



JOB HAZARD ANALYSIS

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DIVISION Borden Chemical		LOCATION or BRANCH Leominster
DEPARTMENT PVC	SECTION	JOB TITLE Reactor Cleaning
SEQUENCE OF BASIC JOB STEPS	POTENTIAL ACCIDENTS OR HAZARDS	RECOMMENDED SAFE JOB PROCEDURE
5. Install Ladder	1. Improperly installed ladder could fall and result in a fatality.	1. Check ladder to be sure it has no broken or cracked rungs or wet or slippery rungs. 2. Be sure it has rubber feet 3. Install ladder by putting it in feet first. 4. Ladder feet must straddle one blade. 5. Be sure feet rest securely on the bottom and do not set over the bottom outlet. 6. Test ladder to be sure it is stable by trying to move it sideways and back and forth
6. Enter Reactor	1. Fall from ladder. 2. Overcome by vapors, etc. 3. Cut from scraper not in pouch. 4. Drop tools or fall on man below.	1. Be sure reactor has been aired out for 20 minutes. 2. Be sure all tools are in the pouch. No pointed ends are to be exposed. 3. Install "Man In Reactor" sign. 4. Be sure someone is present 5. Climb the top of the reactor dome. 6. Facing the front of the reactor, carefully step onto the top rungs of the ladder. 7. Hold on to the manhole and be sure the ladder is stable. 8. Decend the ladder one step at a time. 9. If at any time, vapors are observed, immediately leave th reactor. 10. Go immediately to the bottom of the reactor, check for vapors. Your sense of smell can be deadened if you don't do this first.

PREPARED BY: Russell L. Mercier

DATE: July 30, 1971

REVIEWED BY: John Isler, Jr.

DATE: August 3, 1971



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7. Clean Reactor	1. Chips in eyes. 2. Cuts from scraper. 3. Vapors causing death. 4. Falls from ladder. 5. A.O.L. 6. Improper cleaning of thermowell, bottom outlet or recovery header or manual vent could lead to an explosion, death or plant disaster. 7. Improper cleaning of dome and walls will also lead to quality problems due to fisheyes and poor heat transfer and increased particle size.	11. Check that bottom outlet valve is open. 12. Check that plugs and valves are all closed on manifold valves. 13. Check that manual vent is open. 1. Always wear PVC coated gloves to reduce possibility of A.O.L. 2. Always wear eye protection 3. Whenever vapors are present sound the alarm on alarm cart. 4. Always scrape away from you. Scrapers are razor sharp and can cut severely. 5. Never over reach when on a ladder. Always get down and move the ladder, being sure it is always stable and straddle the blade. 6. Only one man on a ladder at a time. 7. Never stand under the ladder when another man is on it. 8. Reactor bottoms are round and slippery. Always use extreme caution. 9. Be sure all lines are cleaned - manual vent, relief valve, charge nozzles, etc. 10. Pick up all tools and polymer before leaving the reactor. 11. Exit from the reactor in reverse order of entering.
8. Remove all Safety Equipment	1. Loss of equipment and possible charge of reactor with flashlight or other	1. Be sure to remove all cord from the reactor. 2. Remove ladder.

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9. Unlock Reactor Agitator	object inside causing contamination of product. 1. Loss of agitation. 2. Deactivation or activation of wrong agitator could cause an accident to someone else.	3. Reinstall rope fall to normal position. 4. Remove sign. 1. Double check reactor number. 2. Go to MCC room and remove lock from switch. 3. Return to reactor room and remove pin from stop button. 4. Check agitator to be sure it goes on. 5. Notify operator.

BOR 000207

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