



# **Keep Beryllium in the Work Area**

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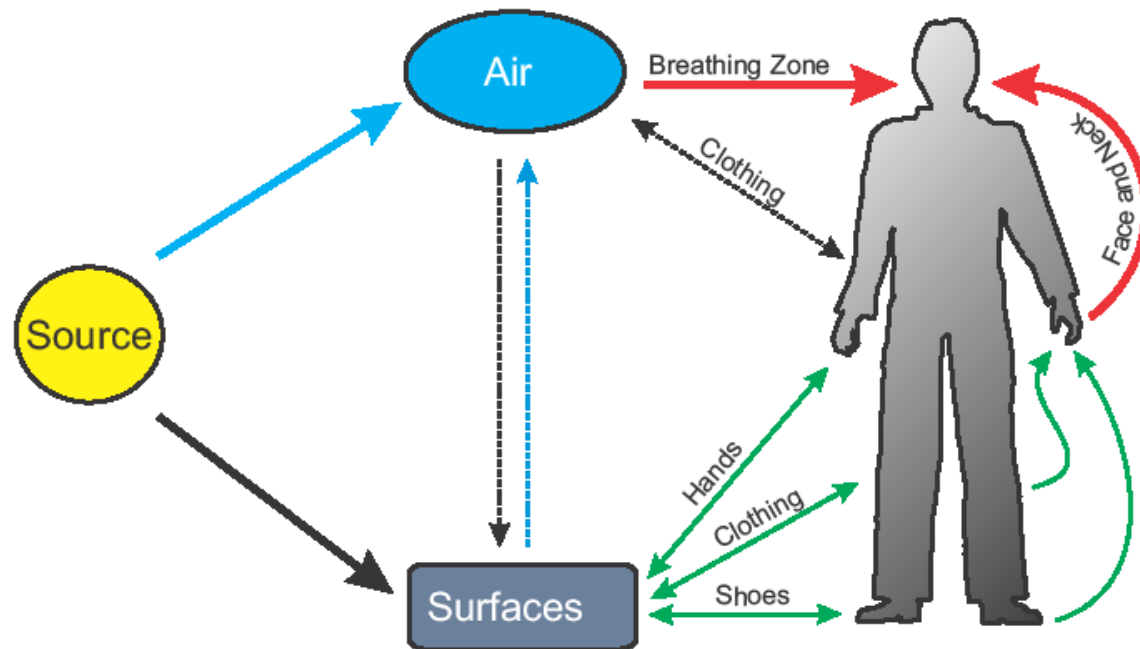
# Keep Beryllium in the Work Area

Keeping beryllium in the work area is the second line of defense in controlling worker exposure as well as exposure to others. The goal is to make sure beryllium-containing particles and solutions do not spread from beryllium work areas to work and support areas where beryllium work is not performed.

# Keep Beryllium in the Work Area

- Beryllium work areas are defined as locations in the work site where beryllium manufacturing processes occur, or where support services are carried out where beryllium presence is permitted such as maintenance, warehouses, recycling operations, environmental control equipment areas (air, water, waste) etc.

# Migration Pathway Model



# Keep Beryllium in the Work Area

## Scope

Procedures, work practices and engineering controls are in place and are observed to control the unintended transport of beryllium solutions or particulate to other beryllium work areas, and to prevent the spread to non-beryllium work areas.

# Keep Beryllium in the Work Area

## Here is what you should know:

- Workers not directly involved with the processing of beryllium and beryllium-containing materials such as managers, secretaries, janitors, maintenance workers, laboratory workers, and industrial hygienists, can potentially develop CBD either as a result of exposures while in beryllium work areas or from exposures resulting from the spread of beryllium-containing particles to other areas of a plant site.
- Beryllium travels on people, equipment, products and tools
  - Shoe/clothing contamination is a significant contributor to migration and secondary exposures

# Keep Beryllium in the Work Area

**Here is what you should know:**

- Visible beryllium-containing particles and solutions in beryllium work areas
  - Can contribute to incidental (and difficult to detect) personal exposure to airborne beryllium,
  - Can result in beryllium being transported to other work areas potentially contributing to the exposures of co-workers,
  - Can result in beryllium being transported off plant site on people and things such as personal items, clothing, laundry, tools, products or equipment potentially resulting in exposure to friends and family, the community, service providers, material transporters and down stream processors.

# Keep Beryllium in the Work Area

## Here is what you should do: THE BASICS

- Keep work areas visibly clean, well lit, orderly and free of clutter.
- Develop and implement engineering and work practice controls to prevent the release/transport of beryllium-containing particles and solutions in/out of the work area.
- People, equipment, tools and products are visibly clean prior to leaving production area



# Keep Beryllium in the Work Area

**Here is what you should do:**

- Assess all jobs and tasks to identify migration pathways
- Consider the traffic patterns of the employees who work in an area where these precautions are necessary.
- Written work practice controls and procedures to prevent the release of beryllium-containing particles or solutions out of the work area.
- Train workers and area personnel on work practice controls and procedures

# Keep Beryllium in the Work Area

**Here is what you should do:**

- Implement a work practice observation program to measure compliance with migration control expectations.
- Evaluate the need for migration pathway engineering controls
- Require employees to report any incident of beryllium particles or chips being inadvertently carried out of the work area. Investigate and take corrective action as needed.

# Keep Beryllium in the Work Area

**Here is what you should do:**

- Define entry/exit procedures
- Establish beryllium work areas that are demarcated from the rest of the workplace in a manner that adequately establishes and alerts employees of the boundaries of the beryllium work area (signage/structure).
- Limit access to the beryllium work areas to persons authorized by the employer and required by work duties to be present in the beryllium work area.
- Remove over-garment protection and personal protective equipment before leaving the beryllium work area.

# Keep Beryllium in the Work Area

## Here is what you should do:

- Contaminated tools, materials and equipment should be cleaned or contained before leaving the work area.
- Contaminated work shoes should be cleaned, covered-up with booties or remain in the work area
- Using High Efficiency Particulate Air (HEPA) vacuums or wet methods as appropriate to clean work clothing, process equipment or materials that are not visibly clean before they leave the work area
  - Vacuum maintenance
- Prohibit entry of beryllium materials into non-beryllium work areas.
- Prohibit entry of potentially contaminated people, materials or equipment into non-beryllium work areas.

# Keep Beryllium in the Work Area

Examples of engineering controls include:

- Air flow control

- Room positive/negative pressure (+press. gauges)
- Room air changes
- Local exhaust ventilation effects
- Make-up air balance
- HVAC impacts/return air/service area
- Filtration (e.g., HEPA) of in-coming air
- Enter/exit vestibules (double doors)
- Seal structural openings (ceiling tiles)

# Keep Beryllium in the Work Area

Examples of engineering controls include:

- Contaminated fluid control
  - Filtration/ventilate tanks
- Tacky mats, shoe cleaners
- Hand wash/wipe facilities
- Glove/PPE/RP storage
- Waste containment/disposal
- air showers
- Eliminate compressed air hoses

# Keep Beryllium in the Work Area

- Develop leading and lagging measures to set goals and priorities to keep beryllium-containing particles and solutions in the work area and to ensure that work practices and procedures designed to prevent migration of beryllium-containing particles are, and remain effective.

# Keep Beryllium in the Work Area

Leading measures internal to Be work area

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

Lagging measures external to Be work area

- Surface wipe sampling
- Settled dust measures
- Air sampling
- Visual observation



# Transition Area



Glove/Booties Disposal

Clean Gloves

Clean Booties

Air Shower

Benches

Tack Mat

Pass Through

Intercom



**Pass Through**





## Rejuvenating Tack Mat; design for 3 foot falls/foot



# ITEC Food Technology



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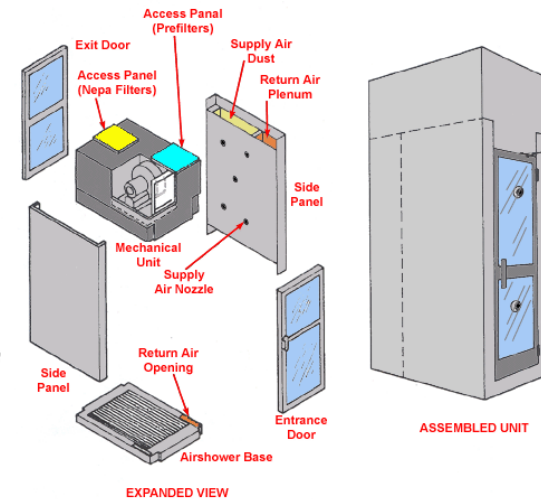


## Diversified Industrial Equipment Rapid Access Doors





# Pictures of Migration Controls







STOP  
PLEASE PUT USED  
RESPIRATOR CLEANING WIPES  
INTO THE  
GLOVE QUITE



Lens Cleaners  
Plugs



FOUR





