

Management of Hazardous Waste

- Three Topics
 - Waste Determination
 - Pre-Transportation Requirements
 - Use and Management of Containers
- Format
 - Applicable Regulations
 - EPA Guidance
 - Practical Implementation to Comply with Regulations
 - Photos Showing Compliance Problems

Michael K. Prescott, PE

- Contractor Inspector with Over 30 Years Experience
- Conducted Over 260 Compliance Inspections of Federal Facilities
- My Experience with Inspections of Federal Facilities Has Shown a High RCRA Noncompliance Rate
- Majority of Noncompliance can be Readily Avoided by Being Familiar with the Regulations and Guidance

Waste Determination

- Essential procedure for ALL generators, but often inadequate
- Inadequate waste determinations lead to serious violations
- Applicable key regulations:
 - 40 CFR Section 262.11 – Specific generator requirement
 - 40 CFR Part 261 – Identification and Listing of Hazardous Waste
 - 40 CFR Part 260 Appendix I – Flowchart figures for waste determination process

EPA Guidance - FedCenter.gov

- Hazardous Waste Storage Guidance
(<http://www.fedcenter.gov/assistance/facilitytour/hazardous/>)
- Hazardous Waste Identification Flowchart and Clarifications
- Definition of Solid Waste Decision Tool V.2
- Guidance on Universal Wastes

Practical Implementation

Steps for Waste Determination

1. Identify ALL your wastes
2. Determine if each waste is hazardous
3. Use MSDSs, process information, other generator knowledge
4. Conduct appropriate analyses of sample(s) of waste

Practical Implementation

5. Prepare documentation of your waste determination
 - How determination made
 - Backup data
 - Waste profile notebooks are a good practice
6. Conduct waste determination for every new waste
7. Repeat waste determination whenever process generating waste changes
8. Should update waste determination periodically

Practical Implementation – Typical Problems

The most common and serious problem with waste determinations and the resulting potential violations:

- Identifying a hazardous waste as non-hazardous waste
- Leads to disposing of waste as non-hazardous waste
- Also managing waste as non-hazardous waste

Following are some photos that show problems related to waste determinations.



06/23/2009 11:45 AM

8 MAR 10
AEROSOL CANS
NON HAZARDOUS
WASTE

04/14/2010 08:09 AM



02/10/2010 01:54 PM



DEFT
 WARNING: IRRITANT
 VAPOR MAY BE HARMFUL. BREATHING OF VAPOR MAY CAUSE
 IRRITATION. CAUSES EYE IRRITATION.
 Contains Ketones and Ester Solvents
 Keep away from heat, sparks and fire. Do not use in confined
 spaces. Avoid prolonged or repeated exposure. Avoid contact with
 eyes. Avoid contact with skin. Avoid contact with clothing.
 Keep container tight and upright to prevent leakage.
 Do not use in case of spillage. Clean up immediately in
 accordance with local applicable regulations.
 PPE: Full body protection. Wash with plenty of water.
 In case of skin contact, wash with plenty of water for 15 minutes.
 In case of eye contact, immediately flush with plenty of water for 15 minutes.
 In case of inhalation, move to fresh air. If symptoms persist, call a physician.
 If exposed to high concentrations of vapor, call a physician immediately.
 Do not inhale vapors.
 IMPORTANT! The contents of this package must be separated into
 other components before the product can be used. Before opening
 the package, read all warnings, labels and instructions.
 (Netherlands), follow all precautions.
 STORAGE INSTRUCTIONS: Store indoors at 70°-80°F.
 (21°-27°C)

DEFT
 CHEMICAL COATINGS
 DEFT
 CHEMICAL COATINGS
 DEFT
 CHEMICAL COATINGS

WCAK278199H500
 NON-REGULATED WASTE
 COMBUSTIBLE LIQUIDS
 DPW ENVIRONMENTAL 50
 3499 PHE 356-2023
 SALZMAN
 4513

4513
 ASD 18 July
 356-2023
 SALZMAN
 4513

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Pre-Transport Requirements - 40 CFR 262 Subpart C

- 262.30 Packaging, 262. 31 Labeling, 262. 32 Marking, and 262.33 Placarding essentially require compliance with specific Dept. of Transportation regulations
- 262. 34 Accumulation Time – Key Subsections
 - LQG requirements (a)
 - Satellite requirements (c)
 - SQG requirements (d)

Key Requirements for LQGs, SQGs, and CESQGs - See Generator Summary Chart

(<http://www.epa.gov/epawaste/hazard/generation/summary.htm>)

LQGs: >2200 lbs./mo. hazardous waste generated
<90 days accumulation time

SQGs: >220 lbs./mo. but <2200 lbs./mo. hazardous
waste generated

<2.2 lbs./mo. of acute hazardous waste generated

<13,200 storage of hazardous waste at any time

<180 days accumulation time (or 270 days for
>200 miles from TSD)

CESQGs: <220 lbs./mo. hazardous waste generated

Key Requirements for LQGs and SQGs By Reference to Part 265

LQGs:

262.34(a)(1) referencing Subparts I (Container Management), J (Tank Management), and AA, BB, and CC (Air Emissions Standards)

262.34(a)(4) referencing Subparts C (Preparedness and Prevention) and D (Contingency Planning), and 265.16 (Training)

Satellite Accumulation:

262.34(c)(1)(ii) referencing key sections of Subpart I (Container Management).

Key Requirements for LQGs and SQGs By Reference to Part 265

SQGs:

262.34(d)(2) referencing certain sections of Subpart I (Container Management)

262.34(d)(3) referencing Subpart J (Tank Management)

262.34(d)(4) referencing Subpart C (Preparedness and Prevention)

No references to Part 265 for Training and Contingency Planning because specific less stringent requirements in (d)(5).

EPA GUIDANCE

Office of Solid Waste and Emergency Response
Website

(<http://www.epa.gov/epawaste/hazard/index.htm>)

Guidance Manual: “Hazardous Waste Generator
Regulations EPA530-R-09-10 May 2009”

Also FedCenter.Gov for summaries and links

Practical Implementation – Key Issues

Generator Classification

- Monthly generation rate determines generator classification and applicable regulations.
- If you want to comply with less stringent regulations (e.g., SQG instead of LQG), you need to verify waste generation rate each month.
- If monthly generation rate could exceed CESQG or SQG thresholds, first try to reduce the one or two fluctuating waste streams. If not possible, follow the requirements for those months that exceed threshold or comply all the time.

Practical Implementation – Key Issues

90/180-day Central Accumulation Areas (CAAs) vs Satellite Accumulation Areas (SAAs)

- SAA regulations specify containers must be:
 - At or near any point of generation
 - Under the control of the generator of the process
 - Under the 55-gallon threshold
- Many interpretations; contact your state or EPA regulatory authority.
- Note SAA is not always an option; sometimes must manage as a CAA.

Practical Implementation – Key Issues

Multiple containers in a SAA vs multiple SAAs

- How does one differentiate between these situations?
- Q&A from guidance on EPA website on next slide.
- I look at if the wastes are from the same process or different processes.
- I also look at the proximity of containers from different processes.
- Better to be conservative and use smaller containers for different wastes to stay below 55-gallon threshold.

Question: Can a facility have multiple SAAs?

Answer: Yes. The regulations do not limit the total number of SAAs at a generator's facility. Likewise, the regulations do not limit the total amount of hazardous waste that can be accumulated at various SAAs across a facility. The regulations limit only the volume of hazardous waste that can be accumulated at a single SAA to 55 gallons (or 1 quart of acute hazardous waste). It's not possible in a memo for the Agency to delineate for all situations what constitutes a single SAA versus what constitutes separate SAAs. For additional guidance about the Agency's intent, refer to the preamble to the final rule for SAAs, which states, "Certainly...a row of full 55 gallon drums spaced 5 feet apart along the factory wall," is not a row of distinct SAAs, but is one SAA.⁹

Practical Implementation – Key Issues

Labeling and accumulation start dates (ASDs) in CAAs

- Must label or mark with words “Hazardous Waste”, but also important to put contents.
- ASD can be the date waste was first added at a CAA; when it was brought to the CAA from a SAA; or when it was first declared a waste.
- Common problems are dates greater than 90 or 180 days, multiple dates, and changed dates on containers.

Practical Implementation – Key Issues

Contingency Plans for LQGs

- Required for each 90-day CAA
- Emergency Coordinator and other emergency contact information must be current
- All potential hazardous waste incidents must be addressed
- Must provide descriptions, capabilities, and locations of current emergency equipment
- Must provide primary and alternate evacuation routes and signals to begin evacuation for all CAAs
- Must make arrangements with state and local authorities and hospitals and document agreements or refusals

Practical Implementation – Key Issues

Contingency planning for SQGs

- Emergency Coordinator on premises or on call
- Post ALL the following information next to telephones near CAAs:
 - Name and phone number of Emergency Coordinator
 - Location of fire extinguishers, spill control material, and fire alarm
 - Telephone number of fire department, unless have direct fire alarm

31

CAUTION
LEAD HAZARD
DO NOT ENTER WORK AREA
UNLESS AUTHORIZED

CAUTION
LEAD HAZARD
DO NOT ENTER WORK AREA
UNLESS AUTHORIZED



06/24/2009 02:09 PM



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DANGER

HEXAVALENT CHROMIUM OR VI
CANCER HAZARD
AUTHORIZED PERSONNEL ONLY
CONTACT THE OPERATOR SUPERVISOR AND/OR
THE SA OF VI PROGRAM MANAGER FOR A COPY OF THE SDS
FOR SPECIFIC HAZARD INFORMATION
PRIOR TO ENTERING THIS AREA

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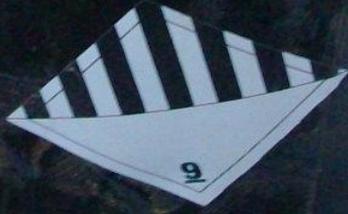


1-800-C

SET UP INSTR
A. STAND FLEX-PAK
OPEN FLEX-PAK UN
INSERT POLY LINER
THERM-W.L. CLOSE POL
FLEX-PAK UN
PREPARED TO DUFFLE

FRAGILE

FR



9

10/06/2008 02:54 PM



 PARAFFIN
WASTE
CONTAINS PARAFFIN
OF ALL GRADES

10/08/2008 03:29 PM



S-374
1 lb.
(453g)
Certified A.C.S.
Sodium
Phosphate
Secondary
Ammonium Phosphate
FISHER SCIENTIFIC

GREASE BLOOD STAIN
SCORE & TYPE
DANGER: VAPOR HARMFUL
POISONOUS
USE AT ROOM TEMPERATURE (15-30°C)
FOR LABORATORY USE

HAZARDOUS WASTE
HANDLE WITH CARE!

09/24/2008 10:59 AM



EM
HEALTH HAZARD
E0190-1
Ethyl Ether
Anhydrous
1 L
GR
EM SCIENTIFIC

PICRIC
ACID
LIQUID

TOXIC
CORROSIVE
SOLUBLE

03/17/2009 10:49 AM

**HAZARDOUS
WASTE**

HANDLE WITH CARE!

ACCUMULATION
START DATE

3/4/08

CONTENTS

water Blast Dust

CARLTON INDUSTRIES INC. 1-800-231-5988 LA GRANGE, TX 76040

10/06/2008 02:53 PM

DRUM #3
EVERYTHING

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EMERGENCY CONTACT LIST

Laboratory Emergency Coordinator
Pedro A. Sarkis 787-729-6967 ext. 3292
Cell phone 787-309-3387

Laboratory Alternate Emergency Coordinator
Rosa M. Santos 787-729-6967 ext. 3298
Cell phone 787-948-8281

Customshouse Security Office – 787-729-6996

Customshouse Safety Officer – 787-729-6673

PR Police Department 787-343-2020	Fire Department 787-343-2330
Emergency Services 9-1-1	Centro Medico Hospital 787-777-3535
Cost Guard 787-729-6770	Junta Calidad Ambiental 787-767-8181 ext 3234
Agencia Estatal para el Manejo de Emergencias Y Administraci3n de Desastres 787-724-0124	AEROMED Ambulance 787-756-3424
Recursos Naturales 787-724-5700	Poison 1-800-222-1222

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Use and Management of Containers – 40 CFR 265 Subpart I

Referenced from generator regulations:

262.34(a)(1)(i) for LQGs and 262.34(d)(2) for SQGs

- 265.171 Condition of Containers – Containers must be in good condition or must be replaced
- 265.172 Compatibility of Waste with Containers - Wastes must be compatible with containers
- 265.173 Management of Containers – Containers must always be closed except when adding or removing wastes
- 265.174 Inspections – Must conduct weekly inspections of areas where containers are stored looking for leaks or deterioration

Use and Management of Containers – 40 CFR 265 Subpart I

- 265.176 Special Requirements for Ignitable or Reactive Waste – Containers with ignitable or reactive wastes must be at least 50 feet from property line
- 265.177 Special Requirements for Incompatible Wastes – Requirements for prevention of mixing and storage of incompatible wastes
- 265.178 Air Emission Standards – Manage containers to comply with air emission standards in Subparts AA, BB, and CC of Part 265; essentially keep containers closed

EPA Guidance

RCRA Online (<http://www.epa.gov/epawaste/inforesources/online/index.htm>)

Guidance Memo: “Guidance On 40 CFR 264.173(a) And 265.173(a): Closed Containers”

Also FedCenter.Gov for summaries and links

Practical Implementation – Key Issues

- Condition of containers: Must not be leaking or severely rusted or bulging
- Closed containers:
 - Keep containers closed whether in CAA or SAA.
 - If use funnels, they must be closed and prevent air emissions (for volatile wastes)
- Weekly inspections:
 - Recommend using a checklist with items to evaluate
 - Note observations
 - Ensure backup inspector for illnesses and vacations

CTX

74
Fast 74
Classic
Adhesive
Adhesivo

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PROPULSION

Parts
WASHER
Sludge

(HAZARDOUS
(HAZWASTE)

HAZARDOUS WASTE

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FLAMMABLE LIQUID

HAZARDOUS WASTE
FEDERAL LAWS PROHIBIT IMPROPER DISPOSAL
IF YOU ARE UNABLE TO HANDLE PROPERLY OR
PUBLIC SAFETY AUTHORITY OR THE
U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERATOR INFORMATION
NAME: NEW YORK AIR NATIONAL GUARD
ADDRESS: 1000 MILTON BLVD
CITY: NEW BRUNSWICK NJ 08901
STATE: NJ COUNTY: MIDDLESEX
DATE: 06/10/08
TIME: 11:04 AM
CONTACT: []
TELEPHONE: []
FAX: []

[Waste Paint Liquids]
301-B

HANDLE WITH CARE!

06/10/2008 11:04 AM

DO NOT REUSE WASTE RAGS
IN WASTE BARREL



07/17/2008 07:51 PM

GER
AREA

Some Potential Solutions

- Ensure all wastes have had waste determinations and update waste determinations at least annually.
- Periodically check hazardous waste storage, accumulation, and generation areas for compliance.
- Provide site-specific training to hazardous waste personnel. (Note HAZWOPER training is usually not enough to comply with RCRA training requirements.)
- When preparing and reviewing Contingency Plans and related requirements, read the regulations and use them as a checklist.