



Lystek 
 Nothing wasted.
 Everything to gain.

Lystek THP[®] Technical Specifications

About the Technology

The Lystek low temperature Thermal Hydrolysis Process (Lystek THP[®]) is an innovative, award-winning, proven biosolids and organics management solution.

Lystek THP transforms raw or digested organic feedstocks into a Class A quality biosolids fertilizer and multi-use hydrolyzed product. This technology offers one system with multiple benefits. This system enables wastewater treatment plants to enhance biogas production while reducing residual volumes, costs, odors, and greenhouse gases (GHGs).

Operating inputs are low pressure steam, high speed shearing, and alkali, all applied simultaneously in an enclosed Reactor.

One System. Multiple Benefits:

Lystek THP has a small footprint, is cost effective, fast, efficient, reliable, and proven.

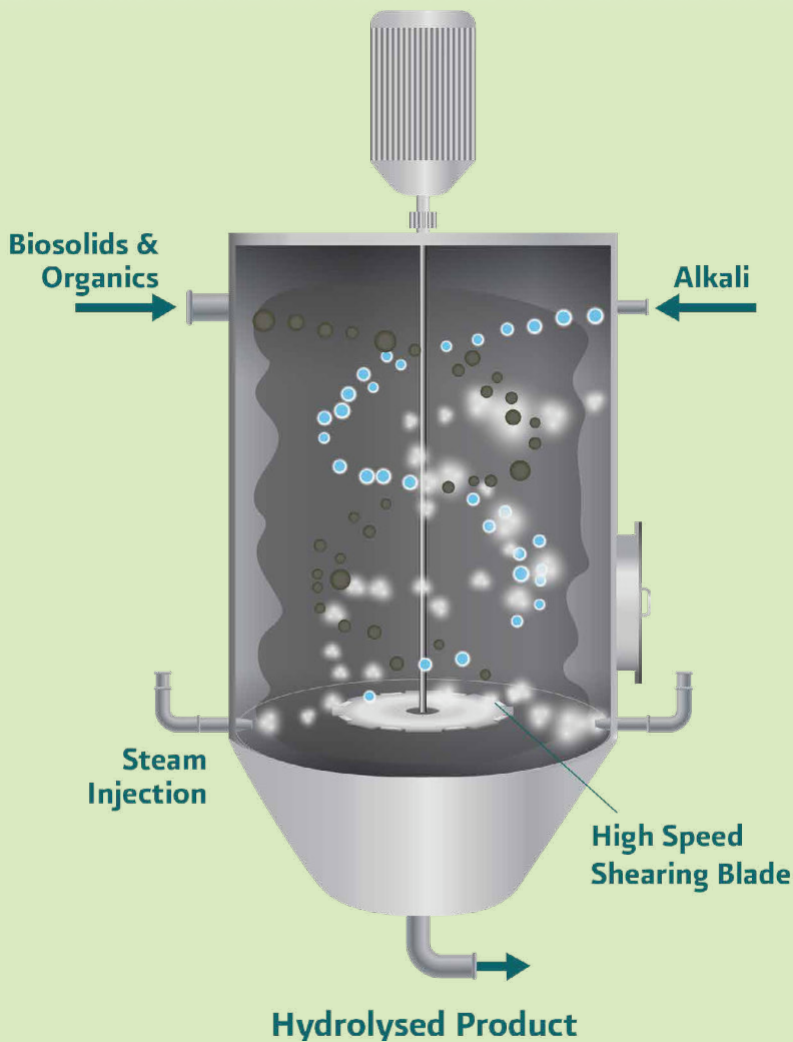
Modular design makes it scalable and easy to deploy (or retrofit). The system is fully automated and simple to operate and maintain.

Additional advantages of the solution include:

- Creates a marketable, high-solids liquid Class A biosolids
- Comprehensive product management services
- Optimizes anaerobic digesters; increasing biogas production for green energy while decreasing residual volumes through improved volatile solids reduction (VSR)
- Produces a safe, cost-effective alternative source of carbon for biological nutrient removal (BNR) systems
- Processes digested (anaerobic or aerobic), WAS, or raw residuals
- Augment to existing plants - does not disrupt process flow
- Operational simplicity - no additional operators required
- Effective odor mitigation with an enclosed system
- Ease of integration with multiple resource recovery technologies



Lystek THP[®] Reactor



LysteGro[®] - Class A biofertilizer

LysteMize[®] - Anaerobic digester optimization

LysteCarb[®] - Alternative carbon source

Moduleⁱ Sizing

Module size	LY3	LY6	LY10
Processing rate (dry tons per hour)	0.3	0.6	1.0
Typical processing footprint ⁱⁱ (ft ²)	800	1,250	1,600

Key Operating Parametersⁱⁱⁱ

Electrical consumption	60 kw-h per dry ton
Heat requirement ^{iv}	1,100,000 BTU per dry ton
45% liquid alkali solution ^v	190 - 230 lb per dry ton
Operating temperature	167° F / 75° C
Solids content - processed product	13 - 16%
Viscosity - processed product	5,000 - 10,000 cP

End Product Value/Options

LysteGro [®] biofertilizer	Meets/exceeds Class A biosolids criteria
LysteMize [®] digester optimization	Increase biogas production by up to 40% and volatile solids reduction by up to 25%
LysteCarb [®] alternative carbon source	Eliminate use of costly chemicals (i.e. methanol, glycerol) used for BNR

- ⁱ Module includes the THP Reactor, associated pumps and hopper.
 - ⁱⁱ Minimum space required for processing equipment only (Module, alkali storage, boiler) only. Product storage and air treatment system requirements will vary by site conditions.
 - ⁱⁱⁱ Operating parameters are estimates only and will vary according to site conditions, feed stock characteristics, and intended use of hydrolysed product.
 - ^{iv} Dependent upon biosolids feed temperature into the Reactor. Heat requirements estimated based upon an average feed temperature of 60° F.
 - ^v Typically recommend potassium hydroxide (KOH). For larger facilities, lower cost alkali sources can be considered.
- + Modular and scalable to any population size.

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