1. **Purpose** – To define chemical operations in the FDC Fab, and address Personal Protective Equipment

2. **Applicable Regulations**
   b. ANSI Z87.1-2003

3. **Reference Documents**
   a. ASU Prescription Safety Glasses

4. **Equipment Ordering Information**
   a. Safety Glasses – ANSI Z87.1
      i. See Prescription Safety Glasses Document
   b. Faceshields – ANSI Z87.1

5. **Definitions**
   a. Spin/Twist Method
      i. Hold glove open with both hands, “fingers of glove” dangle downwards
      ii. With both hands, flip the “fingers of glove” over the opening of the glove to capture air pressure inside the glove
      iii. Hold the air pressure in the glove, and place next to your ear
      iv. Listen for a leak, or visually see glove shrink to identify leaks
      v. If leak in glove, glove must be discarded

6. **Equipment – Materials**
   a. Personal Protective Equipment (PPE)
      i. Racks for storage of PPE
      ii. Chemical Gloves
      iii. Safety Glasses
      iv. Faceshield
      v. Gowns
      vi. Spats
      vii. Safety Squeeze Bottles (Labeled)
7. Responsibility
   a. Management is responsible for ensuring employees are trained and follow procedures
   b. Employees are responsible for adhering to procedures
   c. Air Products employees must minimally meet the requirements of this specification
   d. Air Products is responsible for delivering chemicals to the chemical storage cabinets
   e. Air Products is responsible for the delivery and hook up of all gas cylinders
   f. Air Products is responsible for filling liquid all nitrogen containers

8. Requirements
   a. All Chemicals MUST be labeled
   b. Acids chemicals stored in Acid Cabinets
   c. Solvent chemicals stored in Solvent Cabinets
   d. Base Chemicals stored in Base Cabinets
   e. Peroxide stored in Oxidizer Cabinets

9. Procedures
   a. Air Products will supply chemicals to chemical cabinets in the Fab
   b. Air Products will do daily rounds to ensure inventory levels
   c. If for some reason you need excess chemical stock or are planning to increase the load of chemicals used, please contact Air Products in advance to ensure inventories

   d. Acid Pour Requirements (gallon containers)
      i. Employee dawns the following personal protective equipment
         1. Safety Glasses
         2. Faceshield
         3. Acid Gloves and employee performs leak check of gloves by the spin/twist method, never blow into a glove to check for leaks
         4. Acid Spats
         5. Acid Gown
      ii. Employee retrieves chemical cart (secondary containment)
      iii. Employee loads chemicals onto chemical cart, no stacking or overloading
      iv. Employee transports cart to area of work
      v. Employee insures work area is neat and orderly, and ensures no other people are working in area
      vi. Employee pours one gallon at a time into bath/container
      vii. Employee places cap on empty bottle and cleans outside of container
      viii. Empty container is placed back on cart
      ix. Cart with empties are brought back to the Acid Cabinet and the empties are placed back in the cabinet for Air Products to pick up
      x. Employee cleans PPE and puts back on the PPE rack
e. Solvent Pour Requirements (gallon containers)
   i. Employee dawns the following personal protective equipment
      1. Safety Glasses
      2. Faceshield
      3. Solvent Gloves and employee performs leak check of gloves by the spin/twist method, never blow into a glove to check for leaks
      4. Solvent Spats
      5. Solvent Gown
   ii. Employee retrieves chemical cart (secondary containment)
   iii. Employee loads chemicals onto chemical cart, no stacking or overloading
   iv. Employee transports chart to area of work
   v. Employee insures work area is neat and orderly, and ensures no other people are working in area
   vi. Employee pours one gallon at a time into bath/container
   vii. Employee places cap on empty bottle and cleans outside of container
   viii. Empty container is placed back on cart
   ix. Cart with empties are brought back to the Solvent Cabinet and the empties are placed back in the cabinet for Air Products to pick up
   x. Employee cleans PPE and puts back on the PPE rack

f. Base Pour Requirements (gallon containers)
   i. Employee dawns the following personal protective equipment
      1. Safety Glasses
      2. Faceshield
      3. Base Gloves and employee performs leak check of gloves by the spin/twist method, never blow into a glove to check for leaks
      4. Base Spats
      5. Base Gowns
   ii. Employee retrieves chemical cart (secondary containment)
   iii. Employee loads chemicals onto chemical cart, no stacking or overloading
   iv. Employee transports chart to area of work
   v. Employee insures work area is neat and orderly, and ensures no other people are working in area
   vi. Employee pours one gallon at a time into bath/container
   vii. Employee places cap on empty bottle and cleans outside of container
   viii. Empty container is placed back on cart
   ix. Cart with empties are brought back to the Base Cabinet and the empties are placed back in the cabinet for Air Products to pick up
   x. Employee cleans PPE and puts back on the PPE rack
g. Liquid Nitrogen Handling (for container size less than 3 gallons)
   i. Employee dawns the following personal protective equipment
      1. Safety Glasses
      2. Faceshield
      3. Cryogenic Gloves
      4. Bunny Suit (no shorts, skirts, etc., pants only)
   ii. Employee retrieves chemical cart (secondary containment)
   iii. Employee loads liquid Nitrogen onto chemical cart, no stacking or overloading
   iv. Employee transports cart to area of work
   v. Employee insures work area is neat and orderly, and ensures no other people are working in area
   vi. Employee pours liquid Nitrogen slowly into container
   vii. Liquid Nitrogen is placed back on cart
   viii. Cart is brought back to the storage location.
   ix. Employee ensures PPE is not damaged and puts back on the PPE rack

h. PPE changeout
   i. If PPE is damaged or defective, dispose of PPE and get new PPE
   ii. Ensure to clean PPE after each use
   iii. PPE is changed out as needed

10. Records
11. Revision Update
   a. Document created by James Kottonias on 4-6-05