

TML\MSH Microbiology Department Policy & Procedure Manual	Policy # MI\LS\14\v02	Page 1 of 5
Section: Laboratory Safety Manual	Subject Title: Bulk Dispensing of Flammable Liquids - 45 Gallon Drum	
Issued by: LABORATORY MANAGER	Original Date: April 20, 2001	
Approved by: Laboratory Director	Revision Date: October 22, 2003	

Policy:

No person shall dispense, collect or dispose of flammable liquids into or from drums unless they have received specific training on the handling of flammable and combustible liquids and WHMIS. Training shall be conducted annually. All employees required to handle, dispense or dispose of flammable solvents in bulk shall attend training sessions annually and be required to demonstrate their knowledge.

Access to The Hospital's flammable storage room shall be restricted to workers who have received specific training related to the bulk dispensing and disposal of flammable liquids and where such duties are defined within their current job description.

Purpose:

This policy ensures safe handling and dispensing of flammable and combustible liquids.

Responsibility:

Management and personnel

Key Elements:

- Definitions
- Preliminary Dispensing Procedures
- Drum Faucet and Vent Installation
- Drum Handling
- Drum Dispensing

Related Documents:

GENERAL CHEMICAL SAFETY	MI\LS\11\v01
HANDLING CHEMICALS	MI\LS\12\v01

Procedure:

DEFINITIONS

Bonding	Provision of metal to metal contact - usually by wire - between two containers to prevent generation of static electrical sparks
Bung	Threaded hole in top of drum
Spill Tray	A wide mouthed receptacle equipped with a perforated metal flame arrester across the opening to catch drips or spills from faucets or valves on flammable drums
Drum cradle	A steel frame on wheels for storing and moving drums in the horizontal position
Drum chime	Rim of steel drum

DEFINITIONS CONTINUED:

Faucet extension	A flexible metal hose with flame arrester screen which screws into the outlet of a safety faucet
FM	Factory Mutual Research (FM). Independent testing laboratory
Grounding	Provision of metal to “ground” contact - usually by wire - between two containers to prevent generation of static electrical sparks
Non-sparking tools	Tools made from beryllium-copper or aluminum-bronze greatly reduce the possibility of igniting dusts, gases, or flammable vapors. Although these tools may emit some sparks when striking metal, the sparks have a low heat content and are not likely to ignite most flammable liquids
PPE	Personal Protective Equipment
Safety can	Portable device for transferring or storing up to 5 gallons of a flammable liquid. A safety can must: 1. Be leak tight 2. Automatically vent vapor at approximately 5 psig internal pressure to prevent rupture 3. Prevent flame from reaching the flammable liquid contents through the spout 4. Automatically close after filling or pouring
Safety faucet	Faucet for drawing flammable liquids from drums. Must be self-closing with replaceable, drip-proof seals and a built-in flame arrester
Vent cap	Valve designed to equalize drum and atmospheric pressure

Preliminary Dispensing Procedures

1. Inspect room. Check for:
 - Unauthorized access
 - Noticeable odors
 - Proper illumination
 - Evidence of spills
 - Physical damage to facility
 - Tripping hazards
 - Floor drain area is clear of obstructions
2. Inspect all required personal protective equipment:
 - Eye goggles (splash type) and/or Face shield
 - Nitrile gloves
 - Apron
 - Foot protection (if moving drums)
3. Organize work
 - Ensure all safety cans are labeled with the name of the product to be dispensed.
 - Where possible, use only metal safety cans
 - Ensure spill tray is present
 - Know the location of absorbent spill materials
 - Ensure a clear route of escape is maintained at all times

Drum Faucet and Vent Installation

WARNING

- Use only non-sparking tools to install, adjust, or remove any valves, bungs or caps on flammable liquid drums.
- Only FM approved faucets and vents caps may be used.
- Drum faucets and vents must be installed while the drum is in the vertical position.
- Do not tilt drum until both faucet and vent cap and secured in placed

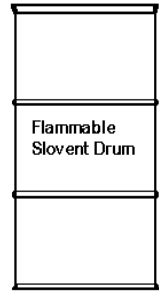


Fig. 1

Steps

1. Eye goggles must be worn
2. Drum must be in vertical position. Fig. 1
3. Attach one end of grounding wire to edge of drum. Other end should be securely attached to room ground bar.
4. Remove steel bung caps. Store in safe place - Do not discard.
5. Apply Teflon tape onto threads of faucet and vent cap.
6. Using non-sparking tools, screw faucet into bung cap hole tightly. When drum is placed horizontal in cradle, faucet must face downward (toward immediate edge of drum). (Fig 2 & 3)
7. Using non-sparking tools, screw vent cap into bung hole. When drum is placed horizontal in cradle, arrow on vent cap must be pointing up (toward immediate edge of drum). (Fig 2 & 3)
8. Remove grounding wire.

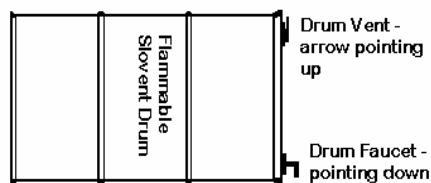


Fig. 2

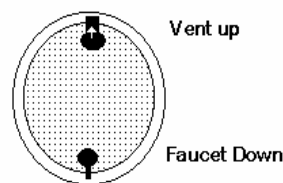


Fig. 3

Drum Handling

1. Foot protection must be worn
2. Ensure faucets, vent caps, or bung caps are secured in place on the drum.
3. Position drum cradle next to drum.
4. Engage the hook on the handle of drum cradle onto the drum chime.
5. Pull drum cradle handle down, rotating cradle on curved bottom until cradle wheels are flat on floor.

6. Inspect faucet and vent for leaks. If a leak is detected, return drum to vertical position, attach ground lead and tighten vent or faucet. If necessary, unscrew faucet or vent completed, re-apply Teflon tape to device, then re-install. Repeat step 5 after devices are securely attached. If no leaks are detected, proceed to step 7. If leak is still present, repeat step 6.
7. Wheel drum into desired position.
8. Clamp ground lead to drum chime.

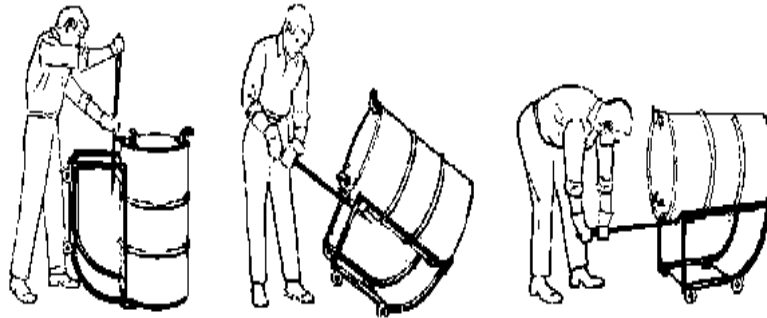


Fig. 4

Drum Dispensing

WARNING

- Use only non-sparking tools to install, adjust, or remove any valves, bungs or caps on flammable liquid drums.
- Always ground and bond

1. Drum Pressure relief

- Ensure drums being dispensed from have a drum vent correctly installed (drum vent should be screwed securely into bung with valve pointing up when drum is horizontal in drum cradle. (see Fig. 2 & 3)

2. Static Discharge Prevention

- Ensure drums are properly grounded (see Fig 5). Grounding wire must be securely attached to drum at one end and the other attached to the wall mounted metal bus strip. Verify screw clamps are tight before proceeding. Determine whether a faucet extension is attached to drum faucet.

If a drum faucet extension is in place, follow steps b, c, & d

- Ensure bonding wire is securely attached to drum at one end. Attach free end to the safety can being dispensed into.
- Place safety can on spill tray on floor.
- Open safety can lid. Guide drum faucet extension into throat of safety can. Release safety can lid trigger and allow lid to close on faucet extension.

TML\MSH Microbiology Department Policy & Procedure Manual	Policy # MI\LS\14\v02	Page 5 of 5
Laboratory Safety Manual		

If a funnel is to be used, follow steps e, f, & g

- Ensure bonding wire is securely attached to drum at one end. Attach free end to the Funnel. Only metal funnels shall be used.
- Place safety can on spill tray on floor.
- Open safety can lid. Guide funnel end into throat of safety can. Release safety can lid trigger and allow lid to close on funnel.

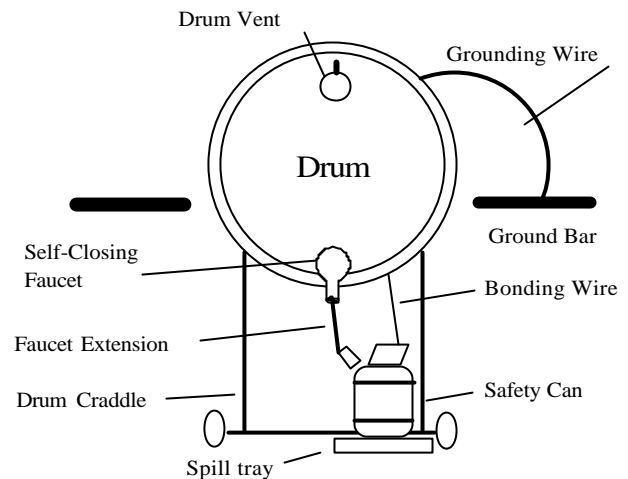


Fig. 5

3. Dispensing

- Ensure spill tray is under safety can
- Position body and head at arms length from the faucet. Hold self-closing faucet on drum open to fill safety can.
- Fill safety can up to fill level mark or up to the seam that joins the top of the can to the body of the can. Release valve and remove faucet extension or funnel. Remove bonding wire from safety can and place can on appropriate transportation device.

4. Recording (hospital sites)

Fill out dispensing log out sheet with the following information:

- Your name
- Name of your department or department in which dispensed material will be used
- Time and date of dispensing
- Amount dispensed in liters.

5. Equipment list

- Safety Cans: Available from Lab Safety Supply, 1 gal. to 5 gal. Sizes
- Spill Tray: Available from Lab Safety Supply, 9C-7606
- Bonding and Grounding wires: Available from Lab Safety Supply, various lengths
- Drum Vent: Justrite, Available from Seton (#08300) brass
- Drum Faucet: Available from Seton, Justrite, (#08910) brass, self closing, adjustable
- Drum Faucet Extension 8: Available from, Justrite, (#08930) brass, flexible
- Non-Sparking Tools: Available from Seton