
	GILES CHEMICAL ~ PREMIER MAGNESIA		
	Company Procedure		
	Title: Acid Tanks and Supply Pump	Number: P12-PR-200-004	
	Owner: Patrick Owen	Revision: 2	
	Effective Date: 05/08/2013	Page: 1 of 3	

1.0 Purpose

This procedure explains how to monitor and adjust the supply pump so that it never runs dry.

2.0 Scope

This procedure applies to all manufacturing workers.

3.0 Responsibility

Lead Operator, Material Handler

4.0 Safety Considerations

Safety shoes and safety glasses are required when working in, on, or around the Acid Tanks. Sulfuric acid is highly corrosive to clothing and the human body. If you come into contact with it, immediately flush the affected area(s) with water for 10 minutes. There is a safety shower and eyewash at the bottom of the acid tank stairs.

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 community.

5.0 Materials/Equipment

N/A

6.0 Procedure



Sulfuric acid is pumped to the process with a magnetically coupled seal-less pump. This pumps runs at all times and has two requirements – 1. It must have circulation, and 2. It must NEVER run dry. A recirculation loop and a current monitor protect the pump from these two situations.

Rules:

- **NEVER let the pump run dry**
- **NEVER close both Acid Return Valves at the same time – when switching, open both first**
- **NEVER close the Main Acid Recirculation Valve at the top of the pump**
- **ALWAYS check to see if the pump stays running after swapping any valves**

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	Effective Date: 05/08/2013	Page: 2 of 3	

Startup (or priming the pump if it has lost prime)

1. When starting the pump from an empty and dry line, ensure all dump, discharge, and return valves are closed.
2. Close the Acid Tank Vent Valve on the tank you will be feeding from.
3. Open the air supply and pressurize the tank to 10-12 psi
4. Open the Acid Discharge valve on the tank you will be pulling from (that you just pressurized)
5. Open the Acid Return valve on the other tank, to push some acid through the pump and to the other tank.
6. Start the pump (switches are at the top of the acid tank steps and also in the MgO house on the main control panel)
7. Ensure pump stays running
8. Open the Acid Return Valve on the tank you are pulling out of
9. Next, close the Acid Return Valve on the other tank
10. Close the air supply valve
11. Finally, open fully the vent valve (make sure the vents are open on both tanks)

Operation

1. Under normal operation the pump needs no adjustment
2. When making rounds at the acid tank, make sure the Acid Return Valve is open to the same tank that the Acid Discharge Valve is pulling from. Otherwise you can pump the tank dry to the other tank.

Changing Acid Tanks



1. Keep the pump running
2. Swap the Acid Discharge Valves (quickly)
3. Open both Acid Return Valves
4. Close the Acid Return Valve on the tank you are NOT pulling out of
5. Ensure the pump stays running (look at the end of the motor)

Dumping Acid

You can dump acid into either tank – even the tank you are pulling from. When not dumping, keep both dump valves closed.

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	Effective Date: 05/08/2013	Page: 3 of 3	

Topping Off a Tank

Acid can be switched from one tank to the other by opening the Acid Return Valve on the tank you are not pulling out of and closing the other Acid Return Valve. This way the acid recirculates from one tank to the other. Watch both tanks carefully and NEVER overfill a tank.

Shutdown

1. Push the red stop button on the pump switch
2. Close all Acid Discharge and Acid Return Valves

In case of electrical outage

1. Push the start button (either at the top of the acid tank stairs or in the MgO house on the main panel)
2. Ensure the pump stays running
3. If the pump doesn't stay running, follow the full Startup section

7.0 Reference Documents

N/A

8.0 Change Information

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

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