects of contact or inhalation may be delayed.


P2476 AL
7 03
TW1445
HT 1587 01
TW1420
T-1041AL
TW1363

Video from SDGE location across road

Green Pages
Initial Isolation and Protective Action Distances

TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	NAME OF MATERIAL	SMALL SPILLS (From a small package or small leak from a large package) First ISOLATE in all Directions Meters (Feet)	SMALL SPILLS Then PROTECT persons Downwind during DAY Kilometers (Miles)	SMALL SPILLS Then PROTECT persons Downwind during NIGHT Kilometers (Miles)	LARGE SPILLS (From a large package or from many small packages) First ISOLATE in all Directions Meters (Feet)	LARGE SPILLS Then PROTECT persons Downwind during DAY Kilometers (Miles)	LARGE SPILLS Then PROTECT persons Downwind during NIGHT Kilometers (Miles)
——	153	Soman **(when used as a weapon)**	60 m (200 ft)	0.4 km (0.3 mi)	0.7 km (0.5 mi)	300 m (1000 ft)	1.8 km (1.1 mi)	2.7 km (1.7 mi)
——	153	Tabun **(when used as a weapon)**	30 m (100 ft)	0.2 km (0.1 mi)	0.2 km (0.1 mi)	100 m (300 ft)	0.5 km (0.4 mi)	0.6 km (0.4 mi)
——	153	Thickened GD **(when used as a weapon)**	60 m (200 ft)	0.4 km (0.3 mi)	0.7 km (0.5 mi)	300 m (1000 ft)	1.8 km (1.1 mi)	2.7 km (1.7 mi)
——	153	VX **(when used as a weapon)**	30 m (100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	60 m (200 ft)	0.4 km (0.2 mi)	0.3 km (0.2 mi)
1005 1005	125 125	Ammonia, anhydrous Anhydrous ammonia	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	**Refer to table 3**		
1008 1008	125 125	Boron trifluoride Boron trifluoride, compressed	30 m (100 ft)	0.2 km (0.1 mi)	0.7 km (0.5 mi)	400 m (1250 ft)	2.3 km (1.4 mi)	5.1 km (3.2 mi)
1016 1016	119 119	Carbon monoxide Carbon monoxide, compressed	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	200 m (600 ft)	1.2 km (0.7 mi)	4.3 km (2.7 mi)
1017	124	Chlorine	60 m (200 ft)	0.3 km (0.2 mi)	1.4 km (0.9 mi)	**Refer to table 3**		
1026	119	Cyanogen	30 m (100 ft)	0.1 km (0.1 mi)	0.4 km (0.3 mi)	60 m (200 ft)	0.3 km (0.2 mi)	1.1 km (0.7 mi)
1040 1040	119P 119P	Ethylene oxide Ethylene oxide with Nitrogen	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.2 mi)	**Refer to table 3**		
1045 1045	124 124	Fluorine Fluorine, compressed	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	100 m (300 ft)	0.5 km (0.3 mi)	2.3 km (1.4 mi)
1048	125	Hydrogen bromide, anhydrous	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.2 mi)	150 m (500 ft)	1.0 km (0.6 mi)	3.4 km (2.1 mi)
1050	125	Hydrogen chloride, anhydrous	30 m (100 ft)	0.1 km (0.1 mi)	0.3 km (0.2 mi)	**Refer to table 3**		

Green Pages
Table 3

TABLE 3 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES FOR LARGE SPILLS FOR DIFFERENT QUANTITIES OF SIX COMMON TIH (PIH in the US) GASES

	First **ISOLATE** in all Directions		Then **PROTECT** persons Downwind during									
			DAY						**NIGHT**			
			Low wind (< 6 mph = < 10 km/h)		Moderate wind (6-12 mph = 10 - 20 km/h)		High wind (> 12 mph = > 20 km/h)		Low wind (< 6 mph = < 10 km/h)		Moderate wind (6-12 mph = 10 - 20 km/h)		High wind (> 12 mph = > 20 km/h)	
	Meters	(Feet)	km	(Miles)	km	(Miles)	km	(Miles)	km	(Miles)	km	(Miles)	km	(Miles)
TRANSPORT CONTAINER	**UN1005 Ammonia, anhydrous: Large Spills**													
Rail tank car	300	(1000)	1.9	(1.2)	1.5	(0.9)	1.1	(0.6)	4.5	(2.8)	2.5	(1.5)	1.4	(0.9)
Highway tank truck or trailer	150	(500)	0.9	(0.6)	0.5	(0.3)	0.4	(0.3)	2.0	(1.3)	0.8	(0.5)	0.6	(0.4)
Agricultural nurse tank	60	(200)	0.5	(0.3)	0.3	(0.2)	0.3	(0.2)	1.4	(0.9)	0.3	(0.2)	0.3	(0.2)
Multiple small cylinders	30	(100)	0.3	(0.2)	0.2	(0.1)	0.1	(0.1)	0.7	(0.5)	0.3	(0.2)	0.2	(0.1)
TRANSPORT CONTAINER	**UN1017 Chlorine: Large Spills**													
Rail tank car	1000	(3000)	10.1	(6.3)	6.8	(4.2)	5.3	(3.3)	11+	(7+)	9.2	(5.7)	6.9	(4.3)
Highway tank truck or trailer	600	(2000)	5.8	(3.6)	3.4	(2.1)	2.9	(1.8)	6.7	(4.3)	5.0	(3.1)	4.1	(2.5)
Multiple ton cylinders	300	(1000)	2.1	(1.3)	1.3	(0.8)	1.0	(0.6)	4.0	(2.5)	2.4	(1.5)	1.3	(0.8)
Multiple small cylinders or single ton cylinder	150	(500)	1.5	(0.9)	0.8	(0.5)	0.5	(0.3)	2.9	(1.8)	1.3	(0.8)	0.6	(0.4)

TABLE 3

"+" means distance can be larger in certain atmospheric conditions

6 most common TIH materials

- UN1005 - Ammonia, anhydrous
- UN1017 - Chlorine
- UN1040 - Ethylene oxide and UN1040 - Ethylene oxide with nitrogen
- UN1050 - Hydrogen chloride, anhydrous and UN2186 - Hydrogen chloride, refrigerated liquid
- UN1052 - Hydrogen fluoride, anhydrous
- UN1079 - Sulfur dioxide/Sulphur dioxide

FREE

WISER

- http://wiser.nlm.nih.gov

Mobile support - Computer/Cell

  - WISER currently exists as a Stand-alone mobile application for IOS and Android devices
  - Microsoft Windows PC application
  - Web application (WebWISER)

- Identification of an unknown substance and actions
- Over 460 substances from NLM's Hazardous Substances Data Bank (HSDB) which contains detailed information on over 4,700 critical hazardous substances

As of 6/12/2020, **version 6.0.107**

FREE

WISER


CHEMM
REMM
2020
EMERGENCY RESPONSE GUIDEBOOK
CHEMM
ERG
HSDB
WISER
WMD
Response
Guidebook

WISER

- Visualization of protective distance zones on an interactive map.
- Radiological support, including radioisotope substance data, tools, and reference materials.
- Biological support, including biological agent data, tools, and reference materials.
  - Includes Ebola as of 2015
- General tools, including an electronic version of the ERG.

Known Substances

Search for a substance within WISER's database of known substances.

Help Identify Chemical

Identify an unknown chemical based on its physical properties, symptoms of exposure, the environment, and other criteria.

Tools

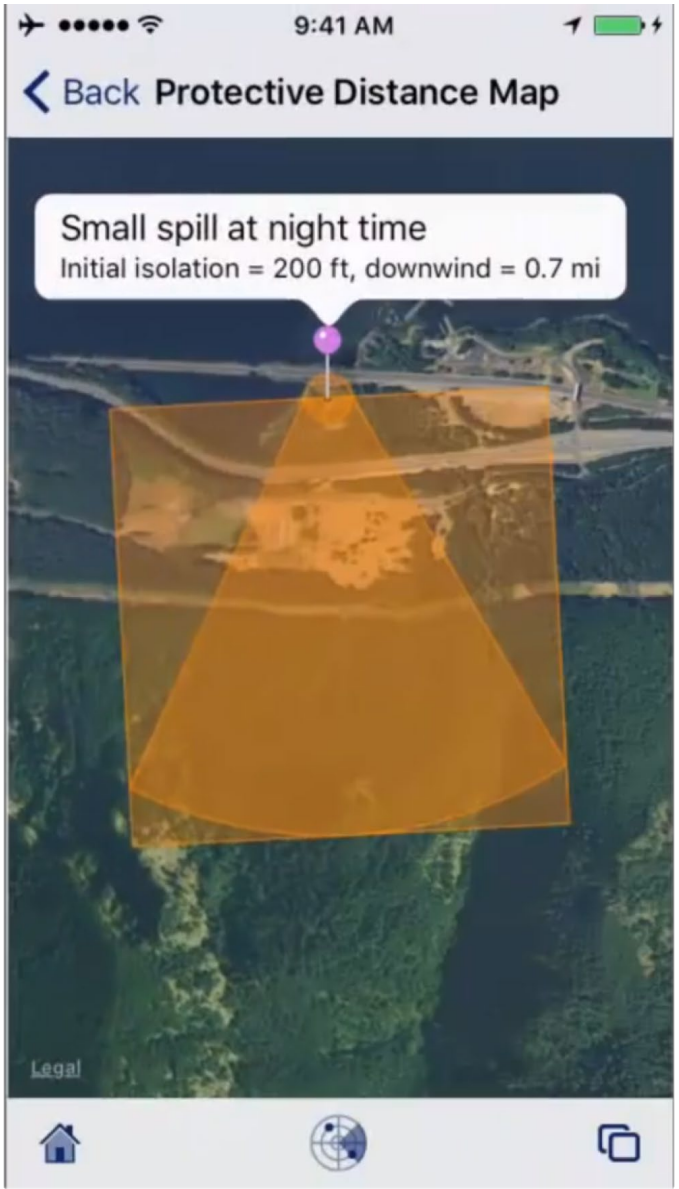
Explore general tools and reference material.

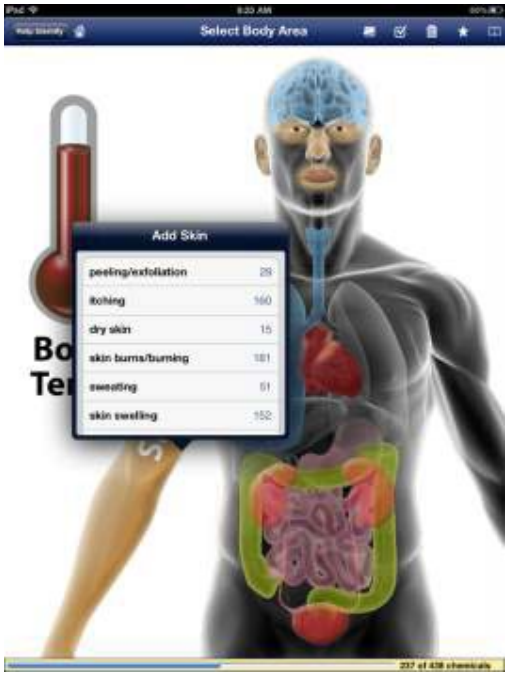
CHEMM

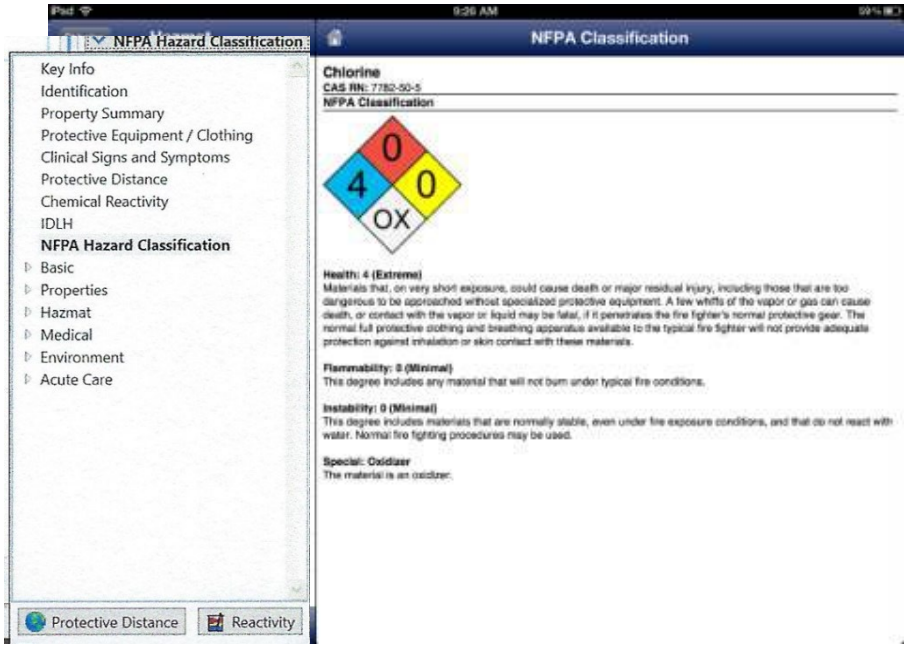
TIME PERMITTING – LET'S DOMONSTATE THIS APP

WISER

WISER


9:41 AM
Back Protective Distance Map
Small spill at night time
Initial isolation = 200 ft, downwind = 0.7 mi
Legal


Select Body Area
Add Skin
peeling/exfoliation
itching
dry skin
skin burns/burning
sweating
skin swelling


NFPA Hazard Classification
NFPA Classification
Key Info
Identification
Property Summary
Protective Equipment / Clothing
Clinical Signs and Symptoms
Protective Distance
Chemical Reactivity
IDLH
NFPA Hazard Classification
Basic
Properties
Hazmat
Medical
Environment
Acute Care
Chlorine
CAS RN: 7782-50-5
NFPA Classification
0
4
0
OX
Health: 4 (Extreme)
Flammability: 0 (Minimal)
Instability: 0 (Minimal)
Special: Oxidizer
Protective Distance
Reactivity


ACCREDITING AGENCY
California
Unified
Program
Annual
Training
Conference
www.calcupa.org

BREAK TIME!

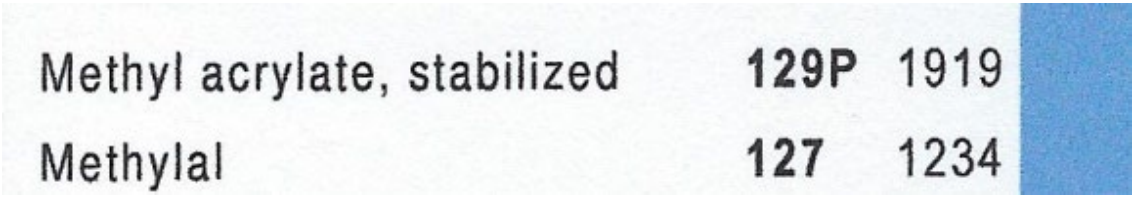

CALIFORNIA
CUPA
FORUM

ERG

- Look up **Methyl Acrylate**, stabilized

  –Anything special about the Guide #?

- ERG page 381



Methyl acrylate, stabilized	**129P**	1919
Methylal	**127**	1234

GUIDE 129 — Flammable Liquids (Water-Miscible/Noxious)

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks, etc.).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a **(P)** may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids will float on water.

HEALTH

- May cause toxic effects if inhaled or absorbed through skin.
- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire will produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or asphyxiation.
- Runoff from fire control or dilution water may cause environmental contamination.

PUBLIC SAFETY

- **CALL 911. Then call emergency response telephone number on shipping paper.** If shipping paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- Keep unauthorized personnel away.
- Stay upwind, uphill and/or upstream.
- Ventilate closed spaces before entering, but only if properly trained and equipped.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing provides thermal protection **but only limited chemical protection.**

EVACUATION

Immediate precautionary measure

- Isolate spill or leak area for at least 50 meters (150 feet) in all directions.

Large Spill

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

In Canada, an Emergency Response Assistance Plan (ERAP) may be required for this product. Please consult the shipping paper and/or the ERAP Program Section (page 390).

EMERGENCY RESPONSE

FIRE

CAUTION: The majority of these products have a very low flash point. Use of water spray when fighting fire may be inefficient.

Small Fire

- Dry chemical, CO_2, water spray or alcohol-resistant foam.
- **Do not use dry chemical extinguishers to control fires involving nitromethane (UN1261) or nitroethane (UN2842).**

Large Fire

- Water spray, fog or alcohol-resistant foam.
- Avoid aiming straight or solid streams directly onto the product.
- If it can be done safely, move undamaged containers away from the area around the fire.

Fire Involving Tanks or Car/Trailer Loads

- Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned master stream devices or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames) from immediate area.
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor-suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean, non-sparking tools to collect absorbed material.

Large Spill

- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapor, but may not prevent ignition in closed spaces.

FIRST AID

- Call 911 or emergency medical service.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
- Move victim to fresh air if it can be done safely.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim calm and warm.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

“P”: polymerization hazard

ERG page 381

Such as Methyl Acrylate, stabilized


Straw
Helps Stop Messy
Foam Drips!
QUICK STOP™ Straw
16 oz.
value size
DOW
GREAT STUFF
INSULATING FOAM SEALANT
GAPS & CRACKS
• Expands to Fill, Seal and Ins
• For Gaps Up To 1 Inch
• Helps Reduce Drafts
DANGER! FLAMMABLE GAS
NET WT. 16 OZ


KEEP FIRE AWAY

Notification Requirements

- Responsible party must make “Mandatory” notifications
  - To proper authorities
  - Releases with potential adverse impact
    - Health
    - Safety
    - Environment

Notification Requirements California

- "Mandatory" notifications
  - Remember to tell your supervisor there was a problem and responders are on their way!!
  - **Local 911 — Local dispatch**
  - CUPA/Administering Agency — ???
  - State Warning Center — (800) 852-7550
  - **National Response Center — (800) 424-8802**
    - **If you have a Reportable Quantity (RQ)**
    - **Section 49CFR 172.101 Table 1 lists the RQ**
    - **Some SDS also list the RQ values**

DOT Reporting §171.15 -16

For serious incidents, person in charge must notify the National Response Center at 1-800-424-8802

Serious Incidents:

- Person is killed
- Injuries require hospitalization
- Evacuation of general public for more than 1 Hr.
- Major transportation artery/facility closed for more than 1 hour
- Flight path or routine of an aircraft is altered
- Accident involving Class 7 or 6.2
- Release of more than 450 L /400 kg of Marine Pollutant
- Person in charge judges it should be reported
- **RQ - Spills**

General. As soon as practical but no later than 12 hours after the occurrence of any incident described in paragraph (b) of this section, each person in physical possession of the hazardous material must provide notice

Responsibility for Notifications

- Business or Spiller makes mandatory notifications
  - **Your legal responsibly and not the responders**

- Responders:
  - Make these if no one else is around
  - May also call as backup
  - Some departments require them to make notifications also (Highway Patrol in some states)

Orange Panels

- See the ERG (pages 16-19)

§ 172.331 - **Bulk packagings** other than portable tanks, cargo tanks, tank cars and multi-unit tank car tanks. (a) Each person who offers a hazardous material to a motor carrier for transportation in a bulk packaging shall provide the motor carrier with the required identification numbers on placards or plain white square-on-point display configurations, as authorized, or shall affix orange panels containing the required identification numbers to the packaging prior to or at the time the material is offered for transportation, unless the packaging is already marked with the identification number as required by this subchapter.

Example US vs International

ERG (pages 16-19)

Use the ERG – What is inside this truck?

Remember what an Orange Panel means?


APRIA HEALTHCARE®
•Home Oxygen Therapy &
Respiratory Medication
•Home IV Therapy
•Home Medical Equipment
1073
OXYGEN
2

November 2018 - Coon Rapids, MN

ERG—Good But Limited

- Look up **UN1760**
  - What is this material?
  - How did you find it?

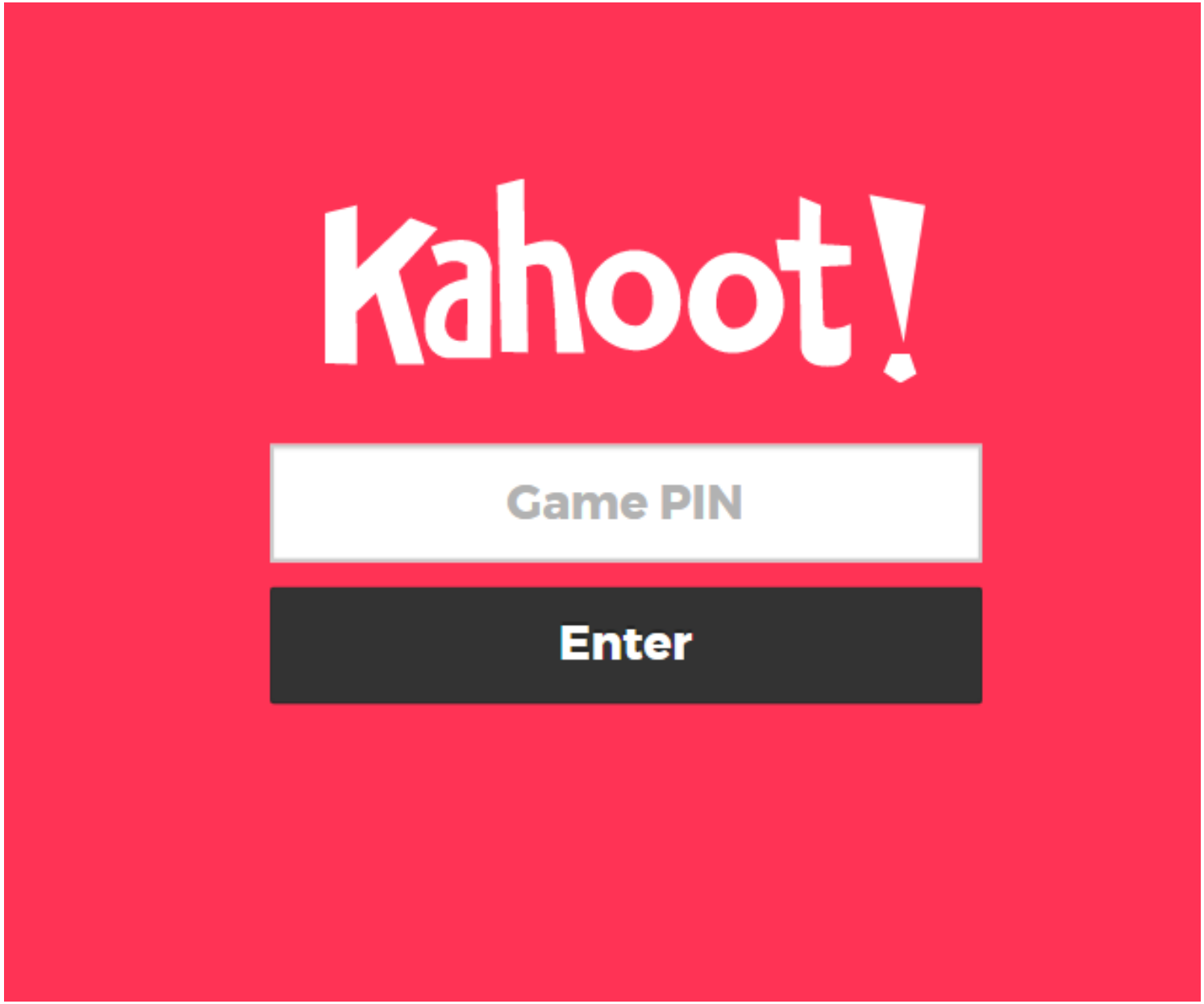
ERG—Good But Limited

- Look up:
  - –What is this material?
  - –How did you find it?
  - –What Guide page?

Placard Limits

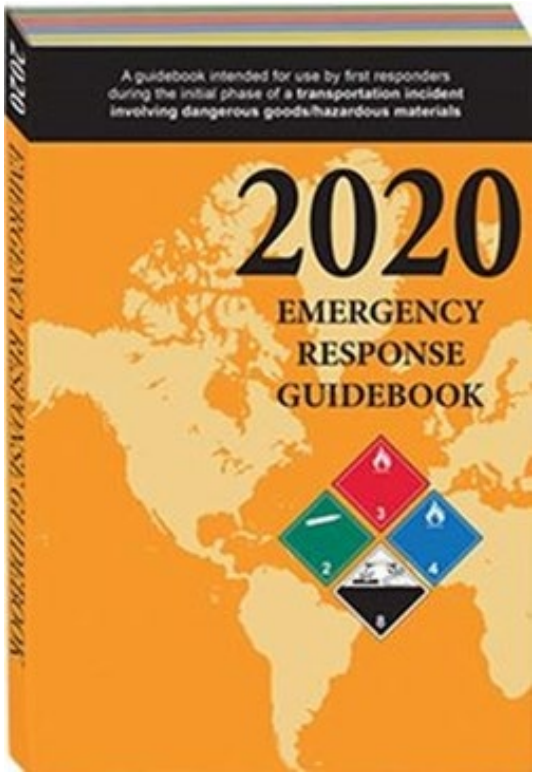
- Multiple and subsidiary hazards
  - More than one placard on the vehicle but only one product?
- "Dangerous" placard meaning
  - Table 2 commodities
- 454kg or 1001 lb rule
- 1000kg or 2204 lb rules
- Compliance and enforcement

www.kahoot.it



www.kahoot.it

Use this for the Exercise later



Emergency Response Guidebook Worksheet

Incident Information	Weather Information	Product Information
Container type: _____	Temperature: _____	UN/NA #: _____
Size of leak:_____	Wind/Direction: _____	Hazard class: __/_____
Near water? YES NO	Precipitation: _____	Vehicle type: _____
Near people? YES NO		Placard color: _____
On fire? YES NO		

UN/NA Number Information

Chemical name: _____

_____

Highlighted? YES NO

Polymerization hazard? YES NO

If there is no other information, go to Guide # 111.

Guide #:

Is the entry highlighted?

YES NO

Is the material on fire?

NO YES

GREEN Section Information (FIRST)

Water reactive? YES NO

If so, TIH product formed: _____

Isolation zone (in all directions): _____

Downwind evacuation. Day: _____ Night: _____

ORANGE Section Information (SECOND)

Primary hazard (listed first): FLAMMABILITY HEALTH

Isolation zone (in all directions): _____

First aid info: _____

PPE suggestions: _____

Spill mitigation: _____

Firefighting measures: _____

LOOK UP FLUOROSILIC ACID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BREAK TIME!


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Hazardous Communications Standard Updates 29CFR 1910.1200

Title 8 CCR Section 5194

http://www.dir.ca.gov/title8/5194-May-6-2013.html

Nick Vent

The Sustainable Workplace Alliance

SWA SUSTAINABLE WORKPLACE ALLIANCE

HAZARD COMMUNICATION

Components

1. Safety Data Sheets
2. Labels
3. Written Program
4. Training of Employees

HAZARD COMMUNICATION

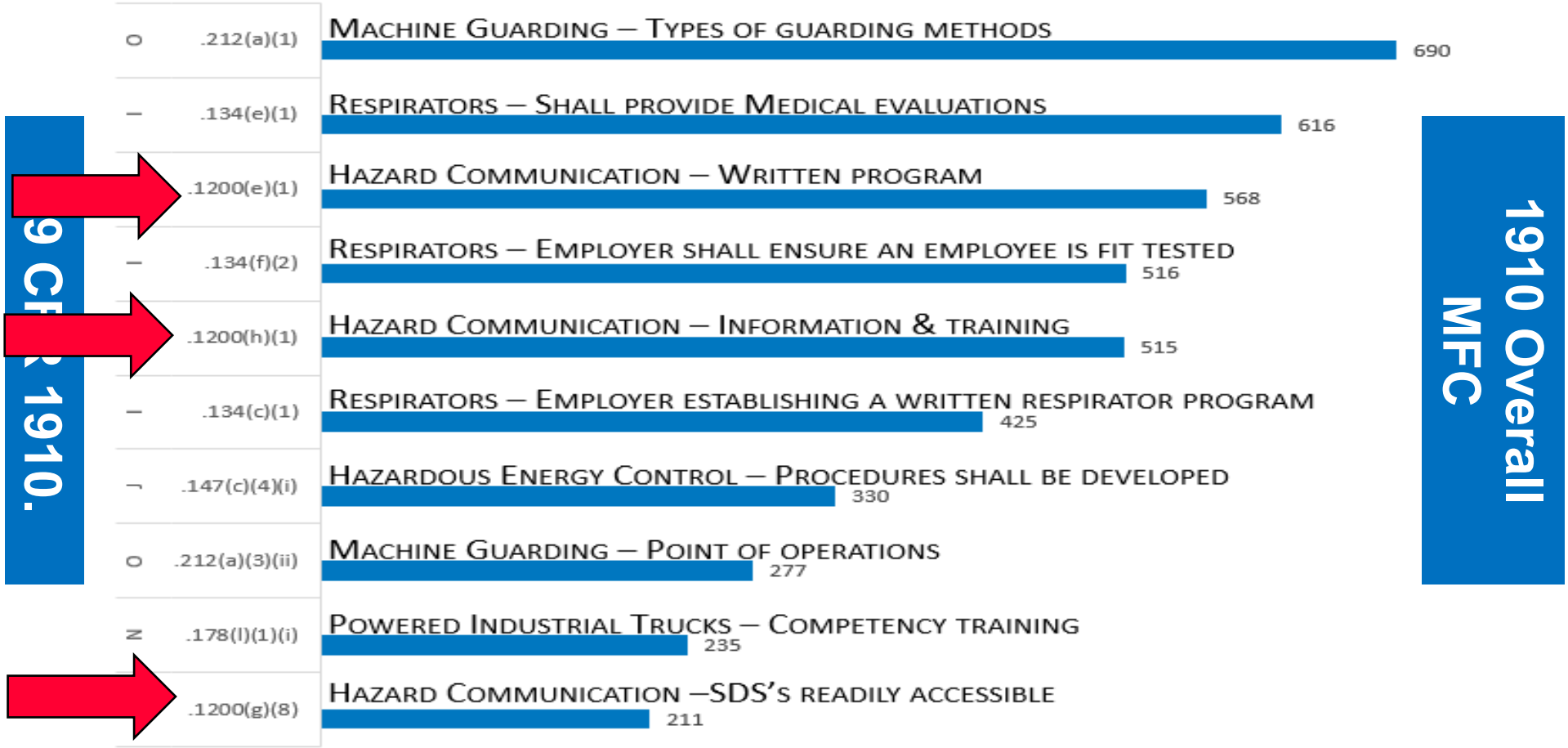
Employers shall provide employees with effective information and training on hazardous chemicals:

1. At the time of their initial assignment,
2. Whenever a new chemical hazard is introduced into their work area.

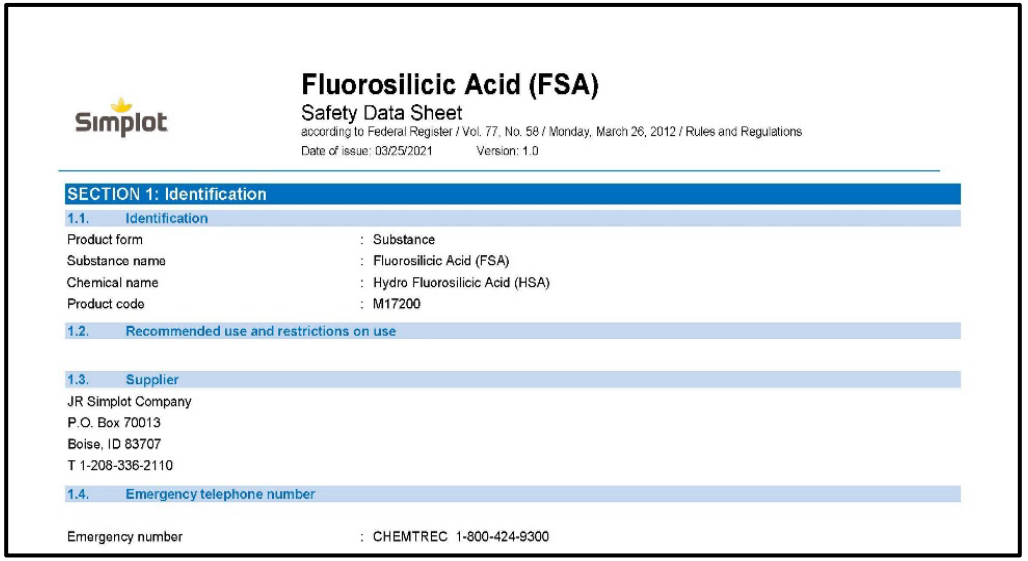
Information and training may:

1. Cover categories of hazards
2. Or specific chemicals. Chemical-specific information must always be available through labels and safety data sheets.

Most Frequently Cited Serious Violations in General Industry FY 2021



Safety Data Sheets



Simplot

Fluorosilicic Acid (FSA)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 03/25/2021 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form	:	Substance
Substance name	:	Fluorosilicic Acid (FSA)
Chemical name	:	Hydro Fluorosilicic Acid (HSA)
Product code	:	M17200

1.2. Recommended use and restrictions on use

1.3. Supplier

JR Simplot Company
P.O. Box 70013
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number	:	CHEMTREC 1-800-424-9300

- Should be available for each Haz Mat in the workplace
  - Required by OSHA Hazard Communication Regulations
- Provides valuable information

Let's go over the Safety Data Sheet for Fluorosilicic Acid (FSA)

SAFETY DATA SHEETS (SDS)

- Supplied by manufacturer/distributor
- Have on hand for each hazardous chemical
- Must be accessible to all affected employees
- Standardized 16 section format
  - Gone is the 9 section format
  - As of June 1, 2016

Global Harmonization System

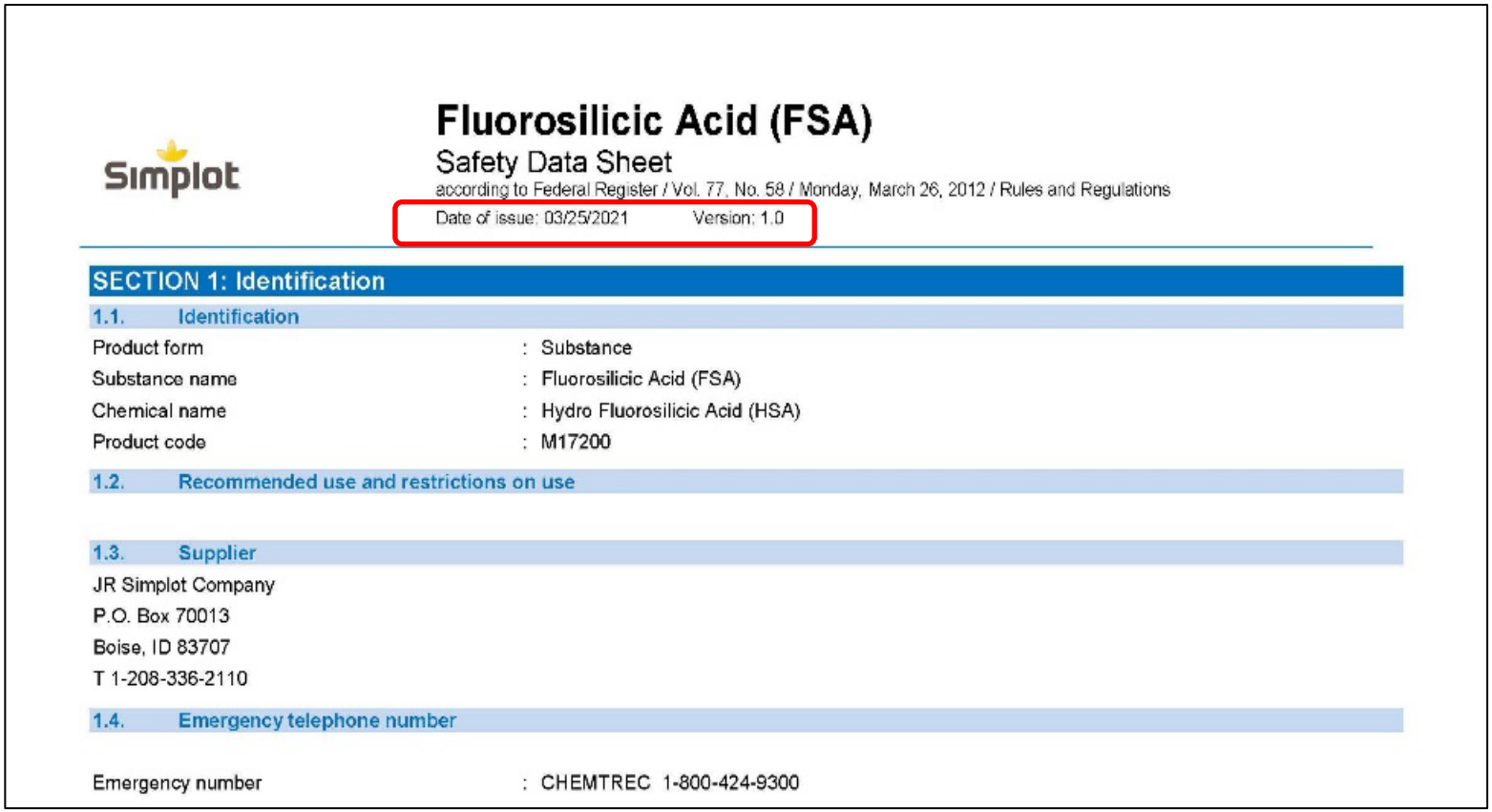
- Developed by U.N. commission
- Adopted by U.S. on March 20, 2012
- Finalized June 1, 2016
- Changes in some terminology
- New pictograms for hazard warning
- Safety Data Sheets in 16 section format

Section 1 Identification;

Includes product identifier;

manufacturer or distributor name, address,

phone number; emergency phone number;



Simplot

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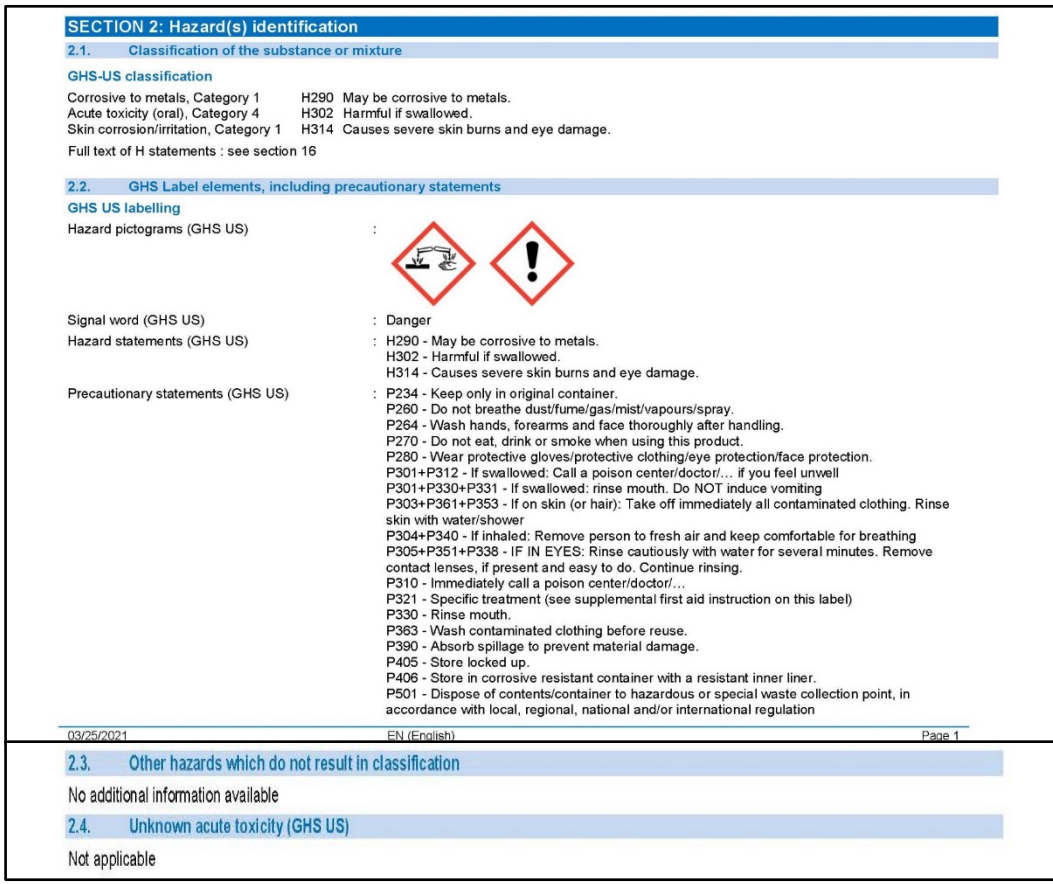
JR Simplot Company
P.O. Box 70013
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number	:	CHEMTREC 1-800-424-9300

Section 2 Hazard(s) identification;

- Includes all hazards regarding the chemical;
- Required label elements.



SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Corrosive to metals, Category 1	H290	May be corrosive to metals.
Acute toxicity (oral), Category 4	H302	Harmful if swallowed.
Skin corrosion/irritation, Category 1	H314	Causes severe skin burns and eye damage.

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labelling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Danger

Hazard statements (GHS US) :
H290 - May be corrosive to metals.
H302 - Harmful if swallowed.
H314 - Causes severe skin burns and eye damage.

Precautionary statements (GHS US) :
P234 - Keep only in original container.
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 - If swallowed: Call a poison center/doctor/... if you feel unwell
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a poison center/doctor/...
P321 - Specific treatment (see supplemental first aid instruction on this label)
P330 - Rinse mouth.
P363 - Wash contaminated clothing before reuse.
P390 - Absorb spillage to prevent material damage.
P405 - Store locked up.
P406 - Store in corrosive resistant container with a resistant inner liner.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

Section 3 Composition/information on ingredients;

- Includes information on chemical ingredients;
- Trade secret claims.

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : Fluorosilicic Acid (FSA)

Name	Product identifier	%	GHS-US classification
Water	(CAS-No.) 7732-18-5	75 – 78	Not classified
hexafluorosilicic acid	(CAS-No.) 16961-83-4	23 – 25	Skin Corr. 1B, H314

Full text of hazard classes and H-statements : see section 16

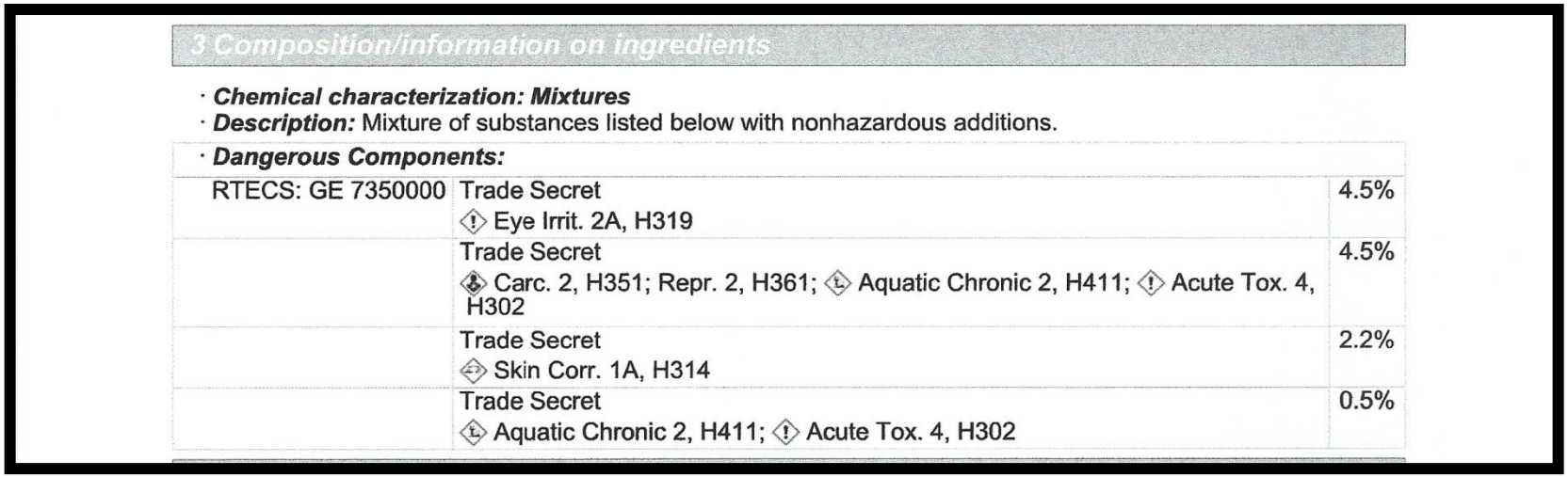
3.2. Mixtures

Not applicable

Section 3 Composition/information on ingredients;

Trade secret claims

- Product identifier · Trade name: Velopex Cleaner
  Product number: VEL4032; VEL4128; VCS12832



3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous Components:**

RTECS: GE 7350000	Trade Secret Eye Irrit. 2A, H319	4.5%
	Trade Secret Carc. 2, H351; Repr. 2, H361; Aquatic Chronic 2, H411; Acute Tox. 4, H302	4.5%
	Trade Secret Skin Corr. 1A, H314	2.2%
	Trade Secret Aquatic Chronic 2, H411; Acute Tox. 4, H302	0.5%

CFR 1910.1200(i) Trade secrets.

Section 4 First-aid measures

- Includes important symptoms/ effects,
- Acute, Delayed; Required treatment.

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	:	If you feel unwell, seek medical advice. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Call a physician immediately.
First-aid measures after inhalation	:	Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	:	Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Rinse skin with water/shower. Take off immediately all contaminated clothing. Call a physician immediately.
First-aid measures after eye contact	:	Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	:	Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a POISON CENTER/doctor if you feel unwell. Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects (acute and delayed)

Potential adverse human health effects and symptoms	:	Based on available data, the classification criteria are not met. Harmful if swallowed.
Symptoms/effects after skin contact	:	Burns.
Symptoms/effects after eye contact	:	Serious damage to eyes.
Symptoms/effects after ingestion	:	Swallowing a small quantity of this material will result in serious health hazard. Burns.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

First-aid measures

- This is from American Journal of Forensic Medicine and Pathology (March 2021)

- Treatment of acute exposure to FSA is similar to HF.
- The primary method of treatment is the prevention of exposure.
- Contact injuries are treated with topical calcium gluconate, and if greater than 65 cm^2 (10 in^2) is involved, the measurement of serum calcium and magnesium is recommended.

First-aid measures - from WISER

DERMAL EXPOSURE - OVERVIEW

Most patients with dermal exposure will do well if irrigated immediately.

There is no evidence that any products are more effective than water.

First-aid measures - from WISER

DERMAL EXPOSURE - OVERVIEW

Patients should be treated in a stepwise manner based on their response to therapy.

The initial treatment for pain from dermal exposure is topical calcium. One method for making a gel is to mix calcium gluconate with methylcellulose or water-soluble lubricant in a 1:2 ratio.

Apply the gel to the affected areas as frequently as needed to relieve symptoms.

First-aid measures – from WISER

DERMAL EXPOSURE - OVERVIEW

If the patient has pain despite topical therapy, extremity burns can be treated with a regional infusion of 40 mL of 2.5% calcium gluconate solution using a Bier block.

If this is not successful, an intra-arterial infusion of 40 mL of 2.5% calcium gluconate can be performed. If the area affected is not on an extremity, inject 0.3 to 0.5 mL/cm^2 of 2.5% calcium gluconate into the region

First-aid measures - from Honeywell

Skin Contact

- HF can cause serious, painful burns of the skin. Specialized first aid and medical treatment is required.
- Burns larger than 25 square inches (160 square cm) may result in serious systemic toxicity.

First-aid measures - from Honeywell

Skin Contact

HF acid differs from other acids because the fluoride ion readily penetrates the skin, causing destruction of deep tissue layers.

Unlike other acids which are rapidly neutralized, this process may continue for days if left untreated.

Speed is of the essence. Delays in first aid care or medical treatment or improper medical treatment will likely result in greater damage or may, in some cases, result in a fatal outcome.

During transportation to a medical facility or while waiting for care within a facility, the initial treatment (whether with benzalkonium chloride or topical calcium gluconate) should be continued.

First-aid measures - from Honeywell

First Aid Treatments

Skin Contact

1. **Move victim immediately under safety shower** or other water source and flush affected area thoroughly with large amounts of running water. Speed and thoroughness in washing off the acid is of primary importance.
2. Begin flushing even before removing clothing. Remove all contaminated clothing while continuing to flush with water under a safety shower.
3. While the victim is being rinsed with water, someone should alert first aid or medical personnel and arrange for subsequent treatment.
4. If the exposure is limited to HF and other water soluble substances, five (5) minutes of water decontamination after the removal of all PPE, clothing, and jewelry should be sufficient.

Simultaneous exposure with hydrocarbons or other substances with limited water solubility may require longer water decontamination or the use of other decontaminating agents. If a more definitive treatment (0.13% benzalkonium chloride solution or 2.5% calcium gluconate) is not available, water irrigation should continue until one of these agents is available or transportation to a medical facility is initiated.

First-aid measures - from Honeywell

First Aid Treatments

Skin Contact

5. Immediately after thorough washing, use one of the measures below:

   a. Begin soaking the affected areas in iced 0.13% benzalkonium chloride solution.

   Use ice cubes, *not* shaved ice, to prevent frostbite.

   If immersion is not practical, towels should be soaked with iced 0.13% benzalkonium chloride solution and used as compresses for the burned area. Compresses should be changed every 2 to 4 minutes. Do not use benzalkonium chloride solution for irrigation of the eyes. Exercise caution when using benzalkonium chloride solution near the eyes as it is an eye irritant. Benzalkonium chloride soaks or compresses should be continued until pain is relieved or until more definitive medical treatment is provided.

   b. Start massaging 2.5% calcium gluconate gel into the burn site.

   Apply gel frequently and massage continuously until pain and/or redness disappear or until more definitive medical care is given. The individual applying the calcium gluconate gel should wear surgical gloves to prevent a secondary HF burn.

First-aid measures - from Honeywell

First Aid Treatments

Skin Contact

6. After treatment of burned areas is begun, the victim should be examined to ensure there are no other burn sites which have been overlooked.

7. Arrange to have the victim seen by a physician. If burns are small and/or caused by weak acid, and treatment has been provided by an experienced individual, evaluation by a physician may not be necessary. During transportation to medical care and while waiting to see a medical provider, it is extremely important to continue the first aid care, whether with benzalkonium chloride or massaging calcium gluconate gel. In many situations, **particularly for minor burns covering a small skin area or for burns caused by dilute HF, continued treatment with soaks or gel may be effective as the sole type of medical care.** All persons with extensive burns or burns with significant blister formation or with the appearance of whitish or dead skin need to be seen by a physician. All persons with HF burns which do not respond to either calcium gluconate gel or benzalkonium chloride soaks or compresses within 30 minutes should be evaluated by a physician.

Section 5 Fire-fighting measures;

- Lists suitable extinguishing techniques,
- Equipment;
- Chemical hazards from fire.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	:	Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	:	Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire	:	Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	:	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	:	Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. Do not enter fire area without proper protective equipment, including respiratory protection.

Section 6 Accidental release measures;

- Lists emergency procedures;
- Protective equipment;
- Proper methods of containment and cleanup.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	:	Ventilate spillage area. Evacuate unnecessary personnel. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray.

6.1.2. For emergency responders

Protective equipment	:	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection". Equip cleanup crew with proper protection.
Emergency procedures	:	Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	:	Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Absorb spillage to prevent material damage.
Other information	:	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13. See Heading 8. Exposure controls and personal protection.

Clean up

Neutralizing spill?

- Soda Ash
- Lime
  - Fluoride spills will be neutralized with an 8% to 10% lime solution. The reaction of these products will form calcium fluorosilicate which will off gas.
  - Because calcium fluorosilicate is unstable, it will convert everything formed in the reaction to calcium fluoride and silica solids and water.
  - This end product is non-hazardous. It takes approximately .4 lbs. of lime to neutralize 1 lb. of 25% fluoride.
- HF Acid Eater
  - Changes color from Beige to yellow and ends pink when done
  - No off gassing

Clean up
Neutralizing spill?

- This is what a local contractor uses for small spills

Let’s Talk Decon for a few minutes

Primary or Technical Decon

- Refers to decon provided to personnel working in the Exclusion (Hot) Zone or the Contamination Reduction (Warm) Zone
  - Haz Mat Entry and Decontamination Teams

Basic Methods

- Discarding
- Dilution

  (Usually large amounts of water are available)
- Absorption
- Neutralization

Decontamination

- Water
- Soap and Water
- Dry Decon
- Decon Wipes:
  - FiberTect wipes are used to absorb, adsorb, capture, and remove gross contamination, while Dahlgren Decon is used to solubilize, mobilize, and/or destroy remaining contamination.
  - Then, FiberTect or clean water is used to remove any residue.
- 19 Step EPA Decon

Decontamination

Emergency Decon

- Used to remove gross contamination
- Use if no time to pre set up full decon.
- When washing people with a hose use **“LOTS OF WATER”**
- DO NOT worry about the runoff when doing Emergency Decon

FSA will be our exercise

Closest Decon Shower

Lot more on Decon on the last day

Section 7 Handling and storage;

- Lists precautions for safe handling and storage,
- Includes incompatibilities
  - What not to allow to be mixed together

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	:	May be corrosive to metals.
Precautions for safe handling	:	Ensure good ventilation of the work station. Wear personal protective equipment. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray.
Hygiene measures	:	Always wash hands after handling the product. Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	:	Store in a well-ventilated place. Keep cool. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use. Store in corrosive resistant container with a resistant inner liner. Keep only in original container. Store locked up.
Incompatible products	:	Strong bases. Strong acids.
Incompatible materials	:	Sources of ignition. Direct sunlight. Metals.
Packaging materials	:	Store in corrosive resistant container with a resistant inner liner.

Section 8 Exposure controls/PPE;

- Lists OSHA's Permissible Exposure Limits (PELs);
- Threshold Limit Values (TLVs);
- Appropriate engineering controls;
- Personal Protective Equipment (PPE)

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Fluorosilicic Acid (FSA)	
No additional information available	
Water (7732-18-5)	
No additional information available	
hexafluorosilicic acid (16961-83-4)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH TWA (mg/m³)	2.5 mg/m³

8.2. Appropriate engineering controls

Appropriate engineering controls	:	Ensure good ventilation of the work station.
Environmental exposure controls	:	Avoid release to the environment.

Section 8 Exposure controls/PPE;

- Personal Protective Equipment (PPE)

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Materials for protective clothing:

Use chemically protective clothing

Hand protection:

Acid proof gloves should be worn to prevent contact

Eye protection:

Splash proof goggles and full-face shield should be worn at all times. Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Wear appropriate mask

Other information:

Do not eat, drink or smoke during use.

Section 9 Physical and chemical properties;

- Lists the chemical's characteristics

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Clear, colorless to pale straw liquid.
Colour	:	Colourless
Odour	:	characteristic
Odour threshold	:	No data available
pH	:	1
Melting point	:	Not applicable
Freezing point	:	No data available
Boiling point	:	105 °C
Flash point	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	Non flammable.
Vapour pressure	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Solubility	:	Soluble.
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available

9.2. Other information

No additional information available

Section 10 Stability and reactivity;

- Lists chemical stability and possibility of hazardous reactions

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable. Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Extremely high temperatures. Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Alkalis. Chlorites. Combustible solids and organic peroxides. Strong acids. Strong bases. metals. May be corrosive to metals.

10.6. Hazardous decomposition products

Corrosive fumes of fluorides. fume. Carbon monoxide. Carbon dioxide.

Section 11 Toxicological information

- Includes routes of exposure;
- Related symptoms,
- Acute and chronic effects;
- Numerical measures of toxicity.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Harmful if swallowed.
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Not classified

Fluorosilicic Acid (FSA)	
LD50 oral rat	430 mg/kg
ATE US (oral)	430 mg/kg bodyweight

Skin corrosion/irritation	:	Causes severe skin burns. pH: 1
Serious eye damage/irritation	:	Assumed to cause serious eye damage pH: 1
Respiratory or skin sensitisation	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified

hexafluorosilicic acid (16961-83-4)	
IARC group	3 - Not classifiable

Reproductive toxicity	:	Not classified
STOT-single exposure	:	Not classified
STOT-repeated exposure	:	Not classified
Aspiration hazard	:	Not classified
Viscosity, kinematic	:	No data available
Potential adverse human health effects and symptoms	:	Based on available data, the classification criteria are not met. Ha
Symptoms/effects after skin contact	:	Burns.
Symptoms/effects after eye contact	:	Serious damage to eyes.
Symptoms/effects after ingestion	:	Swallowing a small quantity of this material will result in serious h

Section 12 Ecological information;

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. Before neutralisation, the product may represent a danger to aquatic organisms.

hexafluorosilicic acid (16961-83-4)	
LC50 fish 1	> 10 mg/l (96 h; Brachydanio rerio)
Threshold limit algae 1	10 mg/l (96 h; Scenedesmus quadricauda; Cell numbers)

12.2. Persistence and degradability

Fluorosilicic Acid (FSA)	
Persistence and degradability	Not established.

Water (7732-18-5)	
Persistence and degradability	Not established.

hexafluorosilicic acid (16961-83-4)	
Persistence and degradability	Biodegradability: not applicable. Reacts with water: release of toxic/harmful substances. No (test)data on mobility of the components available. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

Fluorosilicic Acid (FSA)	
Bioaccumulative potential	Not established.

Water (7732-18-5)	
Bioaccumulative potential	Not established.

hexafluorosilicic acid (16961-83-4)	
Bioaccumulative potential	Not bioaccumulative. Not established.

12.4. Mobility in soil

No additional information available

Section 13 Disposal considerations;

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods	:	Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	:	Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Ecology - waste materials	:	Avoid unintentional release to the environment.

Section 14 Transport information;

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description	:	UN1778 Fluorosilicic acid, 8, II
UN-No.(DOT)	:	UN1778
Proper Shipping Name (DOT)	:	Fluorosilicic acid
Class (DOT)	:	8 - Class 8 - Corrosive material 49 CFR 173.136
Packing group (DOT)	:	II - Medium Danger
Hazard labels (DOT)	:	8 - Corrosive

DOT Packaging Non Bulk (49 CFR 173.xxx)	:	202
DOT Packaging Bulk (49 CFR 173.xxx)	:	242

Section 14 Transport information;

DOT Special Provisions (49 CFR 172.102)	:	A6 - For combination packagings, if plastic inner packagings are used, they must be packed in tightly closed metal receptacles before packing in outer packagings. A7 - Steel packagings must be corrosion-resistant or have protection against corrosion. B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized. B15 - Packagings must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance. IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. N3 - Glass inner packagings are permitted in combination or composite packagings only if the hazardous material is free from hydrofluoric acid. N34 - Aluminum construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material. T8 - 4 178.274(d)(2) Normal..... Prohibited TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively. TP12 - This material is considered highly corrosive to steel.
DOT Packaging Exceptions (49 CFR 173.xxx)	:	None
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	30 L
DOT Vessel Stowage Location	:	A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.
Other information	:	No supplementary information available.

Transportation of Dangerous Goods

Transport by sea

Air transport

Section 15 Regulatory information;

SECTION 15: Regulatory information

15.1. US Federal regulations

Fluorosilicic Acid (FSA)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

Water (7732-18-5)
Listed on the Canadian DSL (Domestic Substances List)

hexafluorosilicic acid (16961-83-4)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

NO - Reportable Quantities (RQ) If there is a release

NO – Prop 65 report needed if there is a release

Component	State or local regulations
hexafluorosilicic acid(16961-83-4)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List

Where would you find Reportable Quantities (RQ)

- 40 Code of Federal Regulations
- § 302.4 Designation of hazardous substances.
- Table 302.4 - List of Hazardous Substances and Reportable Quantities

- 49 Code of Federal Regulations
- Section 172.101 App A
- Appendix A to §172.101 - List of Hazardous Substances and Reportable Quantities

Section 16 Other information, including date of preparation or last revision

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Other information : None.

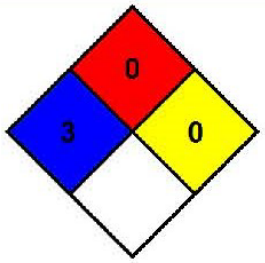
Full text of H-statements:

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

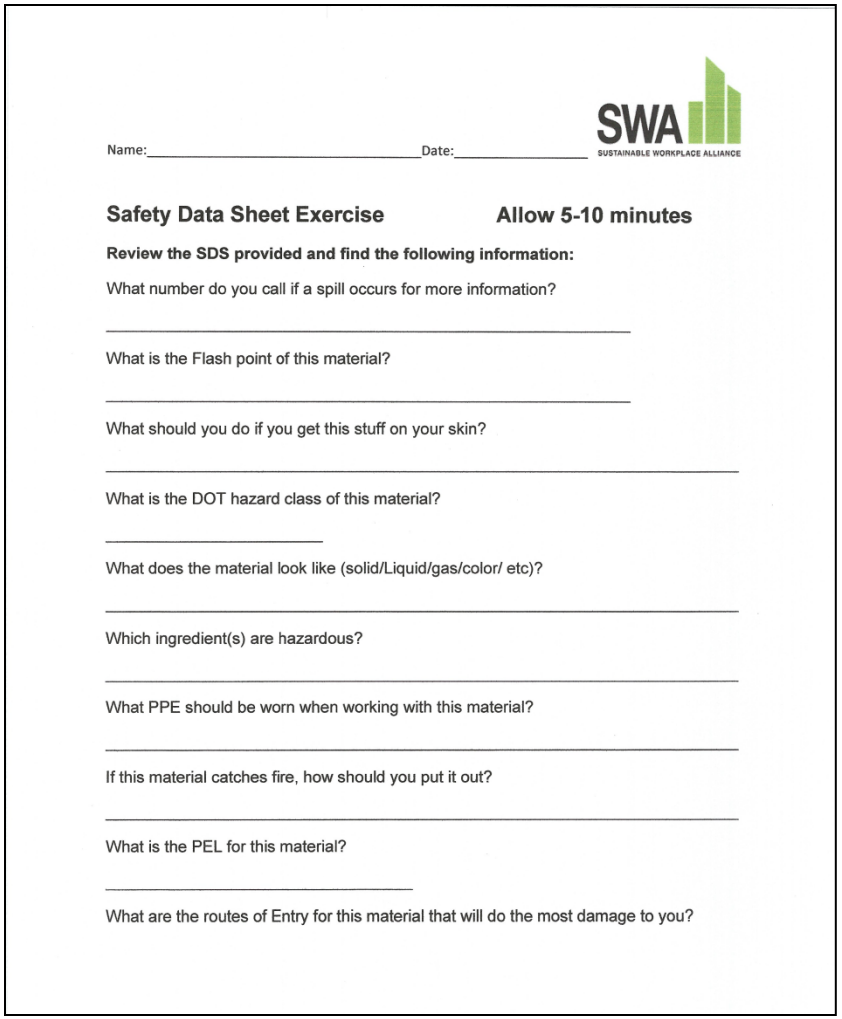
Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Safety Data Sheet Exercise

You can do this later



Name:_____ Date:_____

SWA
SUSTAINABLE WORKPLACE ALLIANCE

Safety Data Sheet Exercise **Allow 5-10 minutes**

Review the SDS provided and find the following information:

What number do you call if a spill occurs for more information?

_____

What is the Flash point of this material?

_____

What should you do if you get this stuff on your skin?

_____

What is the DOT hazard class of this material?

_____

What does the material look like (solid/Liquid/gas/color/ etc)?

_____

Which ingredient(s) are hazardous?

_____

What PPE should be worn when working with this material?

_____

If this material catches fire, how should you put it out?

_____

What is the PEL for this material?

_____

What are the routes of Entry for this material that will do the most damage to you?

Labels

Part of GHS changes

GHS Comparison

HAZARD RATING SYSTEMS

OSHA brief on labels published February 2013

“Employers may continue to use rating systems such as National Fire Protection Association (NFPA) diamonds or HMIS requirements for workplace labels as long as they are consistent with the requirements of the Hazard Communication Standard and the employees have immediate access to the specific hazard information as discussed above. An employer using NFPA or HMIS labeling must, through training, ensure that its employees are fully aware of the hazards of the chemicals used.”

Product Labeling
Label Requirements Changed Dec 2015

HMIS and NFPA

GHS

GHS Labels

- Product Identifier
- Symbols called “Pictograms”
- Signal Words
- Hazard Statements
- Precautionary Statements
- Supplier/Manufacturer Name, Address, Phone

SAMPLE LABEL

PRODUCT IDENTIFIER

CODE _____
Product Name _____

SUPPLIER IDENTIFICATION

Company Name_____
Street Address _____
City _____ State _____
Postal Code _____ Country _____
Emergency Phone Number _____

PRECAUTIONARY STATEMENTS

Keep container tightly closed. Store in cool, well ventilated place that is locked.
Keep away from heat/sparks/open flame. No smoking.
Only use non-sparking tools.
Use explosion-proof electrical equipment.
Take precautionary measure against static discharge.
Ground and bond container and receiving equipment.
Do not breathe vapors.
Wear Protective gloves.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Dispoae of in accordance with local, regional, national, international regulations as specified.

In Case of Fire: use dry chemical (BC) or Carbon dioxide (CO_2) fire extinguisher to extinguish.

First Aid
If exposed call Poison Center.
If on skin (on hair): Take off immediately any contaminated clothing. Rinse skin with water.

HAZARD PICTOGRAMS

SIGNAL WORD

Danger

HAZARD STATEMENT

Highly flammable liquid and vapor.
May cause liver and kidney damage.

SUPPLEMENTAL INFORMATION

Directions for use

_____
_____
_____

Fill weight: _____ Lot Number _____
Gross weight: _____ Fill Date: _____
Expiration Date: _____

Labels - Pictograms

- Health Hazards

- Physical Hazards

- Environmental Hazards

(Not regulated by OSHA)

Health Hazard

- Carcinogen
- Mutagenicity
- Reproductive Toxicity
- Respiratory Sensitizer
- Target Organ Toxicity
- Aspiration Toxicity

Exclamation Mark

- Irritant (skin and eye)
- Skin Sensitizer
- Acute Toxicity (harmful)
- Narcotic Effects
- Respiratory Tract Irritant

Skull and Crossbones

- Acute Toxicity (fatal or toxic)

Started in Pittsburgh Poison Cente

Skull and Crossbones

Corrosion

- Skin Corrosion/Burns
- Eye Damage
- Corrosive to Metals

Flame

- Flammables
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Self-Reactives
- Organic Peroxides

Gas Cylinder

- Gases Under Pressure

Exploding Bomb

- Explosives
- Self-Reactives
- Organic Peroxides

Flame Over Circle

- Oxidizers

Environment (Non Mandatory)

- Aquatic Toxicity
- Internationally known as Marine Toxic

Labels- Signal Word

These are words used to indicate the severity of the hazard and alert employees to the potential hazard.

Only 2 signal words will appear:

- **"DANGER"**(more severe hazard)
- **"WARNING"** (less severe hazard)

Not all labels will have a signal word. Some chemicals are not hazardous enough to require that a signal word appear on the label.

Labels - Hazard Statement

There are specific hazard statements that must appear on the label based on the chemical hazard classification.

Examples:

- Flammable liquid and vapor
- Causes skin irritation
- May cause cancer

Label - Precautionary Statements

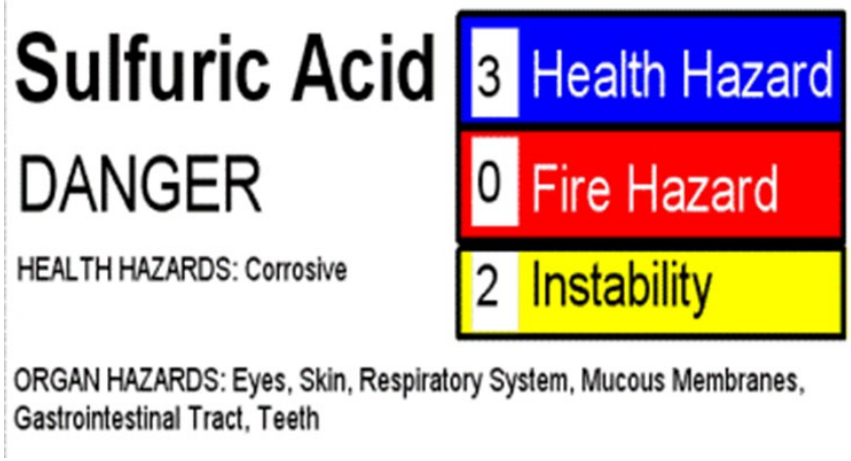
- Precautionary statements describe *recommended* measures that should be taken to protect against hazardous exposures, or improper storage or handling of a chemical.

- Examples:
  - Wear respiratory protection
  - Wash with soap and water
  - Store in a well ventilated place

- Not necessarily a mandate for employees to follow.

HMIS Labeling System

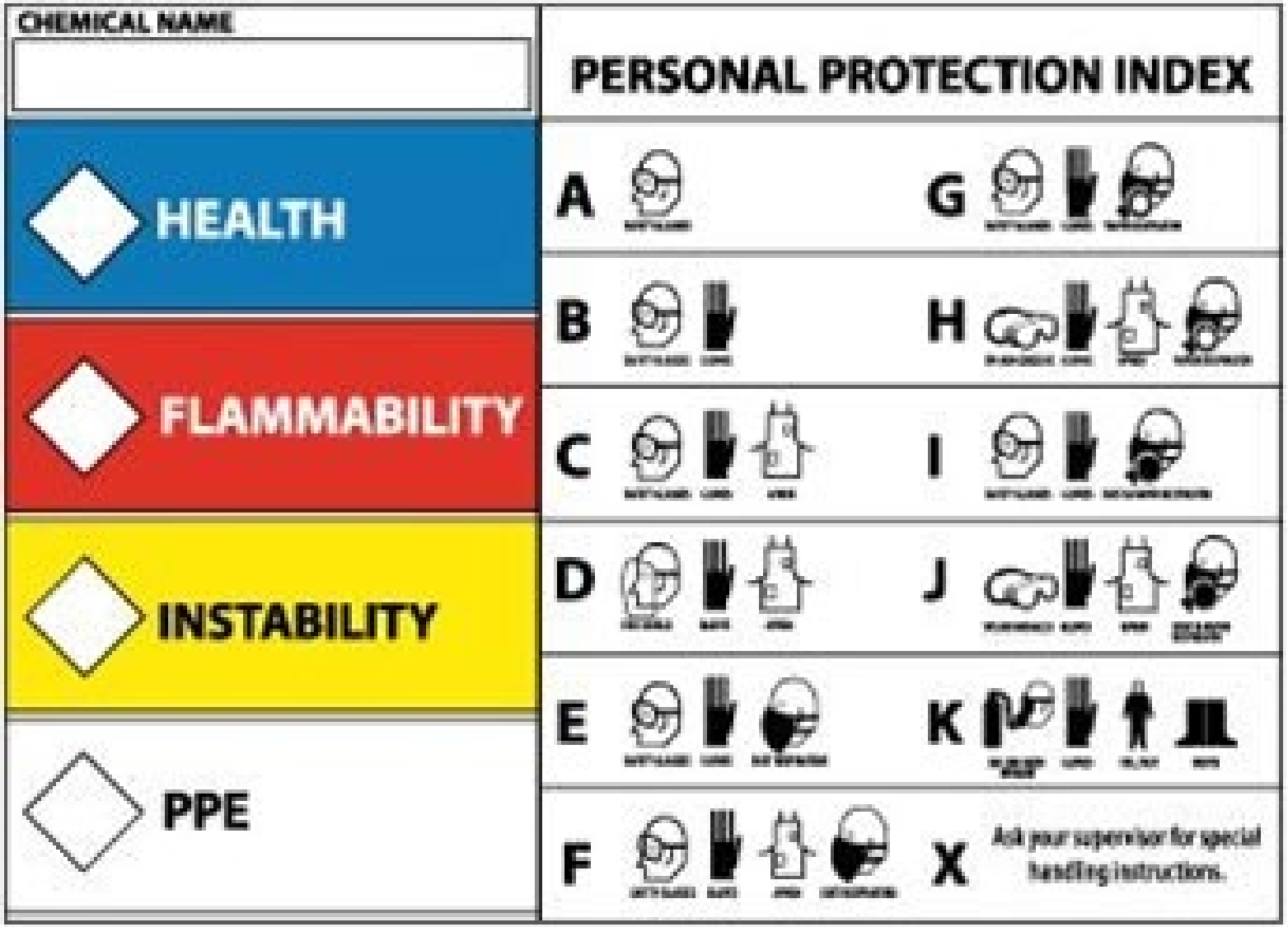
(Hazardous Material Identification System)



Rating System

- 4 Severe
- 3 Serious
- 2 Moderate
- 1 Slight
- 0 Minimal

HMIS


CHEMICAL NAME
HEALTH
FLAMMABILITY
INSTABILITY
PPE
PERSONAL PROTECTION INDEX
A
B
C
D
E
F
G
H
I
J
K
X
Ask your supervisor for special handling instructions.

HAZARD RATING SYSTEMS

HMIS	NFPA	GHS
4 SEVERE	4 EXTREME	**1 Category 1**
3 SERIOUS	**3 HIGH**	**2 Category 2**
2 MODERATE	**2 MODERATE**	**3 Category 3**
1 SLIGHT	**1 SLIGHT**	**4 Category 4**
0 MINIMAL	**0 INSIGNIFICANT**	**5 Low TOXIC**

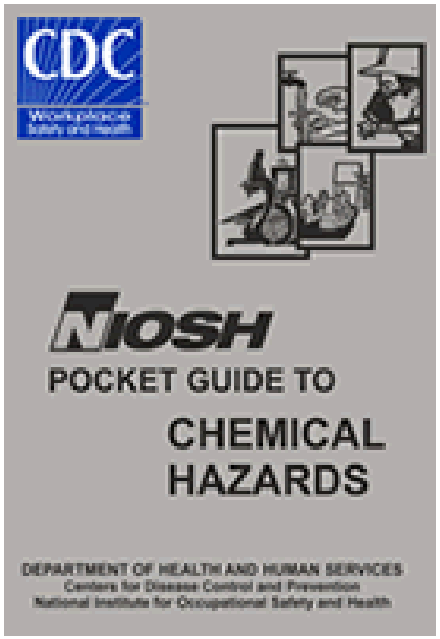
HAZARD COMMUNICATION

- Take the time to label all containers of hazardous chemicals
- Use the SDS as a guide for labeling

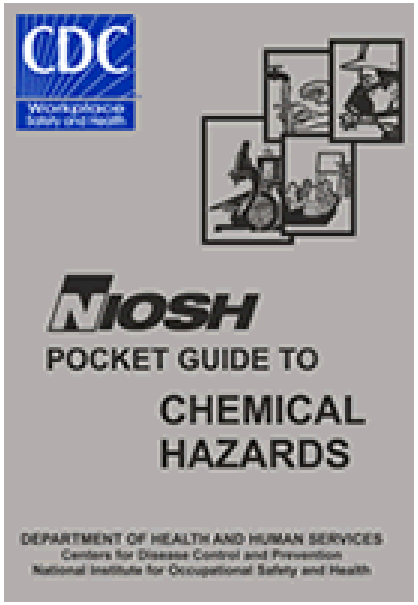
This Is A Must Have!

- Source of general industrial hygiene information on several hundred chemicals/classes for workers, employers, and occupational health professionals.

- Key information and data in abbreviated or tabular form for chemicals or substance groupings



NIOSH



- Hazards and Exposures
- Chemicals
- Emergency Preparedness and Response
- Safety and Prevention
- Diseases and Injuries
- NIOSH Guide Book
- There is a downloadable link and App from the CDC

NIOSH Pocket Guide

- Free copies of the NIOSH Pocket Guide are available: (up to 10)

- Print Version, DHHS (NIOSH) Publication No. 2005-149:
- https://wwwn.cdc.gov/pubs/CDCInfoOnDemand.aspx?ProgramID=147

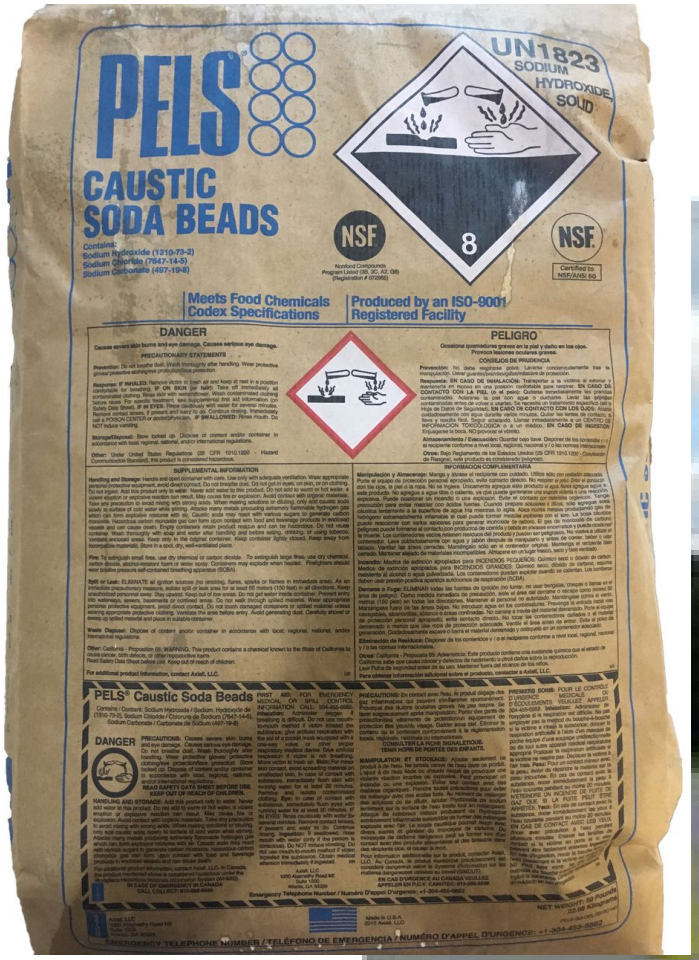
- Download the app here.
- https://www.cdc.gov/niosh/npg/mobilepocketguide.html

What Does It Tell Me?

Sodium hydroxide	Formula: NaOH	CAS#: 1310-73-2	RTECS#: WB4900000	IDLH: 10 mg/m^3
Conversion:	**DOT:** 1823 154 (dry, solid); 1824 154 (solution)			
Synonyms/Trade Names: Caustic soda, Lye, Soda lye, Sodium hydrate				
Exposure Limits: **NIOSH REL:** C 2 mg/m^3 **OSHA PEL†:** TWA 2 mg/m^3			**Measurement Methods (see Table 1):** **NIOSH** 7401	
Physical Description: Colorless to white, odorless solid (flakes, beads, granular form).				
Chemical & Physical Properties: **MW:** 40.0 **BP:** 2534°F **Sol:** 111% **Fl.P:** NA **IP:** NA **Sp.Gr:** 2.13 **VP:** 0 mmHg (approx) **MLT:** 605°F **UEL:** NA **LEL:** NA Noncombustible Solid, but when in contact with water may generate sufficient heat to ignite combustible materials.	**Personal Protection/Sanitation (see Table 2):** **Skin:** Prevent skin contact **Eyes:** Prevent eye contact **Wash skin:** When contam **Remove:** When wet or contam **Change:** Daily **Provide:** Eyewash Quick drench		**Respirator Recommendations (see Tables 3 and 4):** **NIOSH/OSHA** **10 mg/m^3:** Sa:Cf£/100F/PaprHie£/ ScbaF/SaF §: ScbaF:Pd,Pp/SaF:Pd,Pp:AScba **Escape:** 100F/ScbaE	
Incompatibilities and Reactivities: Water; acids; flammable liquids; organic halogens; metals such as aluminum, tin & zinc; nitromethane [**Note:** Corrosive to metals.]				
Exposure Routes, Symptoms, Target Organs (see Table 5): **ER:** Inh, Ing, Con **SY:** Irrit eyes, skin, muc memb; pneu; eye, skin burns; temporary loss of hair **TO:** Eyes, skin, resp sys			**First Aid (see Table 6):** **Eye:** Irr immed **Skin:** Water flush immed **Breath:** Resp support **Swallow:** Medical attention immed	

Sodium metabisulfite	Formula:	CAS#:	RTECS#:	IDLH:

Look up Sodium Hydroxide (dry)



Look up Sodium Hydroxide (dry)

NIOSH Guide Worksheet

Incident Information	Weather Information
Container type: _____	Temperature: _____
Size of leak:_____	Wind/Direction: _____
Near water? YES NO	Precipitation: _____
Near people? YES NO	
On fire? YES NO	

Chemical Name

State of matter? SOLID LIQUID LIQ.-GAS COMP.-GAS

How far will the gas/vapor cloud move? How toxic is it?

Gas/Vapor Behavior
Vapor pressure (VP): _____
Relative gas density (RGasD): _____
Vapor density for liquids: _____ = MW / 29
Permissible exposure limit (PEL): _____
Immediately dangerous to life and health (IDLH): _____

How flammable is it? Are enough vapors being generated to burn?

Fire Behavior
Flashpoint (Fl P): _____
Lower explosive limit (LEL): _____
Upper explosive limit (UEL): _____

What will happen when the material reaches/touches water?

Water Behavior
Water reactive? YES NO
Product formed (if any): _____
Solubility (SOL): _____
Specific gravity (SpGr): _____

How will it enter the body? How do we recognize & treat exposure?

EMS Information
Routes of entry: INHALATION ABSORPTION INGESTION
Signs and symptoms: _____
_____
Treatment recommendations: _____
_____

Look up Sodium Hydroxide (dry)

NIOSH Guide Worksheet

Incident Information	Weather Information
Container type: BAG	Temperature: 70°F
Size of leak: 50lbs	Wind/Direction: West to East
Near water? YES (NO)	Precipitation: No
Near people? YES (NO)	
On fire? YES (NO)	

Chemical Name
Sodium Hydroxide Flake

State of matter? (SOLID) LIQUID LIQ.-GAS COMP.-GAS

How far will the gas/vapor cloud move? How toxic is it?

Gas/Vapor Behavior
Vapor pressure (VP): 0 mm Hg
Relative gas density (RGasD):
Vapor density for liquids: = MW / 29
Permissible exposure limit (PEL): 2 mg/m^3
Immediately dangerous to life and health (IDLH):

How flammable is it? Are enough vapors being generated to burn?

Fire Behavior
Flashpoint (Fl P): NA
Lower explosive limit (LEL): NA
Upper explosive limit (UEL): NA

What will happen when the material reaches/touches water?

Water Behavior
Water reactive? (YES) NO
Product formed (if any): Corrosive Liquid
Solubility (SOL): 111%
Specific gravity (SpGr): 2.13

How will it enter the body? How do we recognize & treat exposure?

EMS Information
Routes of entry: (INHALATION) (ABSORPTION) (INGESTION)
Signs and symptoms: Irrit eyes, SKIN, muc memb
SKin Burns eye Burns
Treatment recommendations: Irrigate Immediately
Water Flush Resp Support MED ATTENTION IMMED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BREAK TIME!


CALIFORNIA
CUPA
FORUM

What is your role in the emergency?

1910.120(q)(6)(i)(E)

Incident Command System (ICS)

Unified Command System (UCS)

National Incident Management System (NIMS)

Which one do you use?

Desired Initial Actions

- Safe Approach
- Isolate & deny entry
- Make initial Notifications
- Establish temporary command
  - You are in command until someone can take over for you

Who is in Charge?

And if it is me –

How do I stop being in Charge?

Hazmat & “Who’s In Charge”

- The first FRA can help by doing this:
  - Assume Temporary Command
  - Manage event until designated IC arrives

OSHA & Incident Command

- **OSHA requires an IC**
- **OSHA mandates ICS**

Incident Command System

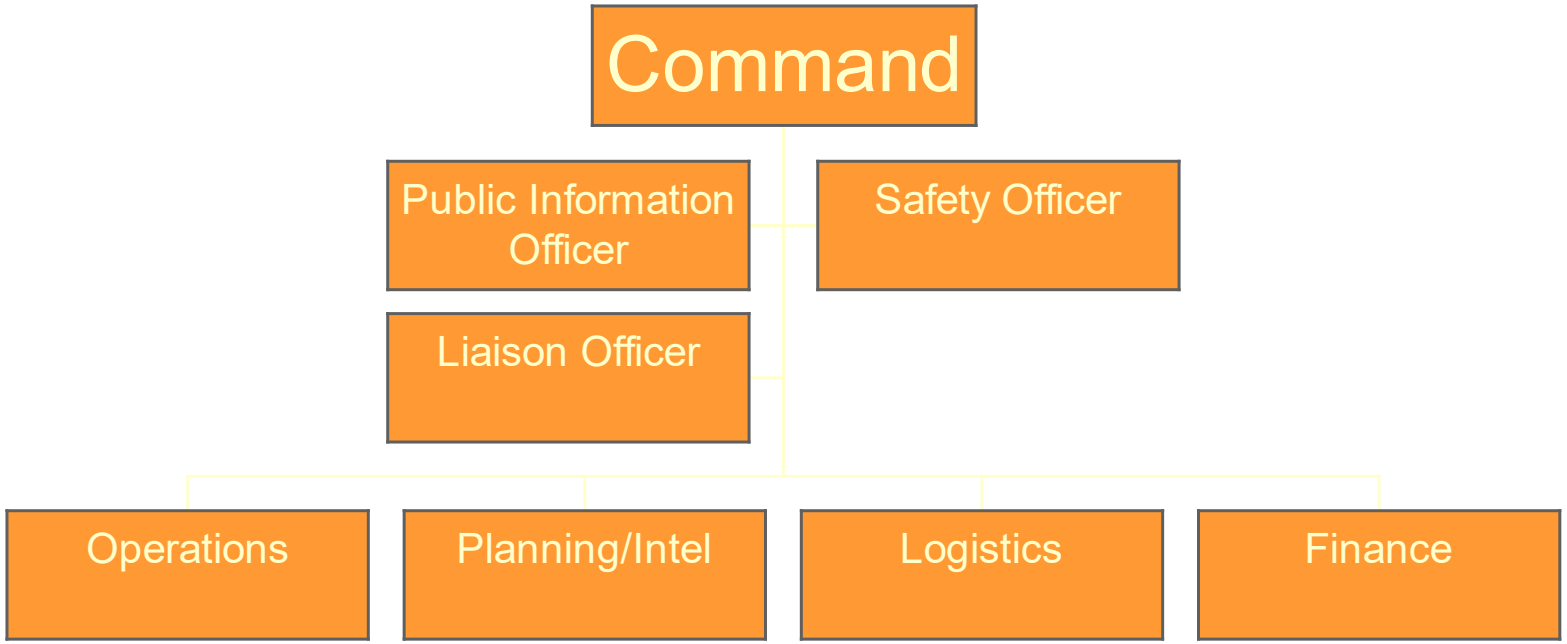
- Organized system
  - Roles, responsibilities & SOP's
- NIMS and ICS are nationally recognized
- Used to manage and direct emergency operations

Managing Hazardous Materials Emergencies

- Common Organization and Management System:
  - Typically use ICS or NIMS
    - As of 2003 we have to also use the National Incident Management System (NIMS)
  - Benefits: Primarily for an Efficient and Effective Scene Management System when handling a Multi-Faceted Response Involving Many People with Different Responsibilities

Managing Hazardous Materials Emergencies

INCIDENT COMMAND SYSTEM



Single Incident Command

When an incident occurs within a single jurisdiction and there is no jurisdictional or functional agency overlap, the incident should be managed by a single Incident Commander who has overall incident management responsibility.

Unified and Area Command

In some situations, NIMS recommends variations in incident management.

- The two most common variations involve the use of:
  - Unified Command
    - More than one agency involved
  - Area Command (Usually in an EOC)
    - More than one incident occurring at the same time stretching resources

Managing Hazardous Materials Emergencies

- Unified Command (UC)
  - **Unified Command** is used when there is more than one agency with a management responsibility that cannot be delegated
    - **Individuals in the Unified Command Post should be able to speak for, and commit the resources of, their respective organizations**
    - **If consensus is not possible the overall IC shall make the final decision.**


MAX
Instant Canopy
SMC
FIRE

What is Area Command?

An **Area Command** is established to:

- Oversee the management of multiple incidents that are each being managed by an ICS organization.
- Oversee the management of large incidents that cross jurisdictional boundaries.

Area Commands are particularly relevant to public health emergencies because these incidents are typically:

- Not site specific.
- Not immediately identifiable.
- Geographically dispersed and evolve over time.

These types of incidents call for a coordinated response, with large-scale coordination typically found at a higher jurisdictional level.

OSHA Requirements

- IC must designate a Safety Officer
  - Ensures safety on-scene
  - Enforces (and First Responders observe) safety rules
  - Suspend any unsafe acts

Managing Hazardous Materials Emergencies

- Safety Officer
  - Function is to assess hazardous and unsafe situations and develop measures for assuring personnel safety.
  - Mandated position under OSHA
  - Responsible to identify and evaluate hazards and to provide direction with respect to the safety of operations for the emergency on hand

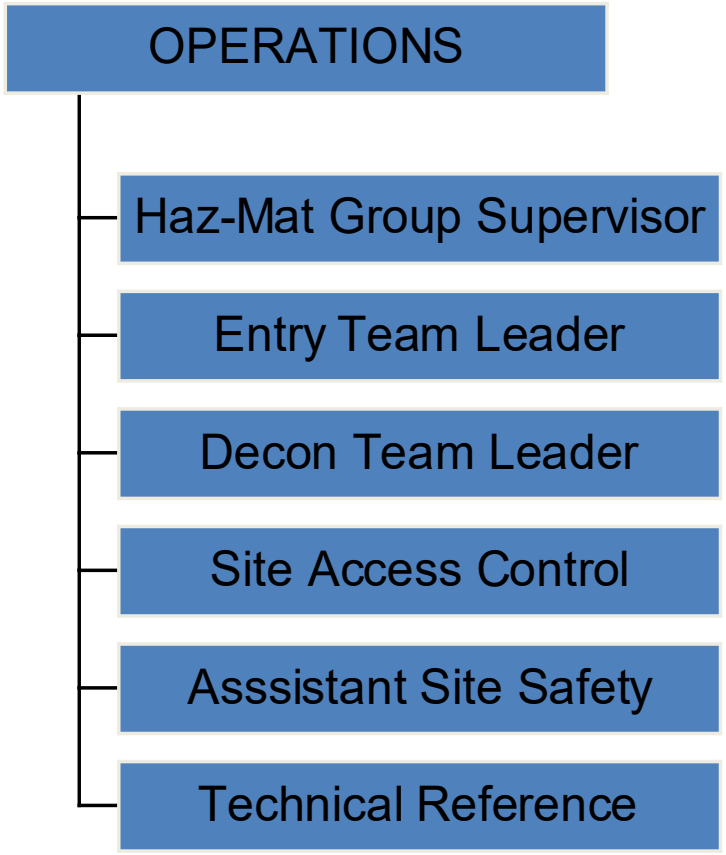
Safety Officer

- Know who the SO is

- Follow the Site Safety Plan

Managing Hazardous Materials Emergencies

HAZMAT TEAM POSITIONS



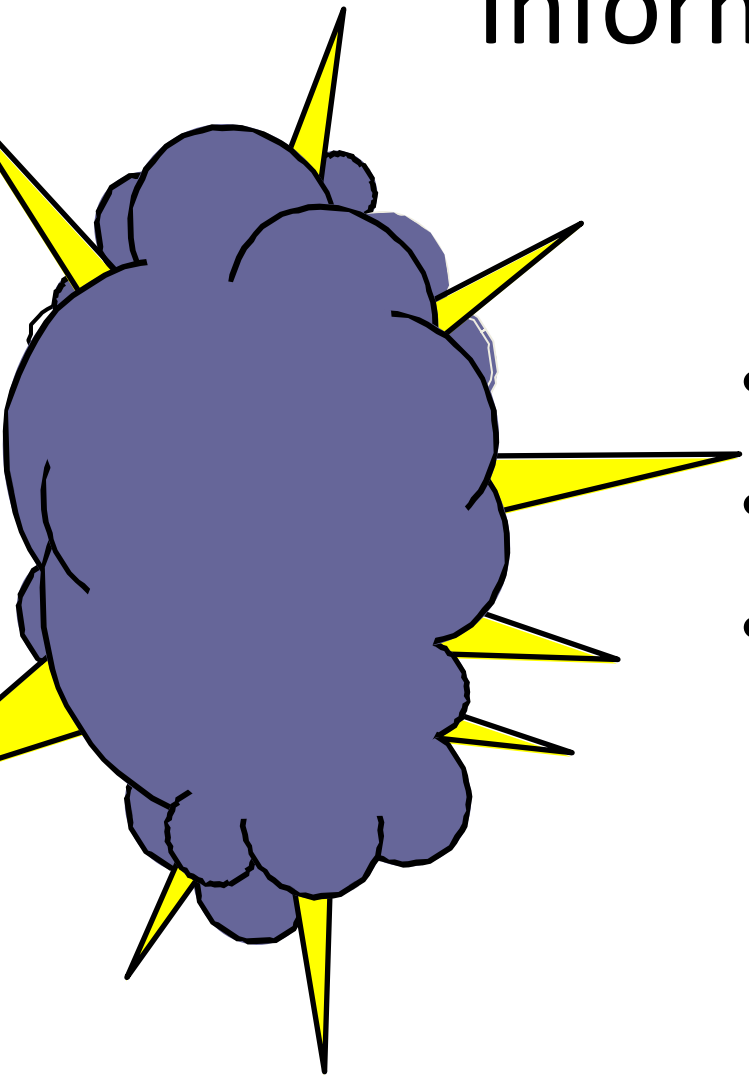
ICS - Easy Button!

Site Safety Plans

Information Needed

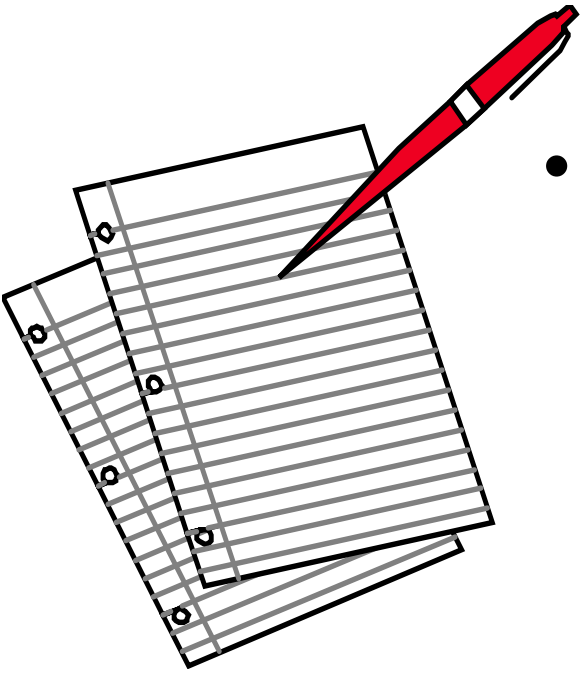
- Location
- Name of person reporting
  - Call back number ***that works***
- Substance released

Information Needed



- Nature of problem
- Quantity released
- Other potential hazards
  - (e.g. fire!)

Notification Issues



- Checklist can help

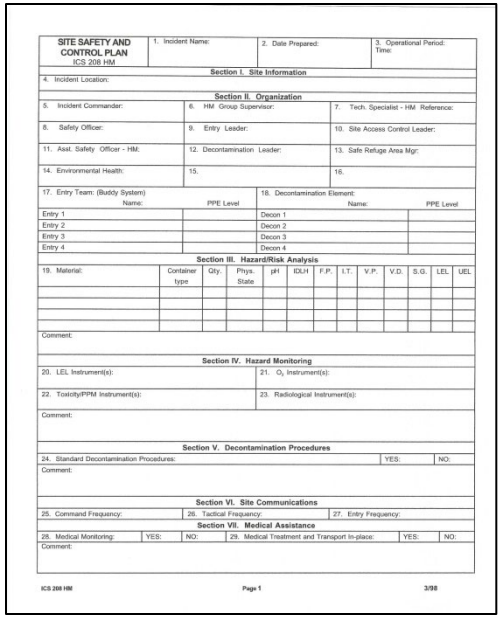
Be ready to brief responders that arrive

Purpose of Site Safety Planning

- Ensure the safety of personnel on site
  - Health exposure information
- Establish standard operating procedures
- Establish a command structure
  - Contact person for followup and if a problem needs immediate attention
- Provide a briefing document for responders
  - and your bosses

Developing Site Safety Plan

- FEMA and Responders use ICS-208 HM
  - Helps the Assistant Safety Officer/Haz Mat focus on elements necessary to ensure worker safety



SITE SAFETY AND CONTROL PLAN
ICS 208 HM

1. Incident Name: | 2. Date Prepared: | 3. Operational Period: Time:

Section I. Site Information

4. Incident Location:

Section II. Organization

5. Incident Commander:	6. HM Group Supervisor:	7. Tech. Specialist - HM Reference:
8. Safety Officer:	9. Entry Leader:	10. Site Access Control Leader:
11. Asst. Safety Officer - HM:	12. Decontamination Leader:	13. Safe Refuge Area Mgr:
14. Environmental Health:	15.	16.

17. Entry Team: (Buddy System) Name:	PPE Level	18. Decontamination Element: Name:	PPE Level
Entry 1		Decon 1	
Entry 2		Decon 2	
Entry 3		Decon 3	
Entry 4		Decon 4	

Section III. Hazard/Risk Analysis

19. Material:	Container type	Qty.	Phys. State	pH	IDLH	F.P.	I.T.	V.P.	V.D.	S.G.	LEL	UEL

Comment:

Section IV. Hazard Monitoring

20. LEL Instrument(s):	21. O_2 Instrument(s):
22. Toxicity/PPM Instrument(s):	23. Radiological Instrument(s):

Comment:

Section V. Decontamination Procedures

24. Standard Decontamination Procedures: YES: NO:

Comment:

Section VI. Site Communications

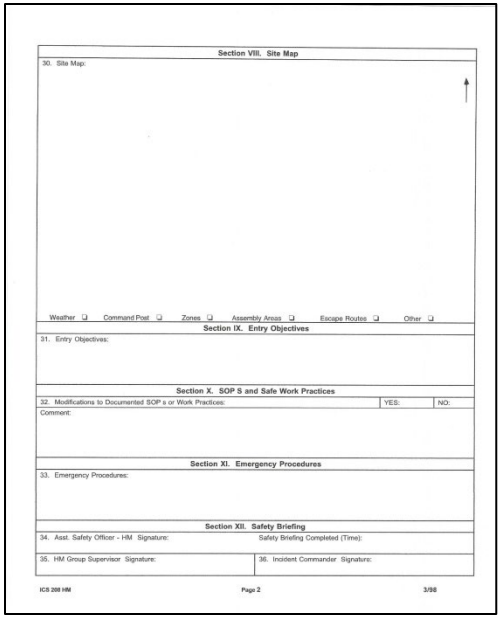
25. Command Frequency: | 26. Tactical Frequency: | 27. Entry Frequency:

Section VII. Medical Assistance

28. Medical Monitoring: YES: NO: | 29. Medical Treatment and Transport In-place: YES: NO:

Comment:

ICS 208 HM Page 1 3/98



Section VIII. Site Map

30. Site Map:

Weather ❑ Command Post ❑ Zones ❑ Assembly Areas ❑ Escape Routes ❑ Other ❑

Section IX. Entry Objectives

31. Entry Objectives:

Section X. SOP S and Safe Work Practices

32. Modifications to Documented SOP s or Work Practices: YES: NO:

Comment:

Section XI. Emergency Procedures

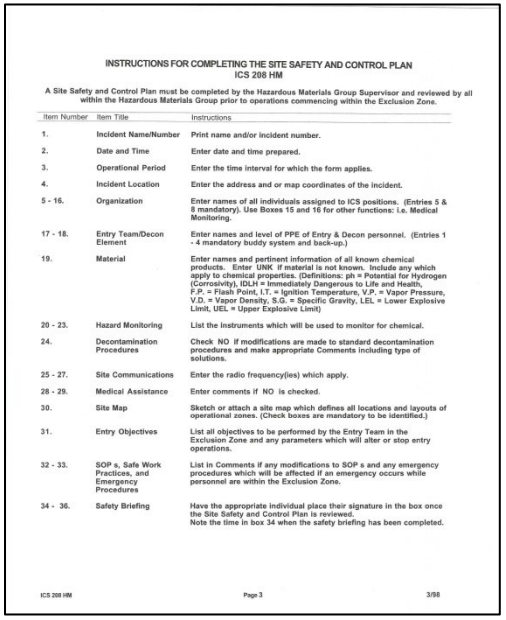
33. Emergency Procedures:

Section XII. Safety Briefing

34. Asst. Safety Officer - HM Signature: Safety Briefing Completed (Time):

35. HM Group Supervisor Signature: | 36. Incident Commander Signature:

ICS 208 HM Page 2 3/98



INSTRUCTIONS FOR COMPLETING THE SITE SAFETY AND CONTROL PLAN
ICS 208 HM

A Site Safety and Control Plan must be completed by the Hazardous Materials Group Supervisor and reviewed by all within the Hazardous Materials Group prior to operations commencing within the Exclusion Zone.

Item Number	Item Title	Instructions
1.	Incident Name/Number	Print name and/or incident number.
2.	Date and Time	Enter date and time prepared.
3.	Operational Period	Enter the time interval for which the form applies.
4.	Incident Location	Enter the address and or map coordinates of the incident.
5 - 16.	Organization	Enter names of all individuals assigned to ICS positions. (Entries 5 & 8 mandatory). Use Boxes 15 and 16 for other functions: i.e. Medical Monitoring.
17 - 18.	Entry Team/Decon Element	Enter names and level of PPE of Entry & Decon personnel. (Entries 1 - 4 mandatory buddy system and back-up.)
19.	Material	Enter names and pertinent information of all known chemical products. Enter UNK if material is not known. Include any which apply to chemical properties. (Definitions: ph = Potential for Hydrogen (Corrosivity), IDLH = Immediately Dangerous to Life and Health, P.P. = Flash Point, I.T. = Ignition Temperature, V.P. = Vapor Pressure, V.D. = Vapor Density, S.G. = Specific Gravity, LEL = Lower Explosive Limit, UEL = Upper Explosive Limit)
20 - 23.	Hazard Monitoring	List the instruments which will be used to monitor for chemical.
24.	Decontamination Procedures	Check NO if modifications are made to standard decontamination procedures and make appropriate Comments including type of solutions.
25 - 27.	Site Communications	Enter the radio frequency(ies) which apply.
28 - 29.	Medical Assistance	Enter comments if NO is checked.
30.	Site Map	Sketch or attach a site map which defines all locations and layouts of operational zones. (Check boxes are mandatory to be identified.)
31.	Entry Objectives	List all objectives to be performed by the Entry Team in the Exclusion Zone and any parameters which will alter or stop entry operations.
32 - 33.	SOP s, Safe Work Practices, and Emergency Procedures	List in Comments if any modifications to SOP s and any emergency procedures which will be affected if an emergency occurs while personnel are within the Exclusion Zone.
34 - 36.	Safety Briefing	Have the appropriate individual place their signature in the box once the Site Safety and Control Plan is reviewed. Note the time in box 34 when the safety briefing has been completed.

ICS 208 HM Page 3 3/98

Site Safety Plan Requirements
ICS 208 form

- Name key personnel responsible for site safety
- Describe the hazards and risks associated with each operation
- Confirm that personnel are adequately trained
- Describe PPE to be worn by personnel during various site operations

Site Safety Plan Requirements

- Describe any site-specific medical surveillance requirements
- Describe the program for air monitoring, personnel monitoring and environmental sampling
- Describe the actions to be taken to make the work environment less hazardous

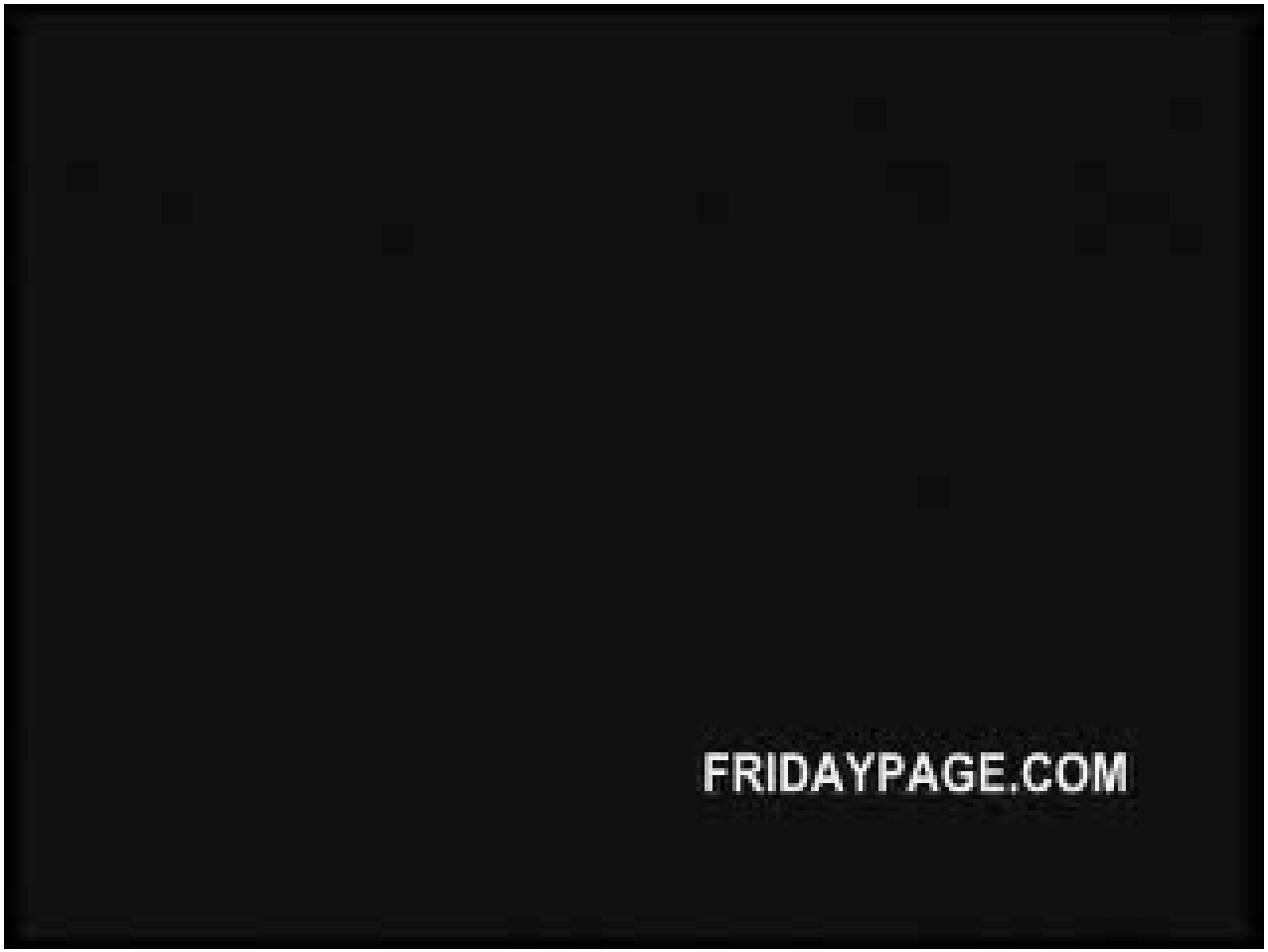
Site Safety Plan Requirements

- Define site control measures and include a site map
- Establish documentation procedures for personnel and equipment
- Include SOPs
- Requirement is NOT suspended because of a suspected or real terrorist event

Site Safety Plan Requirements

- Emergency Procedures – how personnel will respond to unplanned events
  - Entry Emergency
    - Stop work, move to Safe Refuge
  - Fire Emergency
    - Extinguish or let Fire group handle
  - Medical Emergency
    - Decon prior to transport?
  - Confined Space emergencies

Why do you really need one?



Exercise

You are performing an inspection at a Water Treatment Plant.

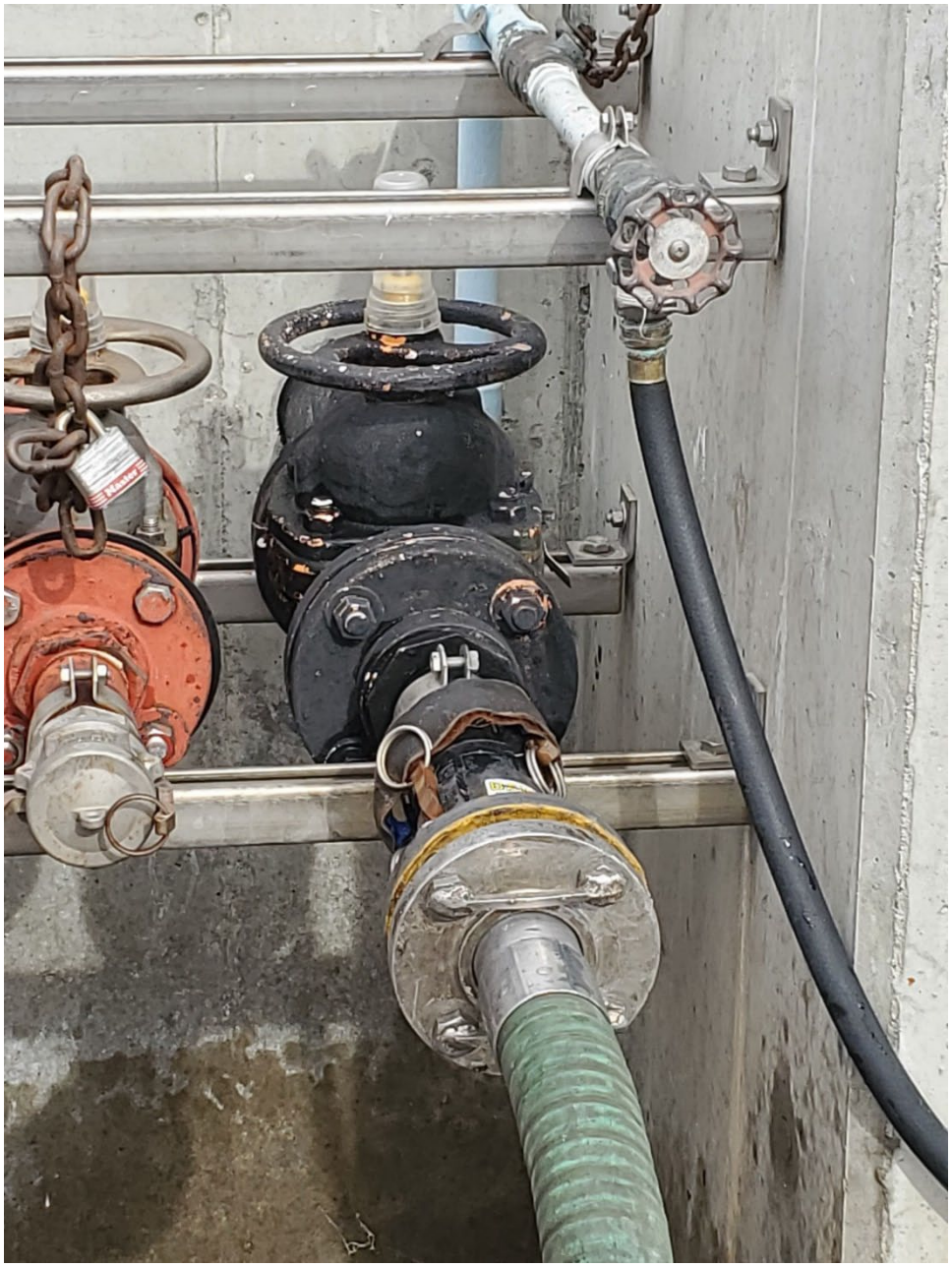
You are just starting to walk into the yard where you observe this scene:

Fluorosilicic Acid (FSA)

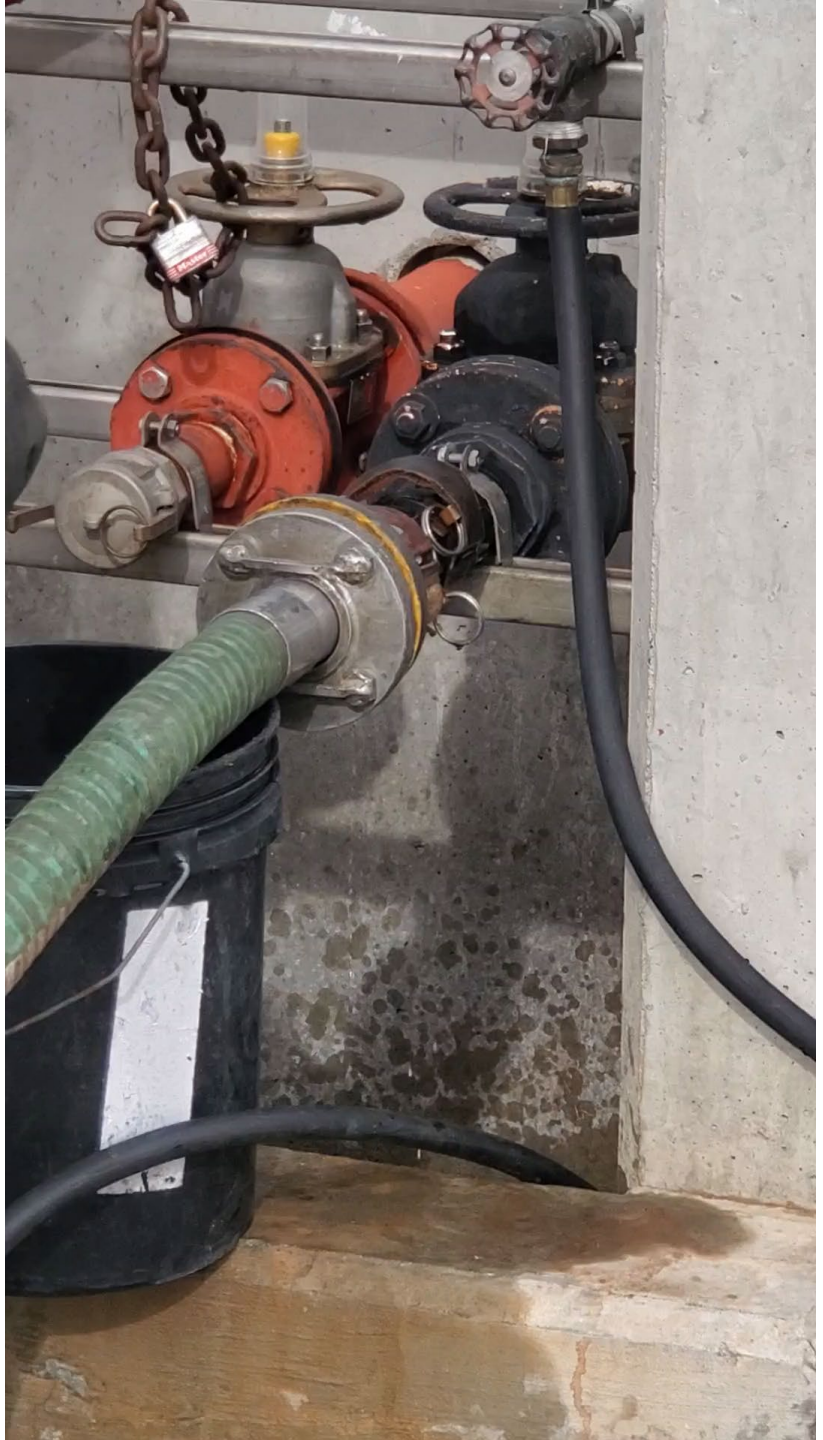
Driver was shown the correct valve to connect to and hooked up discharge hose


CAUSTIC TANK 2 FILL
FLUORIDE FILL

Driver used a double female adaptor to connect hose



The connection leaked at the gaskets of the adaptor




No exposure to driver or operators
1778
CAUSTIC TANK 2
CAUTION
PLANT AIR

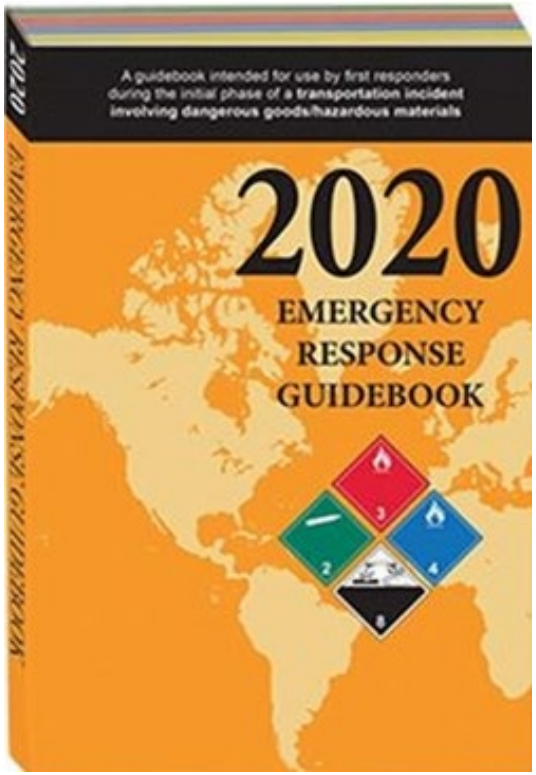

BANJO

Nothing reached the drains

YET!

Then the fun started to fix the issue

Use this for the Exercise later



Emergency Response Guidebook Worksheet

Incident Information	Weather Information	Product Information
Container type: _____	Temperature: _____	UN/NA #: _____
Size of leak:_____	Wind/Direction: _____	Hazard class: __/_____
Near water? YES NO	Precipitation: _____	Vehicle type: _____
Near people? YES NO		Placard color: _____
On fire? YES NO		

UN/NA Number Information

Chemical name: _____

_____

Highlighted? YES NO

Polymerization hazard? YES NO

If there is no other information, go to Guide # 111.

Guide #:

Is the entry highlighted?

YES NO

Is the material on fire?

NO YES

GREEN Section Information (FIRST)

Water reactive? YES NO

If so, TIH product formed: _____

Isolation zone (in all directions): _____

Downwind evacuation. Day: _____ Night: _____

ORANGE Section Information (SECOND)

Primary hazard (listed first): FLAMMABILITY HEALTH

Isolation zone (in all directions): _____

First aid info: _____

PPE suggestions: _____

Spill mitigation: _____

Firefighting measures: _____

LOOK UP FLUOROSILIC ACID

Emergency Response Guidebook Worksheet

Incident Information	Weather Information	Product Information
Container type: TANK	Temperature: 70	UN/NA #: 1778
Size of leak: Drip 1GPM	Wind/Direction: W To East	Hazard class: 8 / Corrosive
Near water? YES (NO)	Precipitation: No	Vehicle type: DOT 412
Near people? (YES) NO		Placard color: Black / White
On fire? YES (NO)		

UN/NA Number Information

Chemical name: 1778 Fluorosilicic Acid

Highlighted? YES (NO)

Polymerization hazard? YES (NO)

If there is no other information, go to Guide # 111.

Guide #: 154

Is the entry highlighted?

YES — (NO)

Is the material on fire?

(NO) — YES

GREEN Section Information (FIRST)

Water reactive? YES NO

If so, TIH product formed: _____

Isolation zone (in all directions): _____

Downwind evacuation. Day: _____ Night: _____

ORANGE Section Information (SECOND)

Primary hazard (listed first): FLAMMABILITY (HEALTH)

Isolation zone (in all directions): 150 Feet

First aid info: Move to FRESH AIR / O_2 / FLUSH 20 MIN

PPE suggestions: SCBA and Chem Protective Clothing

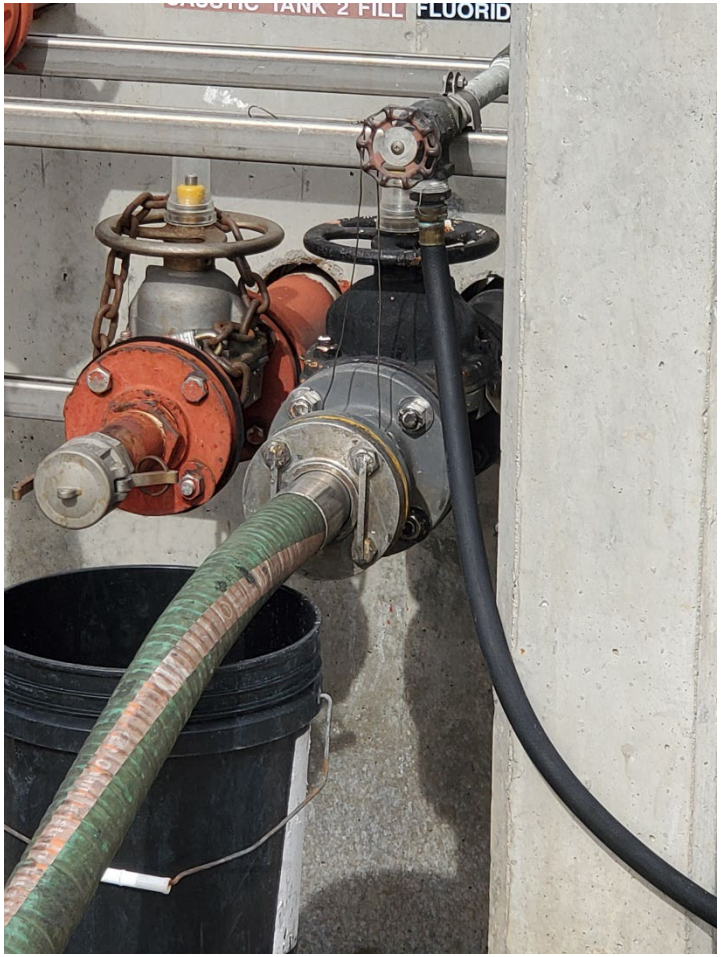
Spill mitigation: PREVENT ENTERING water / Absorb with Dry

Firefighting measures: DRY CHEM / Co_2 / WATER SPRAY

1) I will try to put you in breakout rooms.
2) Personnel available for the plan
    are your choice
3) Make up your own location
4) Use references :
    a) ERG,
    b) Wiser
    c) NIOSH
    d) FSA SDS

Be ready to do a briefing in 15 min.

To prevent this from happening a second time

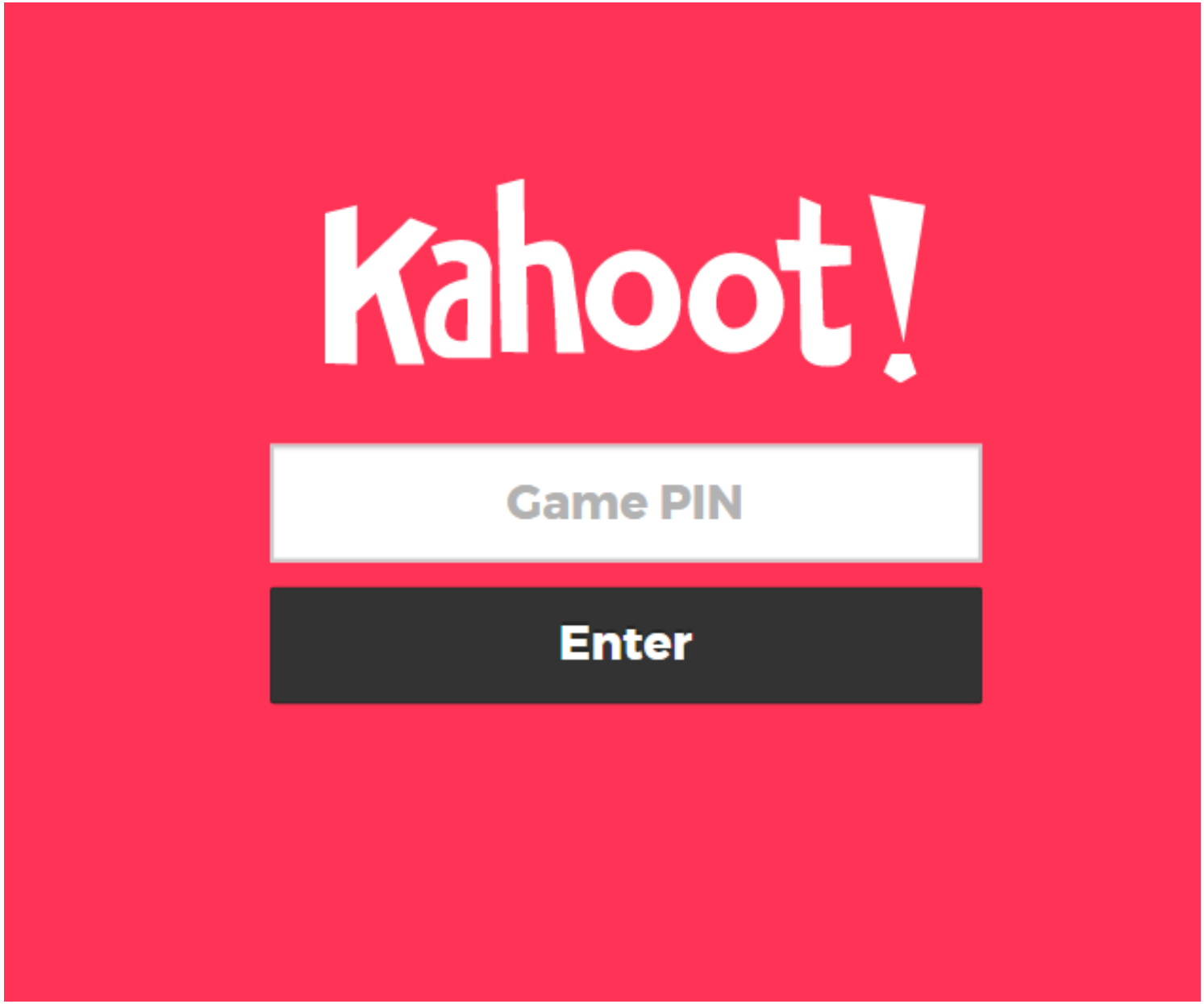


Any Questions?

Your Refresher Certificates will be emailed to you next week

Nick Vent
Sustainable Workplace Alliance
Hazmatvent@gmail.com
619-778-9500

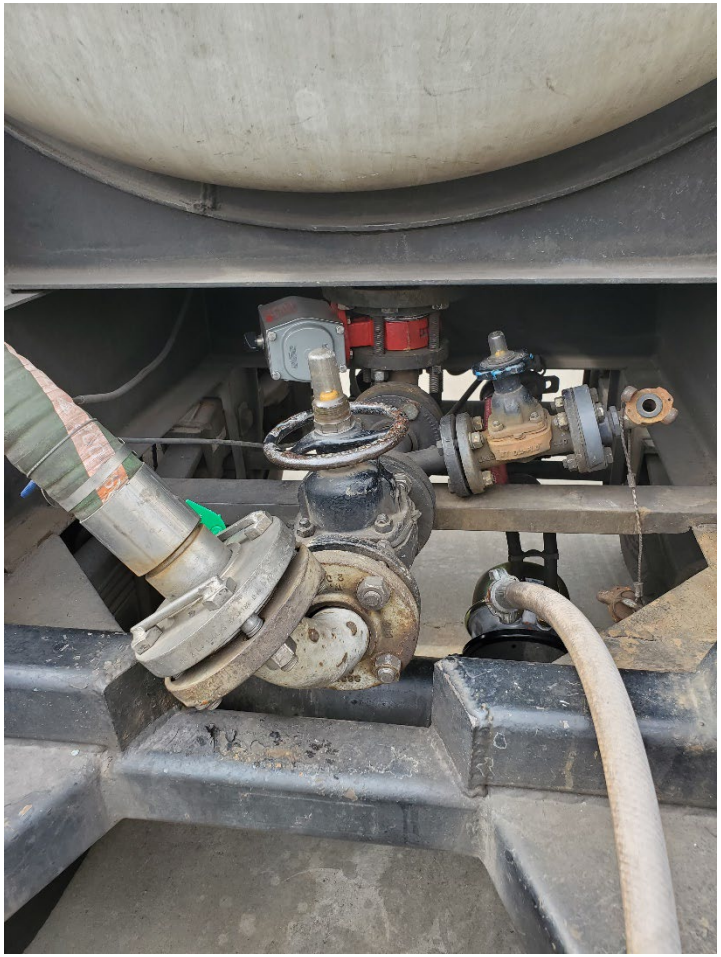
www.kahoot.it



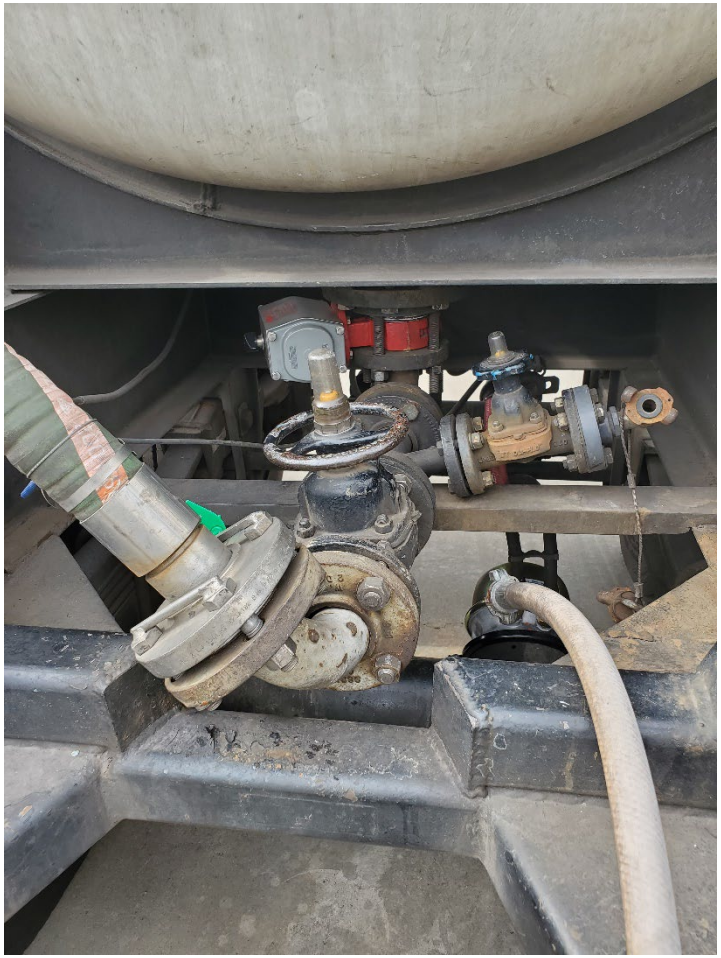
www.kahoot.it

Keep it clean please

How can you shut off the vacuum truck in an emergency



How can you shut off the vacuum truck in an emergency



How can you shut off the vacuum truck in an emergency

Right front of the truck

Cover Storm Drains
Let’s talk about it