

Industrial Wastewater Treatment Made Easy

This is an introduction to the dry granular Floccin™ product. As you will see, Floccin™ easily encapsulates various contaminants in your wastewater. These contaminants include suspended solids, organics and heavy metals.

Floccin™ operates over a wide pH range, removes more oil, grease and organics than other chemistries, separates the contaminants quickly from the waste stream, requires no additional chemistry to dewater, simplifies the operation by using just one product, and reduces overall operating costs.

Determining The True Costs of Liquid/Solids Separation

Each of these points should be used to clearly define the true operational costs of each wastewater treatment facility and the facility's potential for cutting costs:

1. **Chemical Costs:** These include all of the chemicals (acid, caustic, lime, coagulants, flocculants, dewatering aids, and others).

A single Floccin™ product will replace multiple chemicals in most cases.

2. **Surcharges paid to the POTW:** The local wastewater facility charges for BOD, TSS and FOG usually on a monthly basis on a pound/day fee.

Floccin™ excels at reducing BOD, TSS and FOG quickly and effectively.

3. **Quantity of Chemicals used onsite:** The more chemicals onsite, the more chemical handling and storage. Hazardous chemicals require secondary containment for storage.

With Floccin™ fewer chemicals means lower handling costs.

4. **Dewatering Aids:** The cost is the price per lb of the DE as well as the sludge it generates. Note, for every pound of DE used, it generates 3 pounds of sludge.

In most cases Floccin™ requires no additional chemistry for sludge dewatering.

5. **Drum and/or Tote Disposal:** Some facilities are charged a disposal fee for cleaning and recycling of the drums and totes.

Floccin™ eliminates the need for multiple containers and handling.

6. **Drum/Tote Storage:** Since some of these chemicals are hazardous, they need to be stored with secondary containment. Others will not. What is the storage cost to the facility?

Floccin™ is completely non-hazardous.

7. **Hazardous Chemicals:** The alum, ferric, acid (pH lower than 5.0), caustic (pH over 10) and other are all hazardous to the employees. The facility must pay extra for workman's Compensation and accident/injury insurances for having hazardous chemical handling onsite. What is this cost?

Floccin™ can potentially cut the liability costs of a facility.

8. **Sludge Production:** What is the cost for sludge disposal? These costs need to include tipping fees as well as freight from the point of origin to the point of disposal.

Floccin™ facilitates superior dewatering reducing overall sludge production.

9. **Sludge Quality:** The higher the % solids, the lower the disposal cost, as the facility is not paying for disposal of the water in the sludge.

Floccin™ maximizes the potentiality for a drier, denser dewatered sludge cake.

10. **Sludge Classification:** The classification of the sludge can greatly affect the price of disposal. Hazardous is most expensive and requires manifests and documentation and for larger facilities, reporting as a hazardous waste generator. This minimizes long-term environmental risk. All sludge has a disposal cost.

Floccin™ sludge is classified as low hazardous or non-hazardous waste for lower disposal costs.

11. **Labor:** The labor and functions performed from this labor factor need to be accounted for and added to the overall cost.

Floccin™ simplifies the treatment processes thereby reducing labor.

12. **Labor, environmental:** Include the EHS labor and costs (monthly or quarterly reporting, manifests, etc.).

Floccin™ can mean fewer environmental issues and reporting.

13. **Water Reuse:** Sometimes, a facility can reuse their wastewater, savings \$ on incoming water and outgoing sewer fees.

Floccin™ can make wastewater reuse and recycling possible, lowering costs further.

14. **System Capacity:** Is the current system limited in capacity? Does this limit facility production?

Floccin™ maximizes system capacity at zero capital expense.

15. **Electrical Costs:** What is the cost in electricity? This is tied to the system operating time in hours/day.

Floccin™ can cut these costs by increased system capacity thereby reducing operating hours.

16. **Filtrate Quality:** The chemicals added forms a floc that has shear strength proportional to the sludge dewaterability and filtrate clarity. If additional polymers are needed this is a cost. If the filtrate is cloudy with suspended solids, this has to be retreated or adds directly to the surcharges paid.

Floccin™ generates a higher shear strength floc thereby retaining the solids in the dewatered sludge.

17. **Recover Oil:** For oily waters, is there a cost savings to recover oil?

Floccin™ allows oil recovery, which is a resalable commodity.

18. **Recover Precious Metals:** If the industry has precious metals (gold, platinum, silver, etc.) these can be removed and recovered.

Floccin™ separates precious metals so the solids have value.

19. **Metals Removal:** Tight local discharge limits can reduce wastewater throughput as well as plant production. Is this a cost factor?

Floccin™ encapsulates heavy metals removing them from the waste stream and rendering them non-hazardous.

Conclusion – Cut Costs, Improve Compliance!

We started Integrated Engineers Inc., and created the Floccin™ products, based on my vision that environmental compliance should be effective, simple and affordable for industries. We've developed a unique and highly refined process of wastewater optimization where your entire wastewater process is evaluated including all engineering aspects, equipment and chemistry, maximizing your efficiency, compliance and profit potentiality.

Give Us A Call At 1-877-965-1577 or visit www.WeCleanWater.com to Find Out More

Thank you,

David Wensloff, PE, Founder & President

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