

Caflon Floc™

Powder Flocculants

 **Univar**Solutions

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Powder flocculants are chemical agents used in water and wastewater treatment to enhance the aggregation of particles, similar to coagulants, but with a focus on binding these particles into larger, more stable clumps (flocs). This helps improve the efficiency of sedimentation, filtration, and clarification processes. Flocculants are typically used after coagulation in water treatment processes to assist in the removal of suspended solids and other impurities.

How Powder Flocculants Work

- **Bridging Mechanism:** Flocculants work by creating a "bridge" between small particles, helping them aggregate into larger, heavier flocs that can settle or be filtered out more easily.
- **Electrostatic Attraction:** They may also enhance charge neutralization when used in combination with coagulants, further promoting floc formation.

In order to effectively benefit from these mechanisms, powder flocculants must be dissolved in water before use. This is typically being accomplished in a make-up unit, comprised of three compartments to ensure maturation of the polymer, where large 'folded' polymer molecules unfold into straight lines to allow maximum surface interactivity with wastewater pollution to bind efficiently.

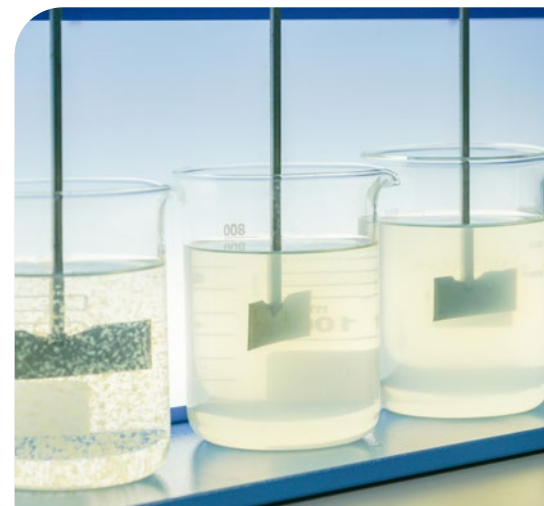
Polyacrylamides (PAM) is the most common type of powder flocculant, available in both anionic (negatively charged), cationic (positively charged), and non-ionic forms. They are highly concentrated and easy in terms of handling, storage and transport, thanks to the universal packaging in the solid form (standard 25 Kg and big 1000 kg bags) which helps to economize the associated costs compared to the alternative products.

Typical Characteristics

Appearance: White powder

Dissolution: 2-10 kg per m³ water

Shelf life: up to 12 months



Applications of Powder Flocculants

Drinking Water Treatment:

Flocculants are used to improve water clarity by removing fine particles, microorganisms, and organic matter.

Wastewater Treatment:

In industrial and municipal systems, powder flocculants help separate solids, oils, and other contaminants from water, aiding in sludge thickening and dewatering processes.

Industrial Processes:

Sectors like mining, food processing, and paper manufacturing use flocculants to treat process water and recover valuable resources.

Powder flocculants play a critical role in improving the efficiency of water and wastewater treatment by promoting the aggregation and removal of fine particles, leading to cleaner, clearer water



Product portfolio

Univar Solutions' Caflon Floc series offers a complete portfolio of powder flocculants designed and formulated based on a wide range of ionicity (anionic, cationic, non-ionic and amphoteric) and molecular weight (very low, low, medium, high, very high) to suit different applications in the water and wastewater industry.

| SECTOR/INDUSTRY | CAFLON FLOC™ PA | CAFLON FLOC™ PC | CAFLON FLOC™ PN |
|-----------------------------|-----------------|-----------------|-----------------|
| Pulp and paper | | ✓ | |
| Dairy | ✓ | | |
| Slaughterhouse - Red meat | ✓ | | |
| Slaughterhouse - Poultry | ✓ | | |
| Potato | ✓ | | |
| Mining & Quarries | ✓ | ✓ | ✓ |
| Communal waste water plants | | ✓ | |
| Biogas | | ✓ | |
| Textile | ✓ | ✓ | |
| Metal treatment | ✓ | | |
| Refinery | ✓ | | |

| PROCESS UNIT | CAFLON FLOC™ PA | CAFLON FLOC™ PC | CAFLON FLOC™ PN |
|----------------------------------|-----------------|-----------------|-----------------|
| Sludge dewatering - Centrifuge | | ✓ | |
| Sludge dewatering - Belt press | | ✓ | |
| Sludge dewatering - Filter press | ✓ | ✓ | |
| CEPT DAF unit | | ✓ | |
| CEPT - Sedimentation tank | ✓ | ✓ | |

Comparison over the emulsion flocculants:

Cost effective and optimal transport/storage

| | POWDER PRODUCTS | EMULSION PRODUCTS |
|----------------------|-----------------|-------------------|
| Diversity | Very large | Limited |
| VOC's increase | X | ✓ |
| COD & BOD increase | X | ✓ |
| Freezing temperature | N/A | Low |
| Shelf life | 12 months | 6 months |
| Handling & storage | Easy | Not very easy |



Benefits of Powder Flocculants

High Efficiency:

Powder flocculants can rapidly enhance floc formation, leading to faster and more effective solid-liquid separation.

Cost-Effective:

Their high active concentration allows for efficient use in treatment processes, reducing overall chemical consumption.

Customizable:

Powder flocculants come in various charge densities and molecular weights, allowing them to be tailored to specific treatment needs.

Partner with us for reliable and efficient water treatment solutions that meet your operational and environmental goals. Let us explore how we can support you and find the optimal solution that suits your business and operations.



Contact:

For more information on this range of Products please contact your local Univar Solutions representative.

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