

“Where’s the Waste?, and Where are you Storing It?”

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Bur. of Hazardous Waste Compliance &
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Container Management.



What is a container?

Definition of a Container:

- 40 CFR 260.10 Subpart B:

A container mean any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

Can you show me some examples????

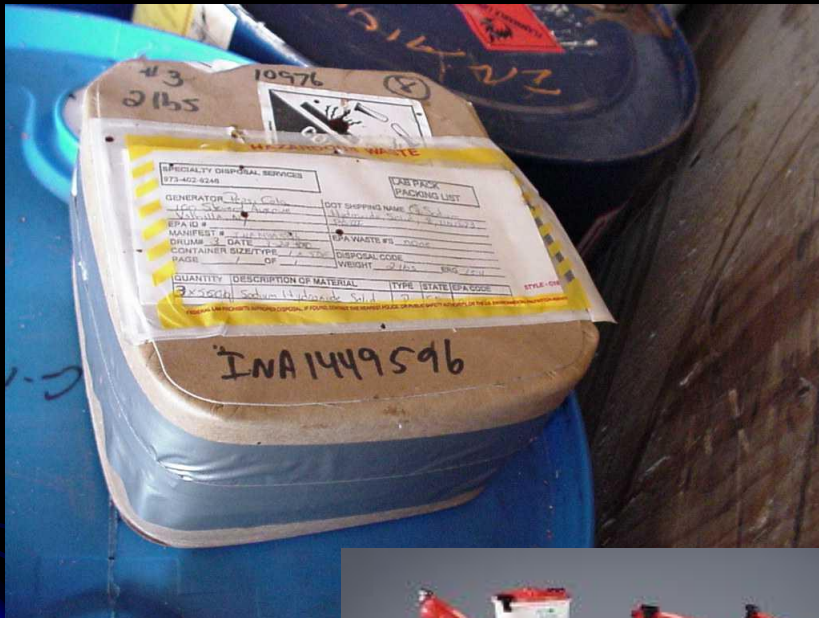
Most Common Container found:



Other Containers Include:



Other Containers Include:



Other Containers Include:



Other Containers Include:



Other Containers Include:

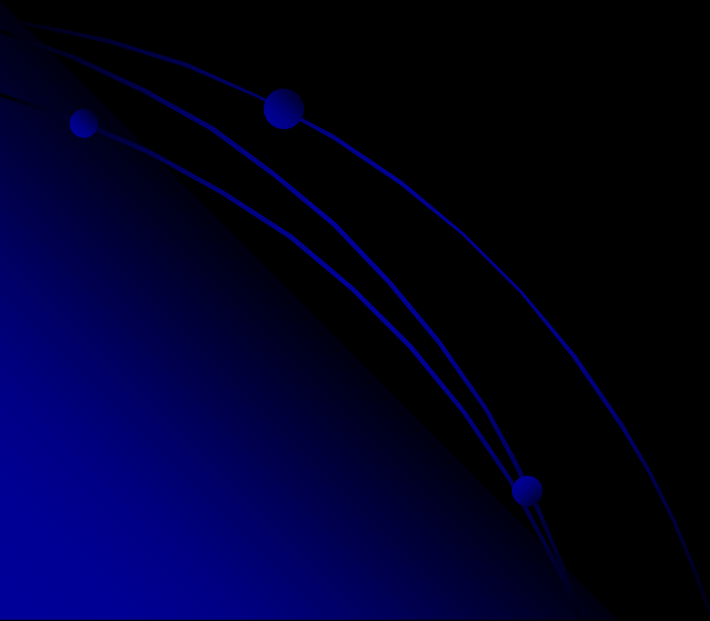


Other Containers Include:



Other Containers Include:

- Boxes (various sizes and materials)
- One cubic yard heavy duty cardboard boxes with a plastic liner (gaylord boxes)



Is this a tanker or container?



But what “kind” of container do you have?!?

- What the Department’s inspector means, is your hazardous waste container:
 - a) Satellite Accumulation Area?
(formerly a Satellite Accumulation Container),

OR

 - b) Hazardous Waste Storage Container?
(in a Central Accumulation Area)

Satellite Accumulation Area



Satellite Accumulation Area

- Typically the beginning of the hazardous waste container management cycle.

(Logical place to start)

- Most generators will have at least one SAA, but may have more satellite accumulation areas (containers) accumulating waste onsite, before a storage drum is ever created.

Once an inspector sees a hazardous waste satellite accumulation area...

What are we (the inspector) going to look for?



Satellite Accumulation Area (SAA) Requirements:

- 40 CFR 262.15(a) – The generator does not accumulate more than **55 gallons** of hazardous waste or **one quart** of acutely hazardous waste (listed in §261.33(e)).
- The SAA is **at or near any point** of generation where wastes initially accumulate, **AND** is **under the control** of the operator of the process generating the waste.

40 CFR 262.15(a) continued:

If these requirements are met, then there is no limit on the amount of time waste can be stored in SAA.

(Excerpts from the Revised Satellite Accumulation Policy)

- The goal is that this temporary accumulation is performed responsibly and **safely**, with adequate oversight and control.
- The applicability of the satellite accumulation provision will always depend upon a generator's particular set of circumstances, which are **site-specific**.
- Therefore, any questions regarding specific wastes at specific facilities are best answered by the agency implementing the RCRA program for that particular facility

However.....

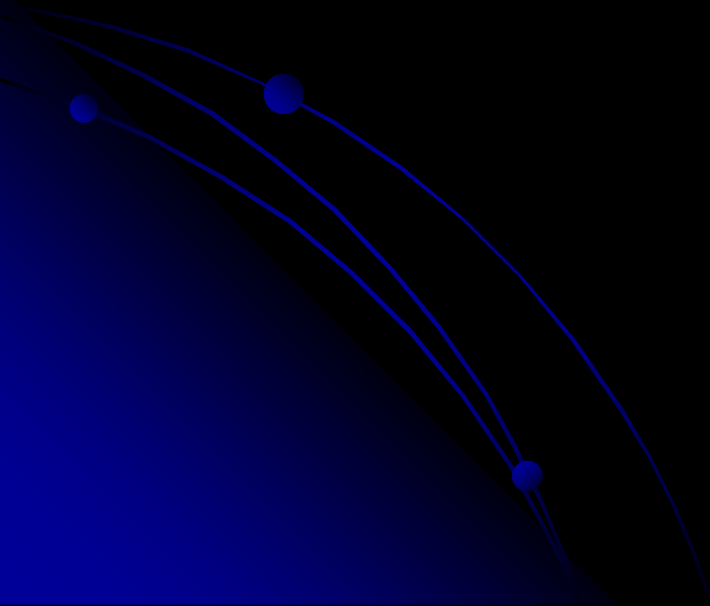
If a generator accumulates waste in excess of the amounts listed in 40 CFR 262.15(a), at or near any point of generation must **(55 gallons)**, with respect to that amount of excess waste, within **three calendar days**:

a) Comply with the applicable Central Accumulation Area (CAA) requirements in 40 CFR 262.16(b) (SQG) or 40 CFR 262.17(a) (LQG)

OR

b) Remove the excess from SAA (within 3 days) to an onsite CAA, onsite interim status or permitted TSDF, or offsite designated facility

Having said that.....

- The generator can continue to store the container or containers, containing the excess amounts of hazardous waste, at the SAA for those additional three days.
- 

Most Common Satellite Accumulation Area (SAA) Requirements:



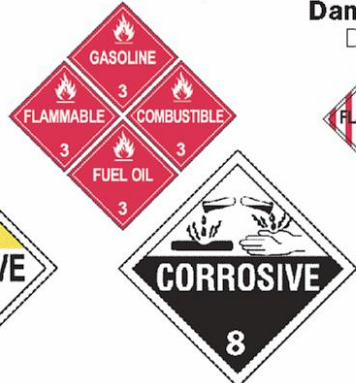
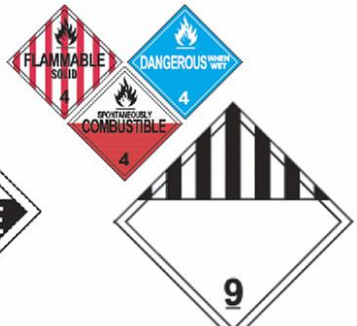

- 40 CFR 262.15(a)5 - Mark and/or label containers **with** the words “**Hazardous Waste**” and an indication of the hazards of the contents. (NEW as of 5/31/17)
 - A label, tag, etc... on the container is acceptable.
 - The key is that the label or mark must indicate that the material is a hazardous waste and not a raw material or product
 - Indicate the hazards of the contents.

How to indicate the hazards?

Several options available to generators:

USDOT Hazard Markings (most common)

Nine Classes of Hazardous Materials

<p>Class 1: Explosives Divisions: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6</p>  <p>Class 6: Poison (Toxic) and Poison Inhalation Hazard</p>	<p>Class 2: Gases Divisions: 2.1, 2.2, 2.3</p>  <p>Class 7: Radioactive</p>	<p>Class 3: Flammable Liquid and Combustible Liquid</p>  <p>Class 8: Corrosive</p>	<p>Class 4: Flammable Solid, Spontaneously Combustible, and Dangerous When Wet Divisions 4.1, 4.2, 4.3</p>  <p>Class 9: Miscellaneous</p>	<p>Class 5: Oxidizer and Organic Peroxide Divisions 5.1, 5.2</p>  <p>Dangerous</p>
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Revised 06/05

Federal Motor Carrier Safety Administration

U.S. Department of Transportation
www.fmcsa.dot.gov

How to indicate the hazards?

Hazardous Material Identification System (HMIS)

Ammonium Hydroxide

HEALTH	2
FLAMMABILITY	0
REACTIVITY	0

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

Personal Protection **J**

HEALTH HAZARD
4 DEADLY
3 EXTREME DANGER
2 HAZARDOUS
1 SLIGHTLY HAZARDOUS
0 NORMAL MATERIAL

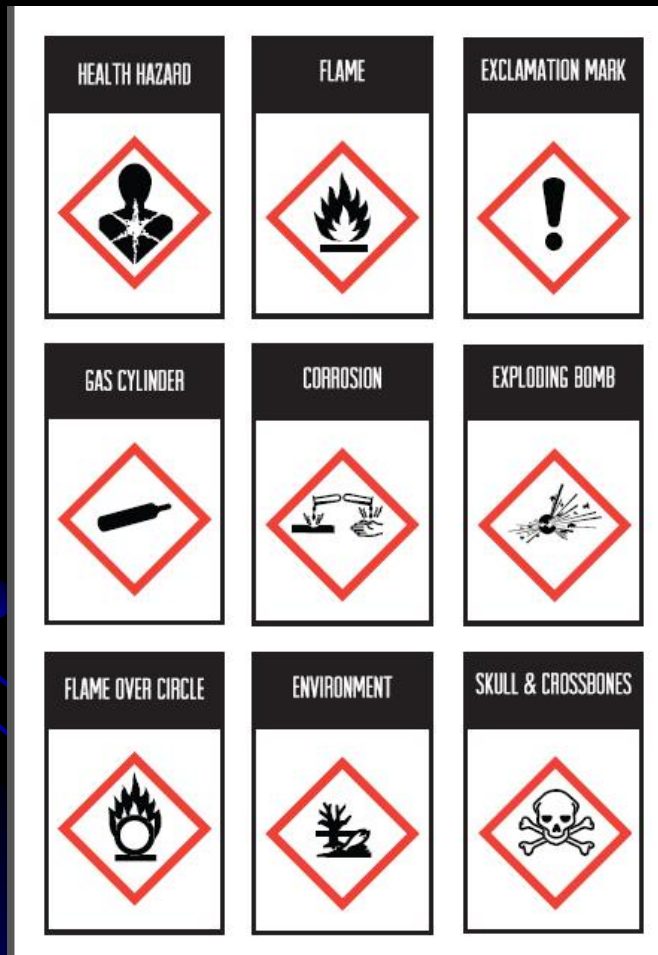
FIRE HAZARD
FLASH POINT:
4 BELOW 73°F
3 BELOW 100°F
2 BELOW 200°F
1 ABOVE 200°F
0 WILL NOT BURN

SPECIFIC HAZARD
OXIDIZER OX
ACID ACID
ALKALINE ALK
CORROSIVE COR
USE NO WATER #
RADIOACTIVE ☼

INSTABILITY
4 MAY DETONATE
3 SHOCK + HEAT
MAY DETONATE
2 VIOLENT CHEM.
CHANGE
1 UNSTABLE IF
HEATED
0 STABLE

National Fire Protection Association (NFPA) "Fire Diamond"

How to indicate the hazards?



Safety
Data
Sheet
Pictograms

How to indicate the hazards?

Simply mark and/or label the container with characteristics found in the hazardous waste:

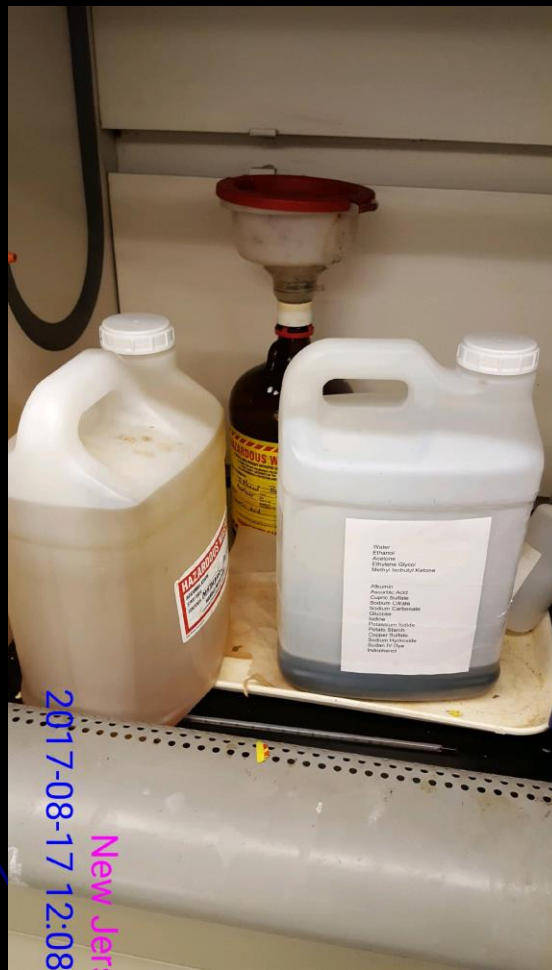
+ Ignitable / Flammable

+ Corrosive

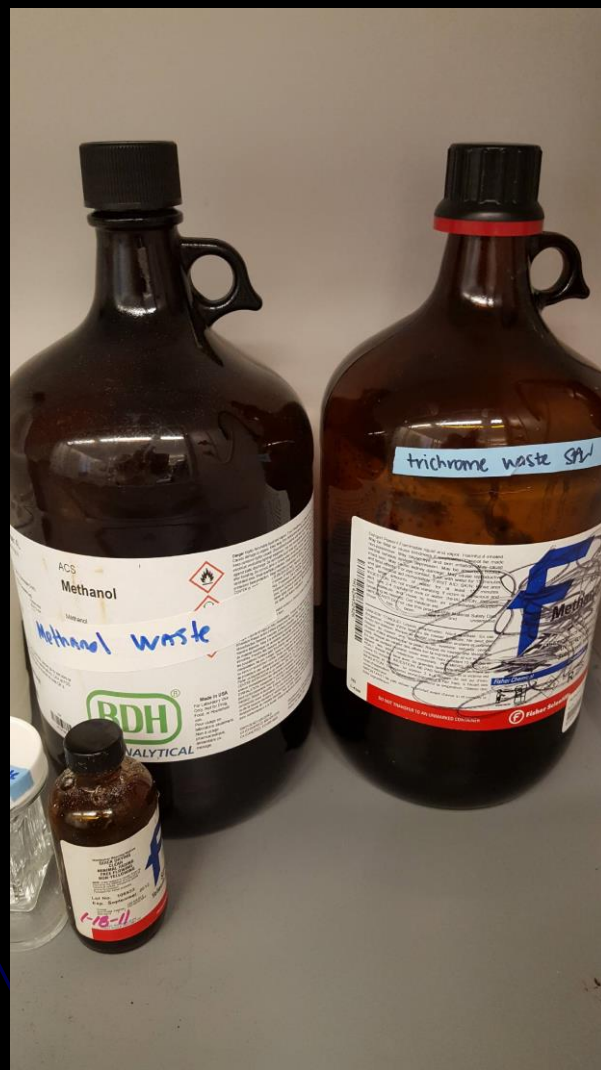
+ Reactive

+ Toxic

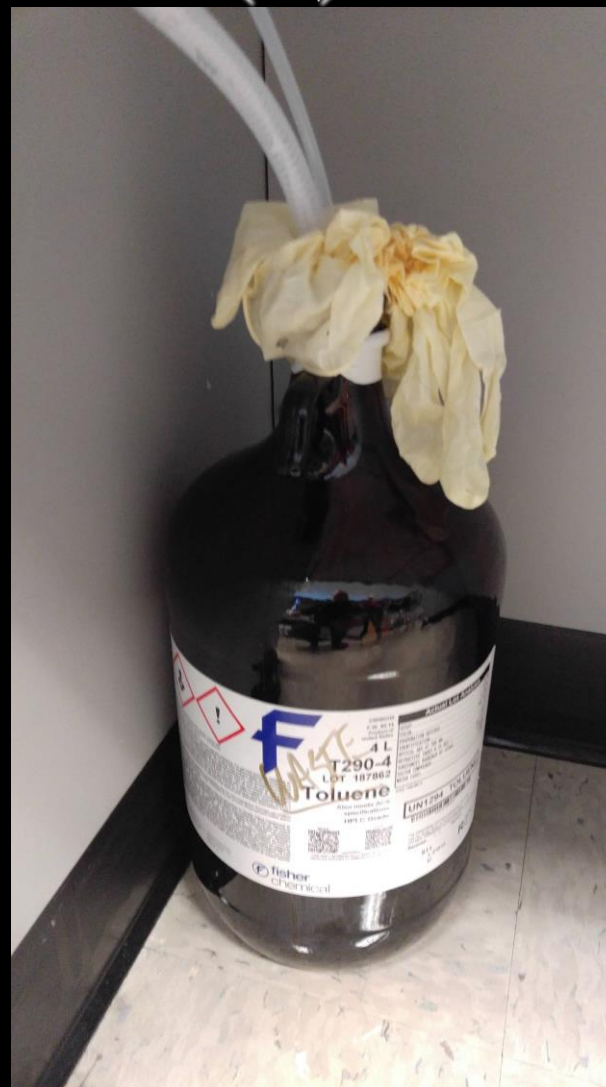
Common problems seen with 40 CFR 262.15(a)5



Common problems seen with 40 CFR 262.15(a)5



Common problems seen with 40 CFR 262.15(a)5



How it should/can be done:



SAA Excess Waste Handling:



Secondary Containment

- The Department **recommends** Secondary Containment for the following containers in order to minimize the potential for breakage and to minimize the consequences in the event of breakage
 - Glass containers holding liquid hazardous waste kept on the floor.
 - Containers with capacity of less than 4 Liters, of liquid hazardous waste, regardless of storage location

NOTE: In general, secondary containment is also to be used as a means of preventing incompatibles from interacting in the event of breakage and/or spillage. Hazardous waste are to be segregated by hazard class and stored in separate cabinets, trays, or pans.



ACCEPTABLE SECONDARY CONTAINMENT OPTIONS





New Jersey

2018-03-14 09:58:43

Conveyance Containers

- The Department “No Longer Condones” the use of a conveyance container (i.e. a laboratory safety can) to move or convey waste from an initial generation point (i.e. lab work station) to a container at a SAA.
- Conveyance container itself is **subject to SAA requirements**.
- Containers that are connected to laboratory apparatus or a piece of equipment, are not considered part of the process and are therefore **subject to SAA requirements**.

Conveyance Containers



2

New Jersey
2017-01-31 12:51:23

sey
08

Other SAC requirements

- **262.15(a)1 Conditions of Containers.** (If a container holding a hazardous waste is not in good condition or if it begins to leak, the generator must transfer the hazardous waste from this SAA to a container that is in good condition, OR immediately transfer and manage waste in a CAA....)
- **265.15(a)2 Compatibility of Waste with Containers.** (Container used must be made of or lined with materials which will not react with and are otherwise compatible with the hazardous waste to be accumulated. This is so the ability of the container to contain the waste is not impaired.)
- **265.15(a)4 Management of Containers.** (Container holding hazardous waste must always be closed during accumulation, except when it is necessary to add or remove waste, consolidate waste, or when temporary venting of a container is necessary **IN AN EMERGENCY!!!**)

Requirements for both Satellite Accumulation Areas, **AND** Hazardous Waste Storage Containers...to be discussed later as well !!!

Central Accumulation Area



Why were Container Management / Storage Regulations originally created?

May 19, 1980 preamble

- to minimize emissions of volatile wastes;
- help protect ignitable or reactive waste(s) from sources of ignition or reaction;
- Help prevent spills; and
- Reduce the potential from the mixing of incompatible waste and direct contact of facility personnel with waste(s)

Suggests that containers are closed with lids or some other closure device when adding or removing the waste from the container.

When an inspector visits a hazardous waste storage area, what are we going to look for?

Well, that depends on the type of generator that you are:

- + Large Quantity Generator (LQG)
- + Small Quantity Generator (SQG)
- + Very Small Quantity Generator (VSQG)

However, ALL Generators MUST
comply with
262 Subpart C

Before transporting hazardous waste or offering hazardous waste for transportation offsite, a generator must package the waste in accordance with ALL applicable USDOT regulations, on packaging, under 49 CFR parts 173, 178, and 179.

49 CFR 173 – Covers the General requirements for Shipments & Packaging of Hazardous Materials / Wastes.

49 CFR 178 – Covers the “Specifications for the Packaging” that the hazardous material/waste will be shipped in.

49 CFR 179 – Covers the “Specifications for Tank Cars”

A Central Accumulation Area is considered:

An area where waste accumulation container(s) are of such distance from the process generating the waste, or in such a location, that it is **NOT** routinely within the control and cognizance of the operator of the process.

Examples:

- a) Location of the accumulation container in another room where intervening walls or partitions block it from the view of the process operator for significant periods of time.
- b) Place the container in areas subject to other plant activities not under the control of the process operator where the risks of release or mismanagement may be greater.
- c) Location of the waste storage container outside a building in which the waste is generated may be regarded as placing it beyond the routine attention of the process operator, and therefore not legitimate satellite accumulation.

Accumulation Time Limitations

- VSQG's – NONE, as long as Hazardous Waste in storage does not exceed 999Kg, and maintain VSQG waste generation rates (<100 Kg/220 lbs/@30 gal. per mo.)
- A VSQG that accumulates >1,000Kg / 2,200 lbs. can only accumulate hazardous waste for 180-days from the day it exceeded the limit. 40 CFR 262.14(a)4(i-iii) & 40 CFR 262.14(a)5

Accumulation Time Limitations

SQG's – must manifest/ship Hazardous Waste offsite within 180-days of being accumulated onsite (40 CFR 262.16(b))

LQG's – must manifest/ship Hazardous Waste offsite within 90-days of being accumulated onsite (40 CFR 262.17(a))

Exceptions to Accumulation Time Limitations:

- 40 CFR 262.16(c) –

If you are a SQG of hazardous waste, who must transport his waste, or offer his waste for transportation, over a distance of greater than 200 miles for off-site treatment, storage or disposal may accumulate waste on-site for 270 days or less without a permit, or without having interim status provided that compliance with the requirements of 40 CFR 262.16(b).

NOTE: The quantity of waste accumulated on-site may never exceed 6000 kilograms during time period.

Exceptions to Accumulation Time Limitations:

NOTE:

- If you are a SQG of hazardous waste, and has accumulated greater than 6000 Kg of hazardous waste onsite, or has stored hazardous waste onsite for greater than 180-days, the generator is considered an operator of a storage facility and is subject to the requirements of 40 CFR parts 264 & 265 (TSDf), and permit requirements of 40 CFR part 270 (TSDf), **UNLESS** the generator has been granted an extension to the 180-day period.

NOTE: An extension of up to 30-days may be granted by the Department, on a case-by-case basis.

Exceptions to Accumulation Time Limitations:

NOTE:

- If you are a LQG of hazardous waste, and accumulate hazardous waste onsite for more than 90-days, the generator is considered an operator of a storage facility and is subject to the requirements of 40 CFR parts 264 & 265 (TSDF), and permit requirements of 40 CFR part 270 (TSDF), **UNLESS** the generator has been granted an extension to the 90-day period.

NOTE: An extension of up to 30-days may be granted by the Department, on a case-by-case basis.

Common Container Accumulation Area Requirement:

- While being accumulated on-site, each hazardous waste storage container...must be clearly marked, and/or labeled with the words “**Hazardous Waste**” and an indication of the hazards of the contents. (NEW as of 5/31/17) Exactly the same as Satellite Accumulation Area containers.

Inspector looking for:

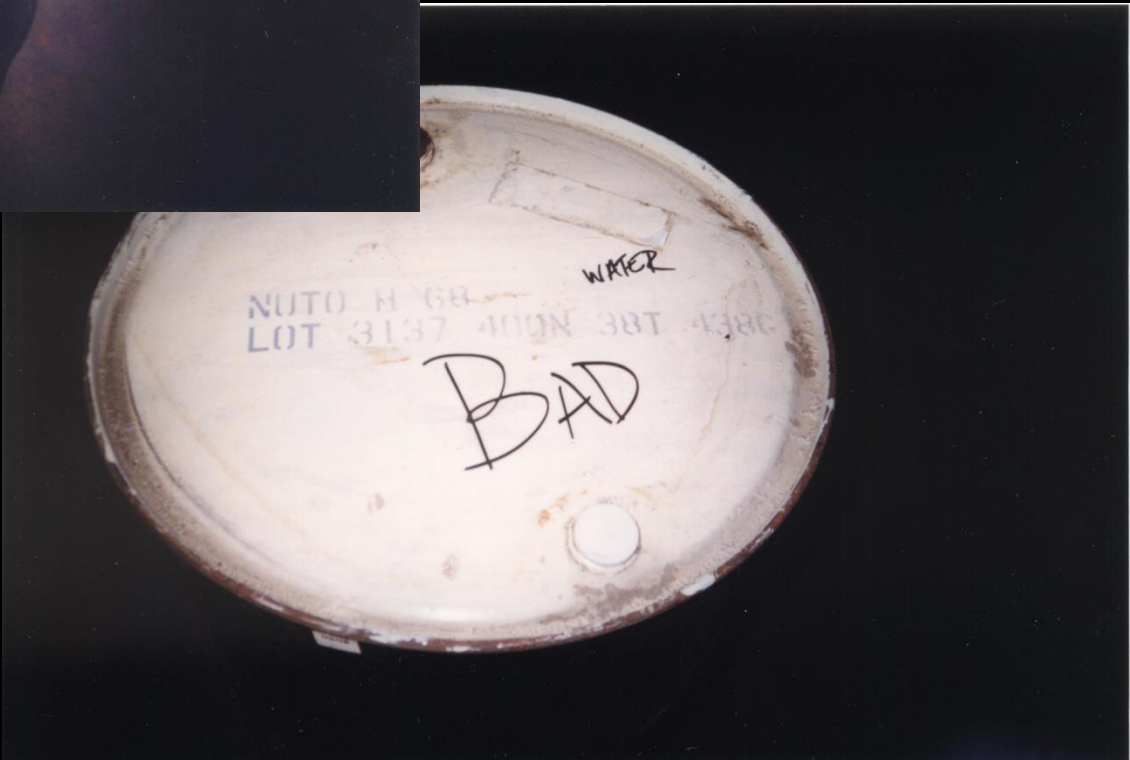
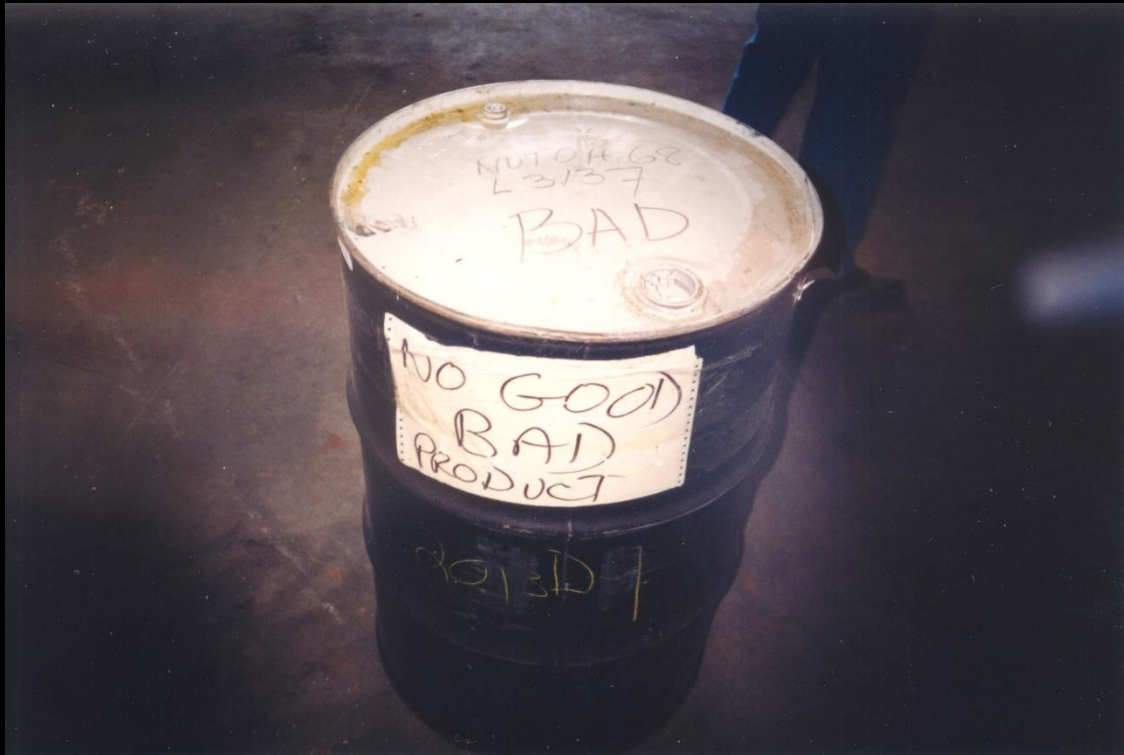
- A label, tag, etc... on the container is acceptable.
- The key is that the label or mark must indicate that the material is a hazardous waste and not a raw material or product and indicates the hazards of the contents. (USDOT marking, HMIS & NFPA labels, SDS pictograms, etc.)
- 40 CFR 262.17(a)(5)(i)(A)-(B) Large Quantity Generator
- 40 CFR 262.16(b)(6)(i)(A)-(B) Small Quantity Generator
- Very Small Quantity Generator - ENCOURAGED

Common problems seen with Hazardous Waste Storage Container Labeling



BAS WASH

07/17/2009

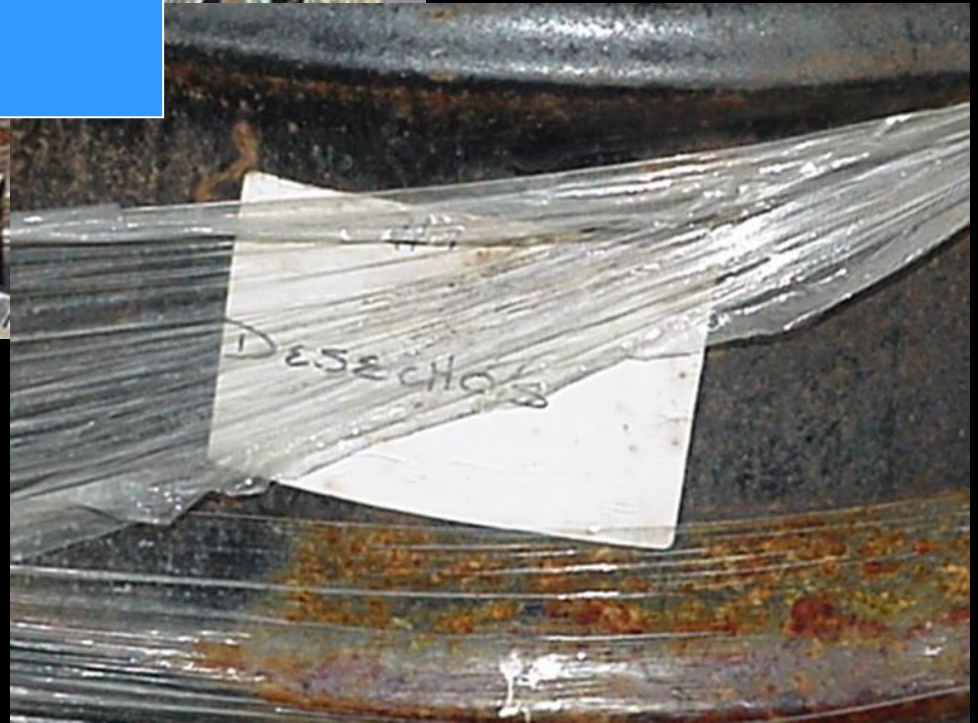


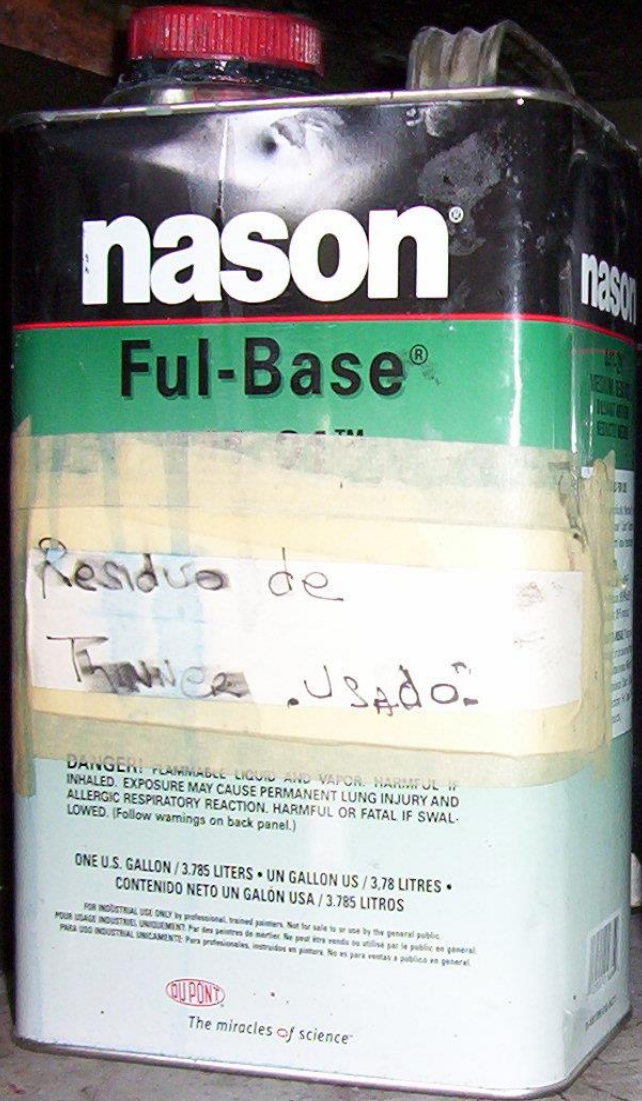


04/15/2015









07/09/2008





~~SOLID WASTE
Catalyst
RECOVERY~~

CAS 120-14-6 $C_{10}H_{10}O_4$ Pcode: 10095778 185124-31 G Lot# A34084
Dimethyl terephthalate

~~SOLID WASTE
Pd/C~~

~~DO NOT PUT
ANYTHING ELSE~~

01/03/2013 13:26

lid
waste







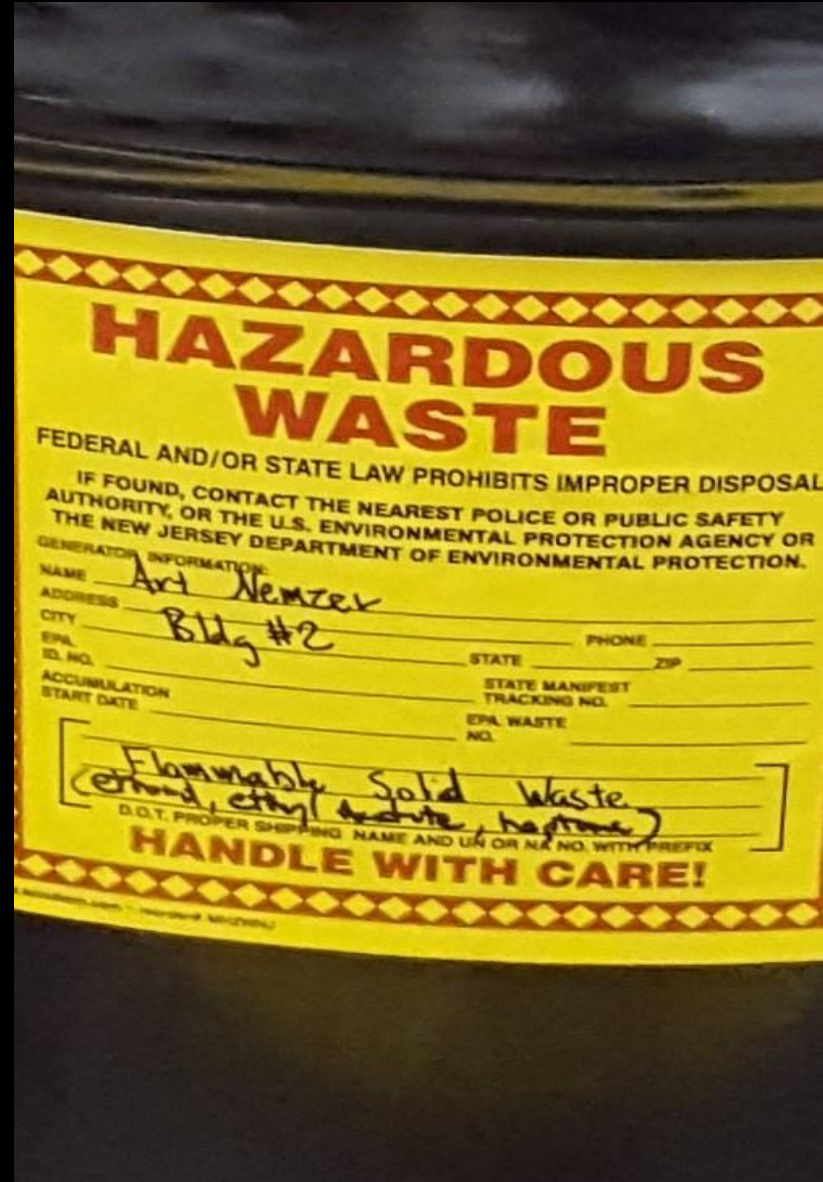


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New Jersey



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New Jersey

Is this SAA/CAA container in compliance?



Common Container Accumulation Area Requirement:

- “The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container.

(40 CFR 262.16(b)(6)(i)(C) for SQG)

(40 CFR 262.17(a)(5)(i)(C) for LQG)

- Reason:

- + SQG – has 180-day storage limit

(40 CFR 262.16(b))

- + LQG – has 90-day storage limit

(40 CFR 262.17(a))

Common problems seen with 40 CFR 262.16(b)(6)(i)(C) or 40 CFR 262.17(a)(5)(i)(C)



HAZARDOUS WASTE
FEDERAL AND/OR STATE LAWS PROHIBIT IMPROPER DISPOSAL

IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, THE U.S. ENVIRONMENTAL PROTECTION AGENCY OR THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION 2-5624

GENERATOR INFORMATION:

NAME _____

ADDRESS _____

CITY NEWARK PHONE 732/652-

EPA ID NO. / MANIFEST DOCUMENT NO. _____ STATE NJ ZIP 07114

STATE MANIFEST DOCUMENT NO. _____

ACCUMULATION START DATE _____ EPA WASTE NO. D001

RQ, WASTE RESIN SOLUTION, 3, UN1866, PGII, ERG#127.

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX IF APPLICABLE

HAZARDOUS WASTE
HANDLE WITH CARE!

12/19/2005





How it should/can be done:



How it should/can be done:

HAZARDOUS WASTE

FEDERAL AND/OR STATE LAW PROHIBITS IMPROPER DISPOSAL. IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY OR THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION.

NAME: *Silver*
ADDRESS: *400105*
CITY: *08*
STATE: *08* PHONE: _____
EPA ID NO. _____
ACCOUNT NO. _____
DATE: _____ STATE MANIFEST NO. _____
EPA WASTE NO. _____


HAZARDOUS WASTE

11/27/17 - Start Date

CONTENTS: *Presswash Waste*

HANDLE WITH CARE!
CONTAINS HAZARDOUS OR TOXIC WASTES

FLAMMABLE



Hazardous Waste

[This label is for internal identification purposes ONLY. The required labels will be placed on this drum upon placing into the storage area.]

State & Federal Law Prohibits Improper Disposal. If found contact the nearest Police or Public Safety Authority or The U.S. Environmental Protection Agency.

UN1993 Waste Flammable Liquids, N.O.S. (Aliphatic Hydrocarbons, Aromatic Hydrocarbons)

Press Wash Waste ONLY

Solamente Exceso de lavada de la prensa

Date Started

09/09/2010

9/3/2010

Common Container Accumulation Area Requirement:

- A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste, consolidate waste, or when temporary venting of a container is necessary

Reason: To prevent the release of hazardous waste, and/or its vapors. Again, to prevent a spill from occurring, and protect workers from hazardous vapors, fumes, etc...

- 40 CFR 262.16(b)(2)(iii)(A) (SQG)
- 40 CFR 262.17(a)(1)(iv)(A) (LQG)

(Satellite Accumulation Area Requirement)

Common problems seen with 40 CFR 262.16(b)(2)(iii)(A) and 40 CFR 262.17(a)(1)(iv)(A)



HAZARDOUS WASTE

FEDERAL LAWS PROHIBIT IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE OR
PUBLIC SAFETY AUTHORITY OR THE
U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERATOR INFORMATION

NAME: NICK STADT MOELLER INC
ADDRESS: 1169 EDGEMER AVE
CITY: WIDGE FIELD STATE: OH IO 43087
EPA ID: FOOS, D001
REGISTRATION NO: 121501
START DATE: 12/15/01

[Flammable Waste]
[Flammable Liquid]

HANDLE WITH CARE!

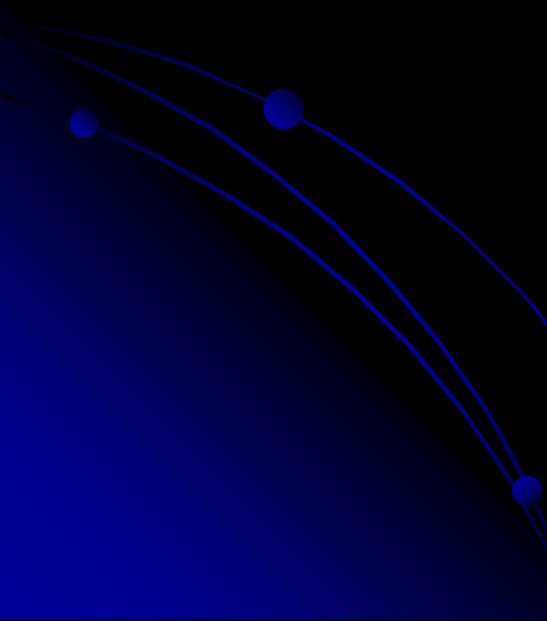














How it should,
and can be
done:

(and maybe not!)



Common Container Accumulation Area Requirements:

- A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak its contents
- 40 CFR 262.16(b)(2)(iii)(B) - SQG
- 40 CFR 262.17(a)(1)(iv)(B) - LQG

Common problems seen with 40 CFR 262.16(b)(2)(iii)(B) and 40 CFR 262.17(a)(1)(iv)(B)





10/15/2008



10/15/2008

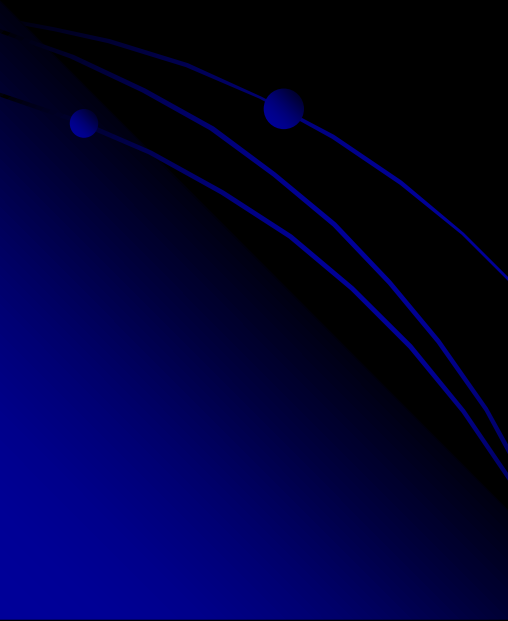
In addition to 40 CFR 262.16(b)(2)(iii)(B)
and 40 CFR 262.17(a)(1)(iv)(B)....

If a generator's containers, holding hazardous waste are not in good condition, or if they begin to leak, the owner or operator (generator) must transfer the hazardous waste from this "bad" container to container that is in good condition; or manage the waste in some other way that complies with this requirement.

+ 40 CFR 262.16(b)(2)(i) – SQG

+ 40 CFR 262.17(a)(1)(ii) - LQG

(Satellite Accumulation Area Requirement)







Common Container Accumulation Area Requirements:

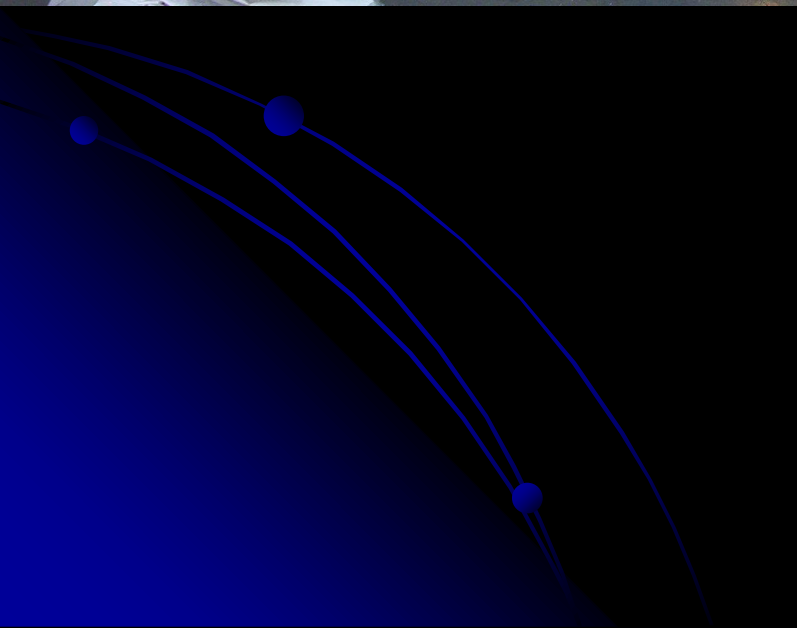
Required Aisle Space - An owner or operator (generator) must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency (Example – DEP requires 18” for single-stacked 55-gallon drums)

+ 40 CFR 262.16(b)(8)(v) – SQG

+ 40 CFR 262.255 - LQG









DANGER
HAZARDOUS WASTE
STORAGE AREA
UNAUTHORIZED PERSONS
KEEP OUT

05/05/2010



05/05/20



05/05/2010



How it should/can be done:





Common Container Accumulation Area Requirements:

Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee.

- + 40 CFR 262.16(b)8(iv) SQG

- + 40 CFR 262.254(a)-(b) LQG

REMEMBER!!!

Hazardous Waste Central Accumulation Area (CAA) description, is:

An area where waste accumulation container(s) are of such distance from the process generating the waste, or in such a location, that is not routinely within the control and cognizance of the operator of the process.

- Central Accumulation Areas are usually well removed from the active parts of a facility, and the only means of communications is through some type of communications device – phone, alarm, 2-way radio, etc...



**WASTE
SOLVENT**

**WASTE
OIL**

ALL DRUMS
MUST BE CAPPED
AT ALL TIMES.



Common Container Accumulation Area Requirements:

- The owner or operator (generator) must inspect area where containers are stored, at least weekly, looking for leaks and for deterioration caused by corrosion or other factors.
- 40 CFR 262.16(b)2(iv) - SQG
- 40 CFR 262.17(a)1(v) - LQG

Things to remember about inspections:

- Container Management and weekly inspections go hand-in-hand.
- Ensures hazardous waste storage containers are being properly managed.
- Ensures any problems that are found, are/can be addressed in a prompt manner before any serious injury or property damage can occur.
- Written inspection log **not required** for SQG/LQG, but highly recommended to show that the required inspections are being conducted.

WEEKLY CONTAINER STORAGE AREA INSPECTION LOG

ITEM/WEEK	WEEK OF _____	WEEK OF _____	WEEK OF _____	WEEK OF _____	WEEK OF _____
Containers in good condition, not leaking?					
Containers closed when not in use?					
Containers properly marked?					
Container markings visible?					
Containers stored longer than allowed?					
Containers segregated by waste type?					
Ignitable or reactive waste stored >50' from property line?					
Adequate aisle space?					
Spill control, communication, safety, & fire equipment present?					
Name, date, and time of performing inspection					
Corrective action taken (Use separate sheet as necessary)					

03/30/2011

Commonly Overlooked Central Accumulation Area Requirements:

Storage of Incompatible Hazardous Wastes

as per 40 CFR 260.10 – an incompatible waste is a hazardous waste which is unsuitable for placement in a particular device because it may cause corrosion or decay of containment materials (i.e.. container inner liners), OR commingling with another waste or material under un-controlled conditions because the commingling might produce heat or pressure, fire or explosion, violent reaction, toxic dusts, mists, fumes, or gases, or flammable fumes or gases.

Storage of Incompatible Hazardous Waste

“Incompatible waste, or incompatible wastes and materials must not be placed in the same container... hazardous waste must not be placed in an unwashed container that previously held incompatible waste or material... or a storage container holding hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, must be separated from the other materials or protected from them by means of dike, berm, wall, or other device.

SQG – 40 CFR 262.16(b)(2)(v)

LQG – 40 CFR 262.17(a)(1)(vii)

NOTE: Appendix V shows examples of incompatible waste, and materials.

Appendix V

40 CFR 265

Environmental Protection Agency

Pt. 265, App. V

Formulae for calculation of the t-statistic and tables for t-test of significance can be found in most introductory statistics texts.

APPENDIX V TO PART 265—EXAMPLES OF POTENTIALLY INCOMPATIBLE WASTE

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes, or gases, or (5) flammable fumes or gases.

Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to owners or operators of treatment, storage, and disposal facilities, and to enforcement and permit granting officials, to indicate the need for special precautions when managing these potentially incompatible waste materials or components.

This list is not intended to be exhaustive. An owner or operator must, as the regulations require, adequately analyze his wastes so that he can avoid creating uncontrolled substances or reactions of the type listed below, whether they are listed below or not.

It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (e.g., adding acid to water rather than water to acid) or that neutralizes them (e.g., a strong acid mixed with a strong base), or that controls substances produced (e.g., by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator).

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

Group 1-A	Group 1-B
Acetylene sludge	Acid sludge
Alkaline caustic liquids	Acid and water
Alkaline cleaner	Battery acid
Alkaline corrosive liquids	Chemical cleaners
Alkaline corrosive battery fluid	Electrolyte, acid
Caustic wastewater	Etching acid liquids or solvent
Lime sludge and other corrosive alkalies	Pickling liquor and other corrosive acids
Lime wastewater	Spent acid
Lime and water	Spent mixed acid
Spent caustic	Spent sulfuric acid

Potential consequences: Heat generation; violent reaction.

Group 2-A	Group 2-B
Aluminum	Any waste in Group 1-A or 1-B
Beryllium	
Calcium	
Lithium	
Magnesium	
Potassium	
Sodium	
Zinc powder	
Other reactive metals and metal hydrides	

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

Group 3-A	Group 3-B
Alcohols	Any concentrated waste in Groups 1-A or 1-B
Water	
	Calcium
	Lithium
	Metal hydrides
	Potassium
	SO ₂ Cl ₂ , SOCl ₂
	PCl ₅ , CH ₃ SOCl ₂
	Other water-reactive waste

Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.

Group 4-A	Group 4-B
Alcohols	Concentrated Group 1-A or 1-B wastes
Aldehydes	
Halogenated hydrocarbons	
Nitrated hydrocarbons	
Unsaturated hydrocarbons	Group 2-A wastes
Other reactive organic compounds and solvents	

Potential consequences: Fire, explosion, or violent reaction.

Group 5-A	Group 5-B
Spent cyanide and sulfide solutions	Group 1-B wastes

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.

Group 6-A	Group 6-B
Chlorates	Acetic acid and other organic acids
Chlorine	
Chlorites	
Chromic acid	
	Concentrated mineral acids
	Group 2-A wastes
	Group 4-A wastes

Pt. 265, App. VI

Group 4-B	Group 6-A	Group 6-B
Concentrated wastes in Groups 1-A or 1-B	Chlorates	Acetic acid and other organic acids Concentrated mineral acids Group 2-A wastes Group 4-A wastes Other flammable and combustible wastes
	Chlorine	
	Chlorites	
	Chromic acid	
	Hyphochlorites	
	Nitrates	
	Nitric acid, fuming	
	Perchlorates	
	Permanganates	
	Peroxides	
	Other strong oxidizers	

Potential consequences: Fire, explosion, or violent reaction.

SOURCE: "Law, Regulations, and Guidelines"

03/30/2011

Common problems seen with Incompatible Waste Accumulation





FLAMMABLE SOLID!
DANGEROUS when wet.
Keep away from sparks,
open flames and dampness. Keep container
closed. Target organs: None known.
DO NOT use water, foam, carbon
dioxide. Cover with
sand, graphite, talc or
dry powder.
Immediately induce
vomiting if appropriate. Induce
vomiting if appropriate. Flush
with water.
Flush with cotton-tipped
swab.
INHALATION: Flush
with water. Give
immediate medical
attention.
SKIN: Flush
with water. Give
immediate medical
attention.
EYES: Flush
with water. Give
immediate medical
attention.

FLAMMABLE

Magnesium
Reagent Grade, Turnings
Mg
CAS # 7439-95-4

F.W. 24.31
UN 1869

500 g # 579204

freyscientific

FREY SCIENTIFIC
100 PARAGON PARK
MANSFIELD, OHIO
1-800-225-3729

F.W. 256.41
Purity, %
0.0002
5.8
0.001
0.005
<0.003
<0.005
0.01
0.001

MAGNESIUM NITRATE

CRYSTAL # 75450
REAGENT GRADE 500 g
STRONG OXIDIZER!

FOR LAB USE ONLY. NOT FOR DRUG, FOOD OR HOUSEHOLD USE.

freyscientific

08/15/2007



85092-03 1 L

Phenolphthalein
Phenoptaleine
1% Alcohol Solution
UN 1219

Contains:
Phenolphthalein, 0.5g
Isopropyl alcohol, 100ml
Water, CAS No. 7732-18-5

Flashpoint TCC 21.0°C

Health/Santa
Flammable/Li
Reactivity/Reactive

Science Kit
& Boreal Laboratories

San Bruno, CA San Bruno, CA St. Catharines, Ontario

Potassium Nitrate

CAT. NO. C4486T 500 g

KNO₃
F.W. 101.11 CAS# 7757-79-1
Laboratory Grade Crystal

Lot No. 732502
For Laboratory Use Only!

Strong oxidizer! Irritant!

SARGENT-WELCH
V.W. FINE CHEMICALS

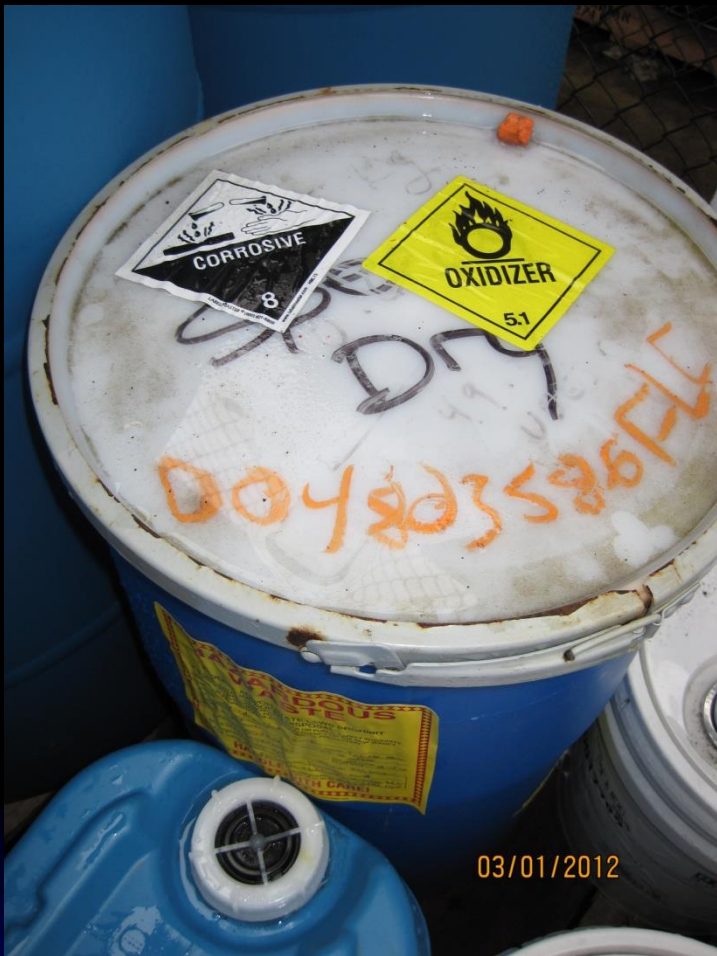
HEALTH HAZARD

May be harmful if swallowed.
Dust may cause irritation to the
eyes, skin and respiratory tract.
Exercise due caution.

IRON POWDER
IRON POWDER
MDS ON FILE

10/18/2007





HAZARDOUS WASTE

FEDERAL AND/OR STATE LAWS PROHIBIT IMPROPER DISPOSAL.

IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, THE U.S. ENVIRONMENTAL PROTECTION AGENCY OR THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION.

GENERATOR INFORMATION:

NAME _____

ADDRESS Nerry Lane

CITY _____ PHONE _____

MANIFEST TRACKING NO. _____ STATE NY ZIP _____

EPA ID NO. _____ ACCUMULATION START DATE 2-13-12

EPA WASTE NO. D01, D02

UN 3149, Waste Hydrogen Peroxide and peroxyacetic acid mixtures, stabilized with acids, water not more than 5 percent peroxyacetic acid, 5.1 (S) PG-II

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

HANDLE WITH CARE!

STYLE CFWMNJ87

LABELMASTER® (800) 621-5808 www.labelmaster.com

03/01/2012



WORKPLACE ACCUMULATION CONTAINER

HAZARDOUS WASTE
FEDERAL LAW PROHIBITS
IMPROPER DISPOSAL.
IF FOUND, CONTACT THE NEAREST POLICE OR
PUBLIC SAFETY AUTHORITY OR THE U.S.
ENVIRONMENTAL PROTECTION AGENCY.
HANDLE WITH CARE!

PROPER D.O.T. SHIPPING NAME:
WASTE FLAMMABLE LIQUID N.O.S. (ACETONE, ETHYL ACETATE,
HEPTANE, HEXANE, ETHANOL, METHANOL, METHYL ETHYL KEYTONE.)
UN or NA No. 1993

GENERATOR INFORMATION:
Name: [REDACTED]
Facility: [REDACTED] 3
Phone: [REDACTED]
Address: MERRY LANE
City: [REDACTED]
State: NJ Zip: 07936
EPA / Manifest ID No. / Document No. [REDACTED]
State Manifest Document No.
EPA Waste No. D001, F003

Workplace Accumulation Start Date: 2/1/12
Waste Accumulation Area: [REDACTED]

03/01/2012



7B023

DICHLOROMETHANE
CLASS 6.1
UN 1593

DICHLOROMETHANE
CLASS 6.1
UN 1593

HAZARDOUS WASTE









CAUTION
STANDARD RACK
1.5 TIMES SAFE
CAPACITY
RETRIEVE ONLY

514-005-22 60

104-804-10 104

514-007-21 21
514-007-11 11

universal
waste

Commonly Overlooked Central Accumulation Area requirements:

- 40 CFR 262.17(a)(1)(vi) – Special requirements for ignitable or reactive waste(s). (LQG)

Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line unless a written approval is obtained from the authority having jurisdiction over the local fire code allowing hazardous waste accumulation to occur within this restricted area. A record of the written approval must be maintained as long as ignitable or reactive hazardous waste is accumulated in this area.



FLAMMABLE
KEEP FIRE AWAY

DANGER
HAZARDOUS
CHEMICALS

EAGLE
FENCE & SUPPLY

ALL ELECTRONIC
EQUIPMENT MUST
BE PLACED IN SHED
←

UNDER
WORKING



Commonly Overlooked Central Accumulation Area requirements:

40 CFR 262.16(b)(2)(v) – Special requirements for incompatible waste(s).
(SQG)

A container accumulating hazardous waste that is incompatible with any waste or other materials accumulated or stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

Are we done yet?!?! Nope!

USEPA Generator Improvement Rule of
5/31/17 added additional Generator
container management requirements!

Here's what else is new to RCRA...

Additional LQG requirement:

As per 40 CFR 262.17(f)1-2, an LQG must notify the Department that they are receiving hazardous waste from VSQG (from same company) including description & quantity of waste received and date waste received at.

As per 40 CFR 262.17(f)3 – the LQG must mark or label hazardous waste container/unit with the date received from the VSQG.

Episodic Generation for VSQG of hazardous waste:

- VSQG must mark or label containers with the words “Episodic Hazardous Waste” AND indication of the hazards of the contents, as per 40 CFR 262.232(a)4(i)(A-B)
- VSQG must mark or label containers with the with the episodic event start date, clearly visible for inspection on each container, as per 40 CFR 262.232(a)4(i)(C)
- Ensuring containers are in good condition, compatible with hazardous waste being accumulated within, and kept closed as per 40 CFR 262.232(a)4(iii)(A)

Episodic Generation for SQG of hazardous waste:

- SQG must mark or label containers with the words “Episodic Hazardous Waste” AND indication of the hazards of the contents, as per 40 CFR 262.232(b)4(i)(A-B)
- SQG must mark or label containers with the with the episodic event start date, clearly visible for inspection on each container, as per 40 CFR 262.232(b)4(i)(C)
- Ensuring containers are in good condition, compatible with hazardous waste being accumulated within, and kept closed as per 40 CFR 262.232(b)4(iii)(A)

Episodic Generation for VSQG and SQG of hazardous waste:

- A VSQG has up to sixty (60) calendar days from the start of the episodic event to manifest and send its hazardous waste generated from episodic event to a TSDF as per 40 CFR 262.232(a)6.
- A SQG must treat hazardous waste generated from episodic event onsite or manifest and ship such hazardous waste offsite to a within sixty (60) calendar days from the start of the episodic event as per 40 CFR 262.232(b)5.

Un-Common Storage Area Requirements:

Well, what if I store my hazardous waste in tanks???

Does anyone store hazardous waste in tanks???

Yes, but vast majority of generator's store their hazardous waste in various sized containers...

The requirements for owners and operators (generators) that use tank systems can be found in Subpart J – Tank Systems located at 40 CFR 265.

40 CFR 265.190 – Applicability

40 CFR 265.191 – Assessment of existing tank system integrity

40 CFR 265.192 – Design & Installation of new tank systems or components

40 CFR 265.193 – Containment & Detection of release

40 CFR 265.194 – General operating requirements

40 CFR 265.195 – Inspections

40 CFR 265.198 – Special requirements for ignitable or reactive wastes

40 CFR 265.199 – Special requirements for incompatible wastes

Subpart BB requirements – air emission standards for tanks that store volatile organics (500 ppm or greater in the waste stream)

Additional SQG Tank Requirements - Accumulation

- Treatment or accumulation of hazardous waste in tanks must comply with 40 CFR 265.17(b) of this chapter. **40 CFR 262.16(b)3(ii)A**
- Hazardous Wastes or treatment reagents must not be placed in a tank if they could cause the tank or its inner liner to rupture, leak, corrode, or otherwise fail. **40 CFR 262.16(b)3(ii)B**
- Uncovered tanks must be operated to ensure at least 60 centimeters (2 feet) of freeboard, or with a containment structure, drainage control system, or a diversion structure with a capacity that equals or exceeds the volume of the top 60 centimeters (2 feet) of the tank. **40 CFR 262.16(b)3(ii)C**
- Where hazardous waste is continuously fed into a tank, the tank must be equipped with a means to stop this inflow. **40 CFR 262.16(b)3(ii)D**

Additional SQG Tank Requirements – Inspection

- Inspect discharge control equipment on tanks holding hazardous waste at least once each operating day, to ensure that it is in good working order. **40 CFR 262.16(b)3(iii)A**
- Inspect data gathered from hazardous waste monitoring equipment (e.g., pressure and temperature gauges) at least once each operating day to ensure that the tank is being operated according to its design. **40 CFR 262.16(b)3(iii)B**
- Inspect level of waste in the tank at least once each operating day. **40 CFR 262.16(b)3(iii)C**
- Inspect construction materials of the tank at least weekly to detect corrosion or leaking of fixtures or seams. **40 CFR 262.16(b)3(iii)D**
- Inspect construction materials of, and the area immediately surrounding, discharge confinement structures at least weekly to detect erosion or obvious signs of leakage. Generator must remedy any deterioration or malfunction of equipment or structures to ensure that the problem does not lead to an environmental or human health hazard. **40 CFR 262.16(b)3(iii)E**

Additional SQG Tank Requirements – Inspection

- A SQG accumulating hazardous waste in tanks or tank system(s) that have full secondary containment and that either use leak detection equipment to alert personnel to leaks, or implement established workplace practices to ensure leaks are promptly identified, to inspect the areas identified in paragraphs (b)(3)(iii)(A) through (E) at least weekly and document the alternate inspection in the operating record, including a description of the established practices at the generator. **40 CFR 262.16(b)3(iv)**

Additional SQG Tank Requirements

- While being accumulated on-site, each hazardous waste storage tank...must be clearly marked, and/or labeled with the words “**Hazardous Waste**” and an indication of the hazards of the contents.

● + 40 CFR 262.16(b)6(ii)(A-B)

Look familiar?!?

Additional LQG Tank Requirements

- While being accumulated on-site, each hazardous waste storage tank...must be clearly marked, and/or labeled with the words “**Hazardous Waste**” and an indication of the hazards of the contents.

+ 40 CFR 262.17(a)5(ii)(A)-(B)

Additional LQG Tank Requirements

Generator shall maintain required records showing hazardous waste is accumulated for no more than 90-days in a tank and keep records onsite and readily available for inspection.

+ 40 CFR 262.17(a)5(ii)(C)-(D)











PRESSURE RELIEF DEVICE
THIS MAY BE INDICATED BY
A LEAKING SOUND.
VERIFYING LEAKING OR SOUNDS
OF EXCESS PRESSURE.

67-64-1

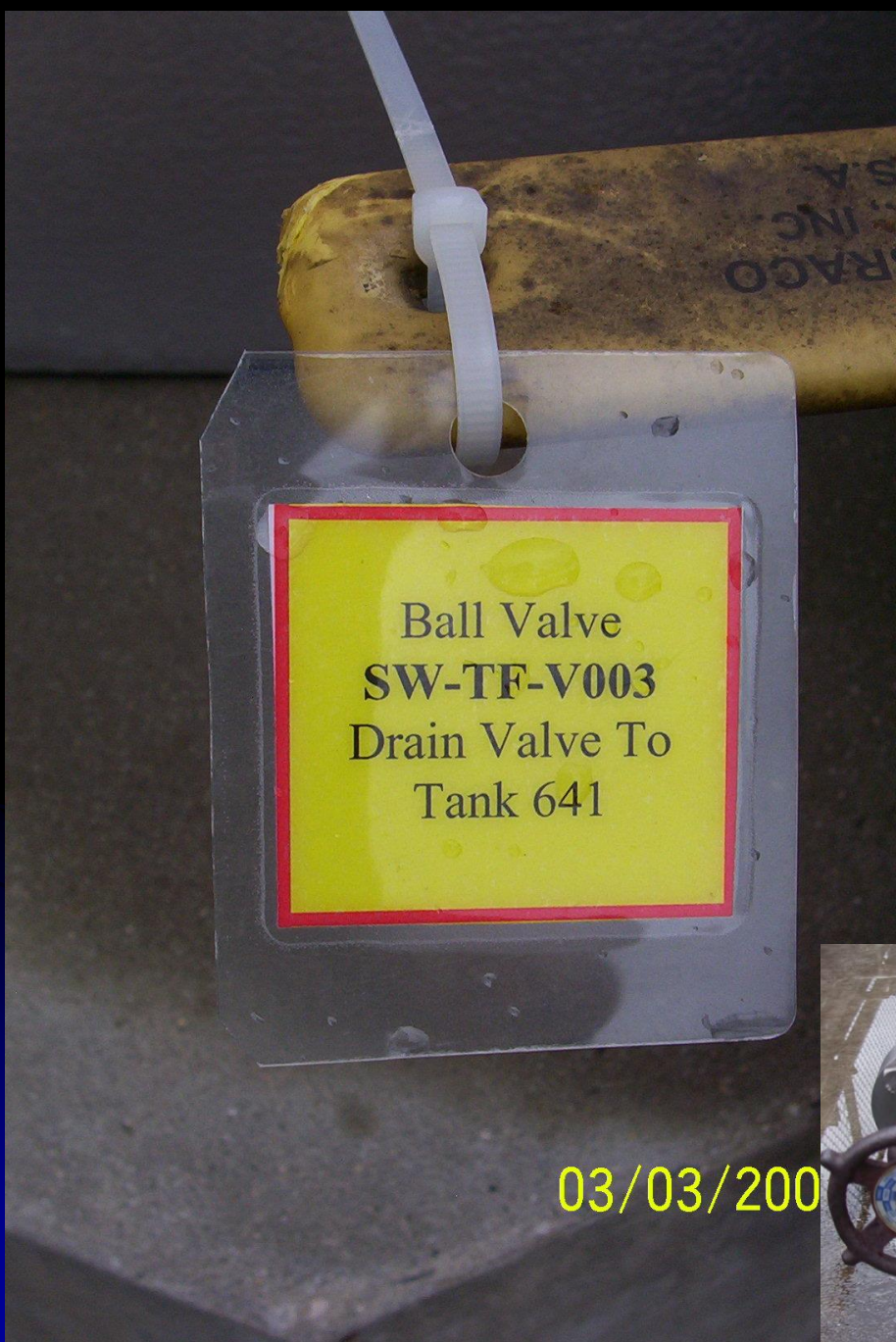
FRESH ACETONE



RECOVERED ETHYL ACETATE
CAS # 141-78-1
RECOVERED HEPTANE
CAS # 142-82-5

2 HEALTH
3 FLAMMABILITY
0 REACTIVITY

WARNING
HAZARDOUS
WASTE



WASTE ACETONE

WA
003

WA
002

07/18/2011



IMPORTANT

- To meet the hazardous waste storage container (and tank requirements if applicable) in 40 CFR, and the New Jersey Administrative Codes (N.J.A.C.);
- Even more important to ensure that all applicable personnel receive routine training in all aspects of container (and tank) management, from container labeling & marking requirements, to the proper use, and implementation of the emergency communications plan/devices onsite to ensure that...

This won't
happen to one
of your
hazardous
waste storage
containers at
your facility!



