



Keep Beryllium on the Plant Site

May 2016

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Keeping beryllium on the plant site is the third line of defense in controlling worker exposure as well as exposure to others. When beryllium-containing particles leave the plant site on people and things such as personal items, clothing, laundry, tools, products or equipment, potential exposures to others can result.

Keep Beryllium on the Plant Site

Procedures are in place and observed that prevents beryllium particulate from leaving the plant site in an uncontrolled fashion:

- ***Clothing and shoes, incidental contamination:*** wear and remove over garments, wash hands.
- ***Skin and non-incident contamination:*** Employees, Contractors and visitors that have the potential to become contaminated with Be containing material will change to company supplied clothes before entering work areas, remove work clothes and shower before leaving.

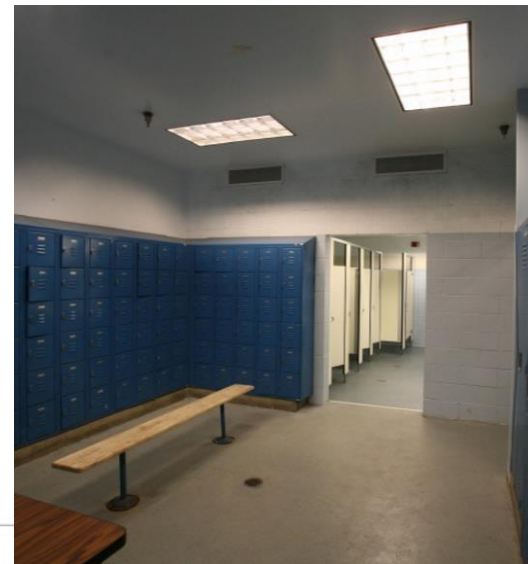
Clean Side Lockers



Company Uniform



Dirty Side Boot Lockers



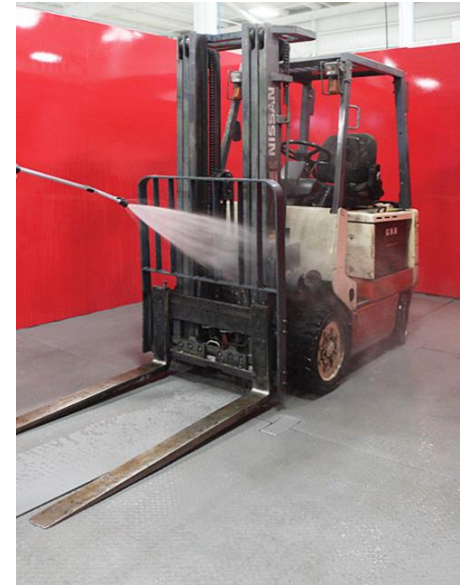
Showers



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Procedures are in place and observed that prevents beryllium particulate from leaving the plant site in an uncontrolled fashion:

Equipment, including vehicles: Equipment will be covered and sealed, or surface soluble salt or particulate contamination will be removed.



Keep Beryllium on the Plant Site

Here is what you should know:

- Beryllium being transported off plant site on people and things can potentially result in exposure to friends and family, the community, service providers, material transporters and downstream processors.

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Here is what you should know:

- Exposures to airborne beryllium resulting from beryllium-containing particles leaving the plant site can result in chronic beryllium disease.

Keep Beryllium on the Plant Site

Here is what you should know:

- Beryllium should not leave the site uncontrolled via:
 - People
 - Personal items
 - Work clothing/coats/shoes/hats/gloves/PPE
 - Laundering work clothing has the potential to expose workers
 - Products, by products
 - Tools/tool boxes/test equipment
 - Equipment
 - Vehicles (company owned/contractor/shipping)
 - Visitors
 - Contractors and service providers (vending machines)
 - Solid and liquid waste streams (rags, scrap, PPE, etc.)
 - Air emissions/fugitive emissions

Keep Beryllium on the Plant Site

Here is what you should know:

- Personal Items
 - Clothing/coats/shoes/hats/underwear
 - Lunch box/thermos/water bottles
 - Work/computer bags/backpacks
 - Computers/electronic devices
 - Purses/wallets
 - Gym bags
 - Umbrellas
 - Vehicles (cars/motorcycles/bikes/snowmobiles)

Keep Beryllium on the Plant Site

Here is what you should do:

- Written procedures and work instructions are in place and observed that prevent beryllium particulate from leaving the plant site in an uncontrolled fashion:
- Develop and implement engineering and work practice controls to prevent the unintended release of beryllium-containing particles and solutions from the plant.
- Develop written procedures and work instructions to protect workers and minimize the release of beryllium-containing particles during air cleaning system maintenance activities such as drum or filter changes.
- Train workers, contractors, service providers and visitors as needed
- Contain or clean tools, equipment, products and other materials that may have removable beryllium particles or solutions prior to their leaving the plant site.
- Practice good personal hygiene by washing hands, arms and face before eating, drinking, smoking, putting on personal protective equipment, or leaving the work area or the plant site.
- Avoid casual contact

Keep Beryllium on the Plant Site

Here is what you should do:

- Change to company supplied clothes or overgarments before entering beryllium work areas, remove and (if required) shower before leaving site
- Wear gloves to remove soiled PPE, clothing & shoes
- Using separate lockers or a similar method to keep personal clothing separate from potentially dirty work clothing.
- Shower facilities are provided when work practices and/or procedures are ineffective in controlling airborne exposure or visual particulate from deposition on skin, hair, or clothing
 - Showers are taken at the end of the work day, ensuring that the hair is washed



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Here is what you should do:

- Conduct exposure assessments
- Design and implement controls as necessary

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- Laundry will be performed on site or in qualified off site facilities.
- If utilized, inform the commercial laundry in writing of the potential presence of beryllium-containing particles and solutions on the clothing, the exposure risks in handling and cleaning work clothing soiled with beryllium-containing particles and solutions, the Material Safety Data Sheets and the elements of the Beryllium Worker Protection Model.
- Store and transport work clothing, over-garment protection and personal protective equipment that are removed for laundering, cleaning, maintenance, or disposal in sealed, impermeable bags or other closed, impermeable containers.
- Label the bags or containers of work clothing, over-garment protection and personal protective equipment with the following:

WARNING
CLOTHING CONTAMINATED WITH BERYLLIUM
AVOID CREATING DUST
DO NOT REMOVE DUST BY BLOWING OR SHAKING
CAN CAUSE SERIOUS LUNG DISEASE

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Here is what you should do:

- Thoroughly clean equipment prior to sending it off plant site for repair
- Warn persons at companies responsible for the repair of equipment used in an area when beryllium contamination is likely
- Equipment disposition

Torit
Dryflo





Mark marks 003

Keep Beryllium on the Plant Site

Here is what you should do:

- Develop leading and lagging measures to set goals and priorities to keep beryllium-containing particles on the plant site and to ensure that work engineering and work practice controls designed to prevent migration of beryllium-containing particles are, and remain effective.

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Leading measures internal to plant site

- Work practice observations vs. procedures
- Transition area observations (visibly clean/shipshape)
 - Preferably by operations management
 - Provide checklists

Lagging measures external to plant site

- Visual observation
- Surface wipe sampling
- Air sampling

Keep Beryllium on the Plant Site

■ REMEMBER

- Company supplied work clothing and shoes are used to prevent off-site migration and secondary exposures to coworkers, the person's car, home, spouse or children
 - Company supplied work clothing is not PPE!!

■ PROHIBIT REMOVAL of contaminated materials