
	GILES CHEMICAL ~ PREMIER MAGNESIA		
	Company Procedure		
	Title: Centrifuge Procedure	Number: P12-PR-200-037	
	Owner: Patrick Owen	Revision: 05	
	Effective Date: 09/03/13	Page: 1 of 3	

1.0 Purpose

The purpose of this procedure is to describe how to properly start, operate, shut down, and clean the Centrifuges.

2.0 Scope

This procedure applies to the Centrifuges at the Manufacturing Facility.

3.0 Responsibility

Lead Operator or designee will be responsible for this procedure.

4.0 Safety Considerations

Observe all Manufacturing safety requirements. Safety glasses and steel toed shoes are required at a minimum.

Safety is a condition of employment. Employees are not authorized to work in an unsafe manner and are prohibited from harming the environment of the facility or the community.

5.0 Materials/Equipment

- Hot Hose

6.0 Procedure

A. Starting the Centrifuges:

1. Check to verify the pump from mother liquor pot to mother liquor tank is operable.
2. Open the sample valves and close the feed valves at the sample pot.
3. Start the air hammers (valve on Palletizer)
4. Start the vibrators.
5. Make sure the screw starter is on and the screw direction drum switch is in the middle position ("OFF").
6. Clean and visually inspect centrifuges for sign of wear or damage.
7. On the small centrifuge, start oil pump then centrifuge, and listen for unusual noises that would indicate abnormal operation.
8. For the large centrifuge, press "Auto-start" on the control screen. It will take about 2 minutes for the centrifuge to start and come up to speed. Listen for any strange noises.
9. Ensure that all washout lines are off.
10. Make sure the slide gate switch is "OFF" and the gates are open to the dryers.

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11. Start discharge pumps from the Crystallizers.
12. Open the #2 and #3 Crystallizer feed valves and close their sample valves – putting one Crystallizer into each Dryer.
13. Make a visually check of dryness of salt exiting centrifuge.
14. Ensure hoses are connected to correct centrifuge - #2 to Large Centrifuge, #3 to Small Centrifuge, and #1 to the Splitter.
15. Start #1 into the splitter by opening the feed valve and closing the sample valve at the Sample Pot.
16. At the splitter, open both valves then briefly close one valve and then the other one. This clears any small blockages in the lines.
17. Adjust the bottom valve slightly closed to make the flow meter read ½ of the flow from #1. (example: the meter should read 11 gpm if the discharge from #2 is 22 gpm)
18. Watch the splitter flow meter to ensure the split is stable.
19. You can see the split flows on the Dryer Screen on the Monitoring System.

B. Normal operation:

1. Make rounds according to operator logs and listen for any unusual problems.
2. Record feed solids and any problems every 2 hours.
3. Clean at least once per shift.

C. Shutting Down the Centrifuges:



1. Stop feed from the Crystallizers (refer to Crystallizer procedure).
2. Wash out line from discharge pump to centrifuge with a minimum amount of water.
3. Clean centrifuges (see part D of this procedure).
4. Stop centrifuges.
5. Uncouple Mother Liquor Pot hose and stop the Mother Liquor Pump.

D. Cleaning the Centrifuges:

1. Stop feed to centrifuge and wash out feed lines to the sample pot.
2. Close the slide gates and open the drain valve on the bottom of the dryer screw by turning the selector switch on the hand rail in front of the centrifuge to the “ON” position.
3. Turn the barrel switch lever to turn on the screw to “push” the water down the drain from the centrifuge being washed.
4. Open the water valve for the drain to clear the drain. Close it after the drain is clear. The valve is on the Large Centrifuge.
5. Open the water valve that washes the basket for 3 minutes.
6. Open the water valve that washes the housing for 3 minutes.
7. Open the water valve that washes the cake for 3 minutes.
8. Wash the salt buildup in the screw with hot water.

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9. Reverse the screw and repeat steps 4 – 8 for the other centrifuge.
10. After everything is clean, close the screw lid and shut off all water valves.
11. Return the slide gate switch to “OFF”.
12. Return the barrel switch lever for the screw to center position to stop the screw.
13. Ensure the gates opened to the dryer chutes.
14. Start with step 12 of part A “Starting the Centrifuges”

7.0 Reference Documents

N/A

8.0 Change Information

Document review- updated format using new template and numbering system.

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