PFAS Destruction - Biosolids

Closed Loop Microwave Plasma System



TAKING AIM AT SOLVING THE TOXIC "FOREVER CHEMICAL" PROBLEM

6K Pure uses the UniMelt advanced material process engine for the industry's first complete per- and polyfluoroalkyl (PFAS) destruction and remediation solution. Utilizing the 6000K UniMelt plasma, 6K Pure can destroy PFAS also known as the "forever chemical" that is found in drinking water, AFFF firefighting foam and wastewater from industrial manufacturing processes. The chemical's carbon-fluorine bond is one of the strongest, making them almost impossible to destroy – until now.

The ability to accept all three states of matter to destroy PFAS, including solid, liquid, or gas, allows the UniMelt platform to be applied across a variety of applications - water purification, wastewater treatment of biosolids, industrial manufacturing, AFFF and air emissions. In addition to destroying PFAS, the UniMelt has a unique capability to reactivate granular activated carbon (GAC) commonly used to absorb organic compounds like PFAS in drinking water treatment systems. The ability to reactivate GAC provides producers and water municipalities with an environmentally friendly and proven way to address PFAS, while also recirculating a high-value filter material back into the system - reducing the need to produce virgin GAC and further reducing their carbon footprint.

THERMAL PLASMA is hot enough to break down stable PFAS molecules in just SECONDS



Remediate 100% of PFAS chemicals back into non-hazardous, high-value products

- ✓ Complete destruction of long and short-chain carbon-fluorine molecules
- ✓ All PFAS media solid, liquid and gas
- ✓ Ultra-fast with PFAS destruction in 2 seconds
- ✓ Low-cost operation
- Flexible and agile deployment (6K centralized, on-site or mobile)

Primary Markets Addressed

- ✓ Inherently safe process running at atmospheric pressure with low thermal mass
- ✓ Zero emissions with our closed-loop process

Notable Attributes



Closed loop, continuous process



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Scalable and highly modular



All material types Solids, Liquids and Gases



Up to high concentrations



Reactivates spent carbon



Water Filtration



Firefighting Foam



Manufacturing Waste

PFAS Destruction in Biosolids

From Wastewater Treatment



ANALYTICAL RESULTS FOR ONE PASS ONLY Residuals addressed by closed loop process



Sample from local **Water Resource Authority:** 4-3-0 (N-P-K) Slow Release Fertilizer Biosolids

Nutrient Level maintained for land application use Regulated metals below EPA and MA DEP limits

In first trial, PFAS partially removed and destroyed

N-P-K

7.00

6.00

5.00 4.00

3.00 2.00

1.00 0.00

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Feedstock Post

P2O5

Nutrient Value (%)







MAINE

SO4-S

Scaled UniMelt Manufacturing



System Specifications

- ✓ Small Footprint 20' x 20'
- ✓ Power Requirements of 480V
- ✓ No Moving Parts
- ✓ Ultra-Fast / Ultra-Clean -2 Second Process
- ✓ Low/No Production Waste
- ✓ Continuous Process and Batch Integrity

Deployment Options



MOBILE UNITS Scaled to Need

Demonstration & short duration projects



STATIONARY UNITS High Capacity Dedicated system(s) located at source

Rate of up to 2 tons per day

Nutrient Testing

6KPure.com

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