

Specifications – Accu-Tab® PowerPro®

Part 1: CALCIUM HYPOCHLORITE TABLET CHLORINATION SYSTEM

1.01 General Description.

The system shall be designed to feed low concentrations of calcium hypochlorite in solution intermittently or continuously as required for water treatment applications, such as process, potable, waste, etc. The system shall be a single pre-assembled, package unit in a welded aluminum frame consisting of chlorinator, electrical boxes, centrifugal pump, and balance tank for ease of installation and operation. Field assembled systems shall not be acceptable. The system shall be the PowerPro® Model _____ by PPG Industries, Inc. Only NSF Standard 60 listed Accu-Tab® SI (scale inhibitor) calcium hypochlorite tablets by PPG Industries, Inc shall be used.

The base proposal requires furnishing equipment as specified herein. The bidder is cautioned that substitutions must meet the quality and operational requirements of each feature specified in Section 1.02 below. Batch systems with pressure mixing components producing chlorine concentrations exceeding the limits of the specifications will not be considered.

Any system offered shall use an NSF Standard 61 listed erosion feeder (not all PPG feeders are NSF listed), an NSF Standard 60 listed calcium hypochlorite tablet, and shall be capable of meeting all requirements of the Health Department having jurisdiction over the installation.

1.02 System Features.

- a. A maximum chlorine solution level of 0.05% (500 ppm) shall be maintained to prevent calcification in system components. Systems producing chlorine concentrations higher than 0.05% shall not be acceptable.
- b. Delivery shall be by erosion feed technology to control accurate and consistent concentration limits in the chlorine treatment solution. Spray and/or vortex technology systems shall not be acceptable.
- c. The chlorinator shall automatically and continuously feed a limited quantity of chlorine in solution as needed; when the system is not running, no more chlorine than that amount which can be fed in one minute or less shall be left in the tank to prevent chlorine loss. Batch systems preparing excess quantities of solution for delivery over an extended period shall not be acceptable.
- d. A centrifugal pump wired to the system electrical box shall feed freshly mixed chlorine treatment solution only as required for maximum efficiency. Batch systems requiring the use of a metering pump or pumps to feed pre-prepared standing solution shall not be acceptable.
- e. All piping in the chlorinator unit shall be Schedule 80 PVC for durability. Systems with flexible tubing shall not be acceptable.

1.03 System Components.

a. *Tablet Chlorinator.* Accu-Tab® chlorinators by PPG Industries, Inc are designed exclusively for Accu-Tab® SI calcium hypochlorite tablets by PPG Industries, Inc. Tablets are placed on a sieve plate inside the chlorinator; as water flows across the sieve plate, the tablets erode at a rate proportional to the flow rate.

b. *Inlet Water Supply Connection with Filter.*

Model 3012	1" FNPT	(fresh water supply of 30 GPM required)
Model Dual 3012	1" FNPT	(fresh water supply of 30 GPM required)
Model 3075	1" FNPT	(fresh water supply of 30 GPM required)
Model Dual 3075	1-1/2" FNPT	(fresh water supply of 50 GPM required)
Model 3150	1-1/2" FNPT	(fresh water supply of 60 GPM required)
Model 3530 and larger	1-1/2" FNPT	(fresh water supply of 75-100 GPM required)

c. *Inlet Solenoid Valve.* Opens and closes on command when the system receives a signal.

d. *Digital Flow Meter.* A flow sensor transmits a pulse signal to a digital monitor, measuring the flow of the fresh water-dissolving stream.

e. *Flow Control Valve.* PVC gate valve mounted in line with the flow meter allows operator to adjust flow of water-dissolving stream.

f. *Solution Tank.* Made of high-density polyethylene. Capacities:

Model 3012	22 gallons
Model Dual 3012	22 gallons
Model 3075	22 gallons
Model Dual 3075	28 gallons
Model 3150	28 gallons
Model 3530	45 gallons
Model 3550	45 gallons
Larger Models	45 gallons

g. *Primary Solution Tank Level Control.* Made from Schedule 80 PVC and 316L stainless steel, this float valve meters the tablet by-pass flow. The by-pass stream balances the variation in the water-dissolving stream. The float valve opens or closes to maintain the pump rate as it is manually throttled.

h. *Secondary High/Low Level Solution Tank Control.* Prevents the solution tank from overflowing. High level: when activated, a switch opens the circuit to the solenoid valve, causing the valve to close. Low level: shuts pump down preventing cavitation. A restart timer will prevent the pump from "chattering".

i. *Solution Delivery Pump.* Delivers chlorinated solution into a pressurized stream. A Grundfos vertical multi-stage centrifugal pump is provided.

j. *Solution Injection Pump Air Bleed.* Used to prime the pump at start-up, or at any time, if necessary. Also functions as a recycle line for tank cleaning.

- k. *Primary Backflow Prevention.* A PVC Y-check valve prevents reverse flow of water into the system.
- l. *Discharge Control Valve* (manual). Used to balance system output water flow with system input water flow.
- m. *Outlet Connection.*
 - Model 3012 1" FNPT
 - Model Dual 3012 1" FNPT
 - Model 3075 1" FNPT
 - Model Dual 3075 1-1/2" FNPT
 - Model 3150
and larger 1-1/2" FNPT
- n. *Nema 4X Electrical Enclosures, UL listed.*
- o. *Aluminum Frame, Type 6061-T.*

1.04 Optional Equipment.

- a. *Inlet Pressure Regulator.* Schedule 80 PVC pressure regulator installed for water inlet pressure above 70 PSIG.
- b. *Inlet Pressure Gauge.* Liquid filled 0 to 100 PSIG installed for inlet pressure above 70 PSIG.
- c. *Control Option.* A variable frequency drive (VFD) motor on the solution delivery pump is controlled by the process controller. An electrically activated ball valve may be substituted for the VFD if required.
- d. *Weight Scale.* Load cell factory-installed under the chlorinator to measure tablet weight.
- e. *Process Controller.* Factory-installed PLC for automatic chemical delivery. Capability to control in Flow-Pacing, Residual, or Compound Loop modes.
- f. *Chlorinator Dehumidifier.* Factory installed air blower to prevent moisture pick-up of tablets.

1.05 Electrical Requirements.

Each system to be designed per available power. Two electrical circuits are required for operation: (1) dry contact or 110v 5 amp control, and (1) pump circuit sized for the pump/motor provided, and shall operate on _____ VAC _____phase power.

1.06 Warranty.

The manufacturer shall guarantee in writing that this unit, if operated in accordance with written instructions given and accepted by the Owner, will perform in complete accord with the specifications. All components will be warranted against manufacturers' defects for twelve (12) months from its original installation date or thirteen (13) months from its PPG shipment date, whichever first occurs. **Only Accu-Tab® SI tablets can be used in these chlorination systems. Use of any other tablet will invalidate the warranty.**

1.07 Extended Warranty

The manufacturer shall guarantee an additional year(s) provided the end user customer agrees, in writing, to continue purchasing Accu-Tab® SI tablets from PPG's authorized Industrial Specialist, for that additional year(s).