

Bioset Process

Alkaline Stabilization/Pasteurization - Class 'A'



Features



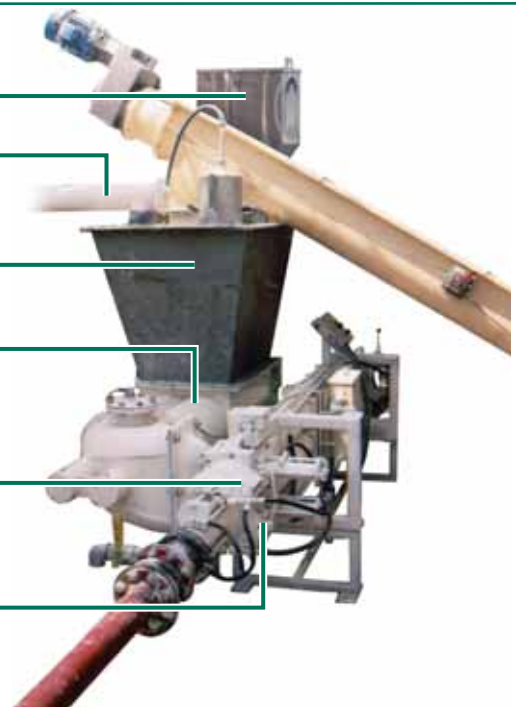
Ammonia scrubber and collection line, 3 gpm of water flow.

Biosolids exposed to high temperature and high pH within reactor. Ammonia kills pathogens before temperature does enabling PFRP approval to reduce operating temperature from 70C to 55C. This approval results in a reduction of the already low operating costs

No external heat is required. All energy is produced by chemical reactions.

Enclosed reactor contains odor and dust

Temperature sensors monitor process



Sulfamic acid feeder

Quicklime screw feed

Totally enclosed hopper that contains all dust and odors

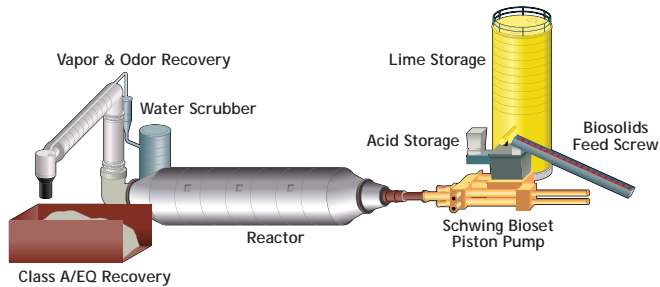
Counter-rotating, intermeshing, twin-screw auger provides efficient homogenized mixing of the biosolids and chemicals.

Schwing Bioset positive displacement piston pump capable of pumping organic materials up to 50% solids content at pressures over 1,500 psi.

Poppet valve discharge assembly that allows use of Schwing Bioset's Sludge Flow Measuring System (SFMS™) which measures, to within +/-5%, the amount of biosolids pumped.

Benefits

The Bioset process achieves Class 'A' biosolids via the time vs. temperature equation and pH adjustment per the EPA 503 regulations. Temperature is achieved through the addition of Quicklime and Sulfamic acid and the high pH is achieved through the addition of the Quicklime. Biosolids and chemicals are homogeneously mixed in a Schwing Bioset twin screw feeder and pumped with a Schwing Bioset piston pump through an insulated reactor.



As the Bioset process is totally enclosed within the reactor the process operates odor free. The reactor discharge provides the only location for gases to escape and they are easily collected and scrubbed utilizing a small water scrubber. The resulting final product has an odor that is similar to wet-concrete.

The following features of the Bioset process make it an attractive solution to many small and large Wastewater Treatment Plants.

- Simple system that is easy to operate
- Requires little maintenance
- Provides a consistent Class 'A' product that offers long-term stability
- Operates virtually devoid of dust and odors
- Low capital and operating cost

Easy operation and reliable results

From start-up to shut-down the Bioset process remains the easiest to operate and most reliable Class 'A' system available. Even on shut-down, biosolids that remain in the reactor are treated to Class 'A' levels and discharged as such on the next start-up.

Cleanliness

The Bioset process is a clean system to operate as it is totally enclosed from start to finish. Being totally enclosed prevents dust and odors from escaping at the inlet, prevents biosolids from spilling during the process, and allows point source odor capture at the discharge.

No supplemental heat

All of the heat to operate the Bioset process is achieved via chemical addition. No expensive and maintenance intensive supplemental heat sources are required.



Odor control

As the Bioset process is contained within the reactor the process operates odor free. The reactor discharge is where gases are emitted and they are easily captured at this single point with a small water scrubber. The final Class 'A' material has an odor, due to the high lime content, similar to wet concrete.

Operating cost

With ever-rising energy costs the Bioset process stands out as the most economical method of producing Class 'A' biosolids as it is not reliant on auxiliary electrical, steam or thermal oil based heating systems.

Reduced operating costs through PFRP approval

PFRP approval to reduce the operating temperature is possible as the ammonia that is generated through lime addition is entrained with the biosolids inside the reactor and kills the pathogens. The EPA has recognized this phenomena and has granted site specific approval to reduce operating temperatures from 158F (70C) to 131F (55C)



Biosolids Processing and Handling Solutions

Sliding Frame



Sliding frame systems, whether used as truck receiving, truck loading, or as intermediate storage, offer a flexible means of storing dewatered biosolids while eliminating bridging and simplifying maintenance. Available in any capacity, with any number of outlets and material discharge rates, sliding frame technology represents the ultimate in design flexibility.

Operating and Marketing Contracts



Schwing Bioset's partnership with Biosolids Distribution Services, an operating, hauling, and end-use biosolids marketing company, puts Schwing Bioset in a unique position to offer complete solids handling solutions in which all equipment, engineering, and distribution of Class 'A' biosolids is offered by a single provider.

Sludge Pumps



Schwing Bioset, Inc. is a recognized leader in sludge pump technology. SBI units pump dewatered biosolids from Belt Presses, Centrifuges, Plate & Frame Presses, and Rotary Presses with dry solids content up to 56%. The versatile pumps have been used in both large and small wastewater plants since 1984 and remain a preferred technology for conveying dewatered biosolids.

Fluid Bed Dryer



Schwing Bioset's fluid bed dryer offers a thermally efficient means of producing dust-free Class 'A' biosolids. Automated to allow unattended operation, the Fluid Bed dryer operates under completely inert conditions and, unlike other technologies, it does not require any recycle of already dried biosolids.

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