**WASTEWATER**

**LABTANK**
Acid Neutralization Systems

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**General Information**

When plumbing drainage systems include the discharge of corrosive, toxic and flammable wastes, special attention should be placed in treating the waste. Such untreated waste can physically damage a building’s plumbing system as well as the environment. Laboratories and industrial plants are common applications that require the treatment of waste.

A solution to this problem of waste treatment is the utilization of a Neutralization Tank. The LabTank® Neutralization Tank is positioned so that acidic waste is collected and passed through this tank prior to discharging into the general sewer system. The waste is chemically neutralized in this tank. It is important to note that the tank is an acid neutralizer and not intended to perform acid dilution. For optimal tank performance it is not recommended that acidic waste be further diluted prior to neutralization. Therefore, all acidic effluent should be gathered separately from other non-acidic waste and non-acidic waste should by-pass the neutralization tank.

**Neutralization Fill Medium**

The neutralizing medium, commonly referred to as “Chemical Rock”, consists of lump limestone or marble of the 1” to 3” size. The Chemical Rock should have a calcium carbonate content of at least 92%. After the acid neutralization tank is installed, the tank is charged with chemical rock. The chemical rock is expendable during normal operation.

**Operation**

Acids and alkalis can be neutralized, rendering them harmless. The degree of neutralization can be measured by the pH system (concentration of hydrogen ion). Acid pH values range from 0 to 6.99, a neutral solution is 7 and alkalis range from 7.01 to 14. The smaller the pH value, the higher the content of acidic waste. The larger the pH value the higher the content of alkaline waste.

The neutralization process occurs by the chemical reaction of calcium and magnesium carbonate with the acidic waste. The pH value is increased to 6.0 - 8.0. This range of pH in the neutralized effluent is generally acceptable for discharge into public sewer systems.

**Venting**

The Neutralization Tank is gas-tight, therefore venting is required. During the neutralization process the by-product is carbon dioxide gas that is not toxic, corrosive, or flammable. Venting will allow for the removal of any vapors. Venting is typically accomplished by routing a vent pipe from the tank to the building vent system.

**Applications**

- Laboratories
- Hospitals and Clinics
- Research Facilities
- Battery Rooms
- Process Plants
- Chemical Storage Facilities

**Features**

- Complete Packaged Systems
- Precast Concrete, Polyethylene, Fiberglass or Steel Construction
- LabRox™ Chemical Rock
- Available Acid Resistant Liners
- Available pH Monitoring System

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Need more information? visit labtank.parkusa.com
The following lining materials are available for interior and exterior lining of acid neutralization tanks. Consult the chemical resistance table for proper application.

### High Density Polyethylene (HDPE)
HDPE is a high quality abrasive and chemical resistant thermoplastic with high stress-crack and impact resistance. HDPE has high structural rigidity and moderately high continuous operating temperature rating, up to 160 °F. The lining system is manufactured from 3/16” thick thermoplastic sheets with anchor studs for embedding into the concrete outer shell. The welded panels form an integral part of the concrete structure.

### Ceramic Brick Lining
The ceramic brick liner is the solution when fiberglass or plastic liners do not offer adequate protection. The ceramic brick liner offers permanent protection even in the harshest of chemical environments. This type of liner has traditionally been used in industrial applications such as Pulp & Paper Mills and Oil/Gas Refineries. The ceramic liner system consists of an impermeable membrane overlaid with acid proof brick. The liner can be applied to steel or concrete tanks.

### Model ANT Acid Neutralization Tank

<table>
<thead>
<tr>
<th>LabTank Model</th>
<th>Neutralization Fill Lbs.</th>
<th>Cu. Ft.</th>
<th>Gallons</th>
<th>Maximum Effluent Gal/hr</th>
<th>Number of Lab Stations</th>
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</table>

Call for sizes not listed or specific project requirements: 888-611-7275

Suffix:  PB - Polyethylene/Bitumastic  PP - Polyethylene/Polyethylene  BB - Ceramic/Bitumastic  CP - Ceramic/Polyethylene

### Construction

LabTank Neutralization tanks manufactured by ParkUSA are constructed of quality precast concrete, Class II 4500 PSI @ 28 days. Precasting the concrete shell ensures that all units achieve structural and physical uniformity. The units are structurally engineered for H-20 truck loading and can be buried without any need for any other structural protection. The unit is of monolithic construction at the walls and bottom to insure against joint leakage.

An interior liner is installed within the concrete shell, which provides for resistance to abrasion and harsh chemicals. The liner is monolithic at the walls and bottom insuring against leaks. Some common lining materials include; Fiber Reinforced Polyester, High Density Polyethylene, or Polypropylene. The interior lining should be specified which best fits the application’s chemical waste and project budget.

Where exterior corrosion control, groundwater impermeability, or dual containment is necessary, an exterior wall liner is a solution. The exterior liner is provided on the concrete outer wall. Some common lining materials include; Bitumastic Waterproofing, Fiber Reinforced Polyester, High Density Polyethylene, or Polypropylene. Leak detection systems are available to detect primary tank or