

Delivered additional profit of US\$ 2.6 million by reducing methanol consumption per MT of formic acid

BUSINESS CASE

Organization Trends:

- The organization has a plant for the production of Formic Acid
- In the Formic Acid manufacturing process, Methanol and CO are used as raw materials to produce Methyl Formate (MF)
- Hydrolysis of MF gives Formic acid and then the Methanol is recovered

CHALLENGE

What and how much is the challenge

- Last 3 years data shows that the Methanol consumption in Formic Acid plant is much higher than the specific consumption i.e. 20 kg / MT of Formic Acid production
- In the last FY Consumption of Methanol was 250 Kg/MT of Formic Acid.
- The plant needs to decrease the usage of Methanol as it is increasing the cost of Formic Acid production
- To reduce the methanol consumption by at least 20%, production cost and to save steam consumption in WFE

Where is the challenge

- Wet Film Evaporator (WFM) section is one of the major consumers of methanol

IMPACT

What is the impact

- Increase in the cost of Formic Acid leading to increase in OPEX and reduction in profitability
- Organization planning to shut down the plant due to estimated losses of over US\$ 5 million in the last Financial Year (FY)

How much is the impact

- Losses of US\$ 5 million per annum

TARGET

What and how much is the Target

- Reduce the Methanol consumption by 20 %
- Due to reduction of Methanol consumption by 45 Kg there will be saving of US\$ 24 per MT of Formic Acid production (as per current cost)
- To save steam consumption in WFE
- Key focus areas include:
 - Removal of Salt from MF Section
 - Reducing TG failure due to Thermal Shock
 - Reducing glass lining failure
 - Reducing leakage due to erosion

OUTCOMES

Improved Profits

- Delivered additional profit of US\$ 2.6 million by reducing methanol consumption per MT of formic acid

Operational Outcome

- Reduced the Methanol consumption by 17% thereby decreasing the overall production cost
- The plant turned profitable and the management decided to continue operations

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