



Buyers' Guide



COMPLETE TANK SERVICES

quality • honesty • experience



*Proven Liquid Fertilizer
Storage Tank Solutions*

*Specialized Containment
Options for the Fertilizer Industry*

heartlandtankcompanies.com
800-774-3230



ABOVEGROUND LIQUID STORAGE TANKS

Options for Planning Success

Logistics of planning a new storage tank can be the biggest challenge. Where should the tank(s) be located based on land availability, type of secondary containment, method of filling (rail, barge, or truck), loadout method, and consideration for future expansion of the facility? Heartland Tank Companies support you with their decades of experience to assist you in evaluating the various options to determine the best configuration.

Quality Materials and Construction

Excellence in constructing API 650 storage tanks starts with a no-compromise approach to using quality materials and precision construction methods. Eight foot wide flat, mill certified, precision cut steel comprises every tank shell, roof, and floor, decreasing the number of welds required. Add the accuracy of a double-sided girth welder, certified welders, and a diligent crew erecting the quality storage tank. This constant pursuit of a quality storage tank is what sets a Heartland Companies tank a part from the competition.

Aboveground Liquid Storage Tanks

- *API 650 Standard*
- *8 Foot Wide Flat, Mill Certified Steel*
- *Certified Welders*
- *Double-Sided Girth Welder for Horizontal Shell Seams*





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HEATED AND INSULATED SYSTEMS FOR LIQUID STORAGE TANKS

Safeguarding Product from Winter

Flexibility to store liquid fertilizer year round has become a need due to unreliability in rail transportation to deliver in warmer months. Heartland Tank Companies' innovative heated and insulated system for liquid storage tanks enables product storage at a constant temperature through frigid winter conditions.

System Essentials

Components include Ridglok® insulation panels, a method of heat introduction, an automated heat trigger system, and a circulation pump. Housing 3 to 4 inches of high quality insulation, the insulation panels are the workhorses of the system by holding the heat within the tank. The heat retention efficiency requires only occasional use of the heat source to maintain a constant product temperature. An internal steel coil system using glycol or an external heating method is used depending on whether the tank uses an internal PVC liner for corrosion and/or containment protection. Finally, the automated product temperature sensor monitors the product temperature and triggers the heat system only when the average product temperature reaches a set minimum level. Circulation of the product is also triggered with the heat system to ensure no cold spots occur. Product and ambient temperature data tracking and telemetry for reporting to central computers are also additional options available for oversight of the system.

Benefits of Heated, Insulated Tank System

- *Protects salt prone and temperature sensitive products in cold temperatures*
- *Automates temperature monitoring and heat engagement for ease of use*
- *Consumes minimal energy*
- *Available for existing and new tanks*
- *Compatible with any secondary containment system*





CASE STUDY – THE ARTHUR COMPANIES, HARVEY, NORTH DAKOTA

Client Needs

The Arthur Companies needed to install a new liquid fertilizer facility that would include storing salt prone ammonium thiosulfate through the harsh winter lows of North Dakota. With the railroad transportation issues in spring 2014, the company recognized the need to ensure timely product availability by storing the liquid fertilizer through the winter and having it guaranteed on hand for the spring fertilizer season.

Specifications of Harvey Heated and Insulated Tank

The half million gallon heated and insulated tank installed as a part of the new facility used an internal PVC liner for secondary containment. To protect the liner integrity, the heating system used introduces heat externally underneath the insulation panels. Ridglok® panels with 4-inch insulation surround the entire tank shell and roof to contain the tank temperature. Temperature probes and the heating elements are all connected to a software system housed in the load-out building that automates the introduction of heat and engagement of the circulation pump when the product reaches a set minimum temperature. All piping was also insulated and electric heat traced to prevent product salt in the lines.

Proven Success

The Arthur Companies used their new heated and insulated tank starting in the fall of 2014 to store ammonium thiosulfate through the winter. The North Dakota winter delivered its normal winter lows, reaching below -20 degrees Fahrenheit. Despite the severe temperatures, the liquid product maintained a steady temperature of 46 degrees F with the heating and circulation system only engaging when needed.



For more information on this and other projects, visit heartlandtankcompanies.com or call 800-774-3230.





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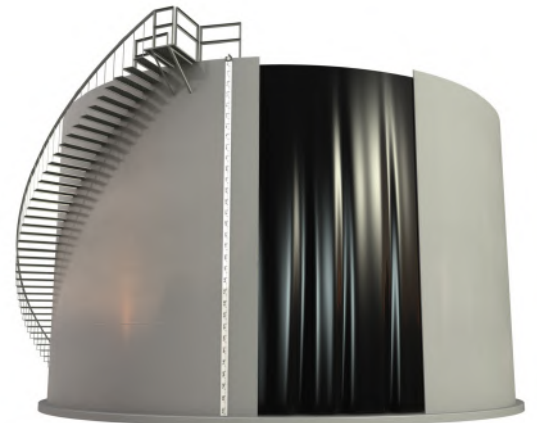
INTERNAL FLEXIBLE PVC TANK LINERS

Alternative Secondary Containment

Cost savings is only one reason to consider an internal PVC (Polyvinyl Chloride) tank liner. Internal liners also lessen the necessary footprint of a tank compared to lined dikes and double wall tanks while providing corrosion control for the tank. Many states allow internal PVC liners as a secondary containment alternative to the traditional options.

How Internal PVC Liners Work

The flexible PVC liner hangs inside the aboveground storage tank and becomes the primary containment for the stored liquid. Once the liner is installed and liquid is introduced to the lined tank, the liquid only contacts the liner. The leak detection system involves a manual leak detection monitor and structural steel valve containment boxes with leak monitoring. If a leak does occur in a liner system, the leak detection monitors will contain product. This is a fail-safe way to prevent any environmental contamination compared to other secondary containment methods.



Benefits of Internal PVC Tank Liners

- *Lower Cost for Containment*
- *Tank Corrosion Control*
- *No Additional Footprint Required for Secondary Containment*
- *Chemical Resistance to Most Fertilizers*
- *Reliable Leak Detection System*
- *Reduced Time Needed for Installation*





API 653 TANK INSPECTIONS

Tank inspections are either required or suggested approximately every five (5) years according to The Fertilizer Institute or state requirements. API 653 inspections performed by certified inspectors ensure that your tanks are ready for continued service and can identify any needed repairs to continue operating safely. Detailed reports from each inspection help you keep a history of each tank and potentially identify any trends in tank aging. Inspections include visual internal and external inspection, ultrasonic thickness tests to determine the thickness of the steel plates, and floor weld vacuum testing by certified API 653 inspectors.

Heartland Tank Companies

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- Englewood, CO
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