

## Appendix A Mosaic Phosphate Operations Line Breaking and Equipment Opening PPE Matrix

The following table outlines the minimum personal protective equipment (PPE) requirements for line or equipment opening in Phosphate Operations.  
The PPE specified will be in addition to hearing protection, hard hat, safety glasses and safety shoes.

		Chemical/Material													
		Phos Acid	Sulfuric Acid	Sulfuric Acid - HRS Systems	Ammonia (Liquid or Gas)	Caustic Soda/ Limestone/ Lime Slurry	FSA	Sulfur (Molten)	Scrub Water (5% Sulfuric)	Steam/ Condensate	AAN or UAN Solution	Reactor Slurry or Other Materials above 140 F	Pond Water (less than 140 degrees)	Petroleum Products/ Amines/Reagents/ Defoamers	Ammoniated Pond Water
Method of Line or Equipment Securing	Hot Tap or Work on Pressurized System	Manager and Safety Approval Needed	Manager and Safety Approval Needed	Manager and Safety Approval Needed	Manager and Safety Approval Needed	Manager and Safety Approval Needed	Manager and Safety Approval Needed	Manager and Safety Approval Needed	Manager and Safety Approval Needed	Manager and Safety Approval Needed	Manager and Safety Approval Needed	Manager and Safety Approval Needed	Manager and Safety Approval Needed	Manager and Safety Approval Needed	Manager and Safety Approval Needed
	Single Block Valve	Full acid suit with full shrouded hood, chemical gloves and boots	Full acid suit with full shrouded hood, chemical gloves and boots	High temp full acid suit (Blue Nomex) with full shrouded hood, chemical gloves and boots	FF Respirator, Full acid suit with hood (Green Tychem), chemical gloves, and boots	Full acid suit with hood, face shield, chemical goggles, and boots	Full acid suit with full shrouded hood, chemical gloves and boots	Welding jacket or heavy long sleeve shirt, protective hood, face shield, leather gloves	Full acid suit with full shrouded hood, chemical gloves and boots	Welding jacket or heavy long sleeve shirt, face shield, goggles, leather gloves	Acid Jacket, face shield, chemical gloves	Full acid suit with hood, face shield, chemical goggles, chemical gloves and boots	Acid Jacket, face shield, chemical gloves	Face shield, chemical gloves	FF Respirator, Full acid suit with hood (Green Tychem), chemical gloves, and boots
	Double Block Valve w/o Bleed or Single Block Valve w/ Locked out Pump	Acid jacket, face shield, chemical goggles, and chemical gloves	Full acid suit with full shrouded hood, chemical gloves and boots	High temp full acid suit (Blue Nomex) with full shrouded hood, chemical gloves and boots	FF Respirator, Full acid suit with hood (Green Tychem), chemical gloves and boots	Full acid suit with hood, face shield, chemical goggles and chemical gloves	Full acid suit with full shrouded hood, chemical gloves and boots	Welding jacket or heavy long sleeve shirt, face shield, leather gloves	Full acid suit with hood, face shield, chemical goggles, and boots	Welding jacket or heavy long sleeve shirt, face shield, goggles, leather gloves	Acid Jacket, face shield, chemical gloves	Acid jacket, face shield, chemical goggles, chemical gloves	Acid Jacket, face shield, chemical gloves	Face shield, chemical gloves	FF Respirator, Full acid suit with hood (Green Tychem), chemical gloves and boots
	Double Block Valve w/ Bleed Valve, Blind, or Knife Gate Valve	Acid jacket, face shield, and chemical gloves	Full acid suit with hood, face shield, chemical goggles, and boots	High temp full acid suit (Blue Nomex), face shield, chemical goggles, chemical gloves and boots	FF Respirator, Acid jacket (Green Tychem), chemical gloves	Acid jacket, face shield, chemical goggles, chemical gloves	Full acid suit with hood, face shield, chemical goggles, chemical gloves and boots	Welding jacket or heavy long sleeve shirt, face shield, leather gloves	Acid jacket, face shield, chemical goggles, and chemical gloves	Welding jacket or heavy long sleeve shirt, face shield, leather gloves	Face shield, chemical gloves	Acid jacket, face shield, chemical gloves	Face shield, chemical gloves	Face shield, chemical gloves	FF Respirator, Acid jacket (Green Tychem), chemical gloves

		Requirements for Downgrading PPE													
		Phos Acid	Sulfuric Acid	Sulfuric Acid - HRS Systems	Ammonia (Liquid or Gas)	Caustic Soda/ Limestone/ Lime Slurry	FSA	Sulfur (Molten)	Scrub Water (5% Sulfuric)	Steam/ Condensate	AAN or UAN Solution	Reactor Slurry or Other Materials above 140 F	Pond Water (less than 140 degrees)	Petroleum Products/ Amines/Reagents/ Defoamers	Ammoniated Pond Water
Requirements for Downgrading PPE		*EO/WG Supervisor approval - Documented on SW Permit	Approval per Final Approval Matrix - Documented on SW Permit	Approval per Final Approval Matrix - Documented on SW Permit	Approval per Final Approval Matrix - Documented on SW Permit	Approval per Final Approval Matrix - Documented on SW Permit	Approval per Final Approval Matrix - Documented on SW Permit	Approval per Final Approval Matrix - Documented on SW Permit	*EO/WG Supervisor approval - Documented on SW Permit	*EO/WG Supervisor approval - Documented on SW Permit	*EO/WG Supervisor approval - Documented on SW Permit	Approval per Final Approval Matrix - Documented on SW Permit	*EO/WG Supervisor approval - Documented on SW Permit	*EO/WG Supervisor approval - Documented on SW Permit	Approval per Final Approval Matrix - Documented on SW Permit

**Notes:**

- Where chemical boots are specified, high top boots are required for protection.
- Any deviation to this matrix or PPE requirements for hazardous materials not listed must be approved by a Manager and a Safety Department Representative.
- Special PPE for emergency response involving the ERT will be determined by the Incident Commander and/or ERT Leader.
- Respiratory Protection and Hearing Protection may also be required depending on the type of work and area where work is performed.
- All systems are considered pressurized and the PPE requirements apply until after the line or equipment has been opened and verified as clear.
- Full Acid Suit is defined as approved acid pants/bib overalls and acid jacket.
- \* Only Mosaic EO/WG Supervisors can approve PPE downgrades.
- \* The PureFlow Powered Air Purifying Respirator with the lockdown visor and Stedair Shroud is an acceptable alternative to a "shrouded" hood (App D PPE Program)
- \* The Blue Nomex High Temperature Acid suit shall be used for all Linebreaks containing materials 160° Celsius (300° F) and above.
- \* Ammonia linebreaks require impermeable chemical PPE (Green Tychem). Blue nomex or red gortex acid suits which are permeable shall NOT be used for ammonia linebreaks.