

SDS & PSDS

BICARBONATE MIX &
DELIVERY SYSTEMS WITH
OPTIONAL ACID SOLUTION
DELIVERY

510(K) MEDICAL DEVICE



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PRODUCT DESCRIPTION

Properly providing bicarbonate solution in a cost effective manner is a challenge for hemodialysis providers. Preparation and disinfection can be time-consuming and labor intensive. Bicarbonate can corrode certain metals and painted surfaces leaving your preparation area encrusted and grimy. Furthermore, if not mixed properly, bicarbonate can negatively affect the dialysate solution.

We recognize these challenges and have exceeded in meeting them by offering systems that are designed for quality and ease of use. We can help you plan a system for a new clinic or retrofit an existing clinic utilizing the Solution Delivery System (SDS) or Pressurized Solution Delivery System (PSDS) Models.

Our Bicarb Mixing and Distribution Systems are cost-effective, clean and efficient, and are industry leading systems. We offer a range of choices so you can maximize efficiency with a system tailored to your specific needs. These systems both offer optional disinfection capabilities using ozone. They also connect directly to the Tx3® Therapy Supply Station, which are available separately.

STANDARD FEATURES

- The cone bottom tank and system frame are made of polyethylene while the enclosure and pump panels are made of polycarbonate and PVC to prevent rust and corrosion from destroying the equipment.
- Low profile 70 or 100 gallon tanks allow easy bicarbonate powder loading.
- Complete bicarbonate mixing is attained with a powerful stainless steel 3/4 hp pump system. The internal static mixer has no rotating parts to jam or break.
- Ultraviolet irradiator with a 254 nm UV lamp in bicarb fluid path to discourage bacterial growth (SDS only).
- Automatic level control switch with audible and visual alarm alerts the user of low distribution concerns.
- Adjustable automatic level controller can be set to mix a variety of concentrates.
- Distribution Pump no-flow protection feature (PSDS only).
- Built-in timer to ensure product is not over-mixed.
- Gravity feed head tanks balance the distribution and eliminate air locks and pressure spikes at the point of use (SDS only).
- Quick disinfect and rinse times. Compatible with all industry disinfectants. Disinfect spray bars insure thorough sanitization and rinsing of mix and head tanks.
- This equipment has been tested and demonstrated compliance with the following standards: Safety Requirements For Electrical Equipment For Measurement, Control, And Laboratory Use, - Part 1: General Requirements [UL 61010-1]



SDS MIXING UNIT
(Note: head tanks not shown)



PSDS MIXING AND DELIVERY UNIT

HOW SDS WORKS

The Solution Delivery System (SDS) provides an efficient, economical way to mix bicarbonate powder with AAMI quality water to create bicarbonate solution. The SDS is capable of supplying up to 3 different acid solutions to the same points of use. The SDS is a self-contained system that uses gravity to distribute concentrate solutions via head tanks remotely mounted to a wall or ceiling.

Once the bicarb solution is mixed and verified to manufacturer's specifications, the SDS can be placed into Transfer Mode of operation for automatic delivery control to the head tank. The bicarb supply is automatically maintained during the treatment day until a low-level alarm sounds indicating that the bicarb solution in the mix tank is nearly empty.

The acid system operates in a similar fashion. The premixed bulk acid solution is supplied by placing the appropriate tank switch into the ON position. Once in the ON position, the acid supply is automatically maintained and delivered to a head tank until the bulk acid supply low level alarm activates.

HOW PSDS WORKS

The Pressurized Solution Distribution System (PSDS) provides semi-automatic mixing of a bicarbonate concentrate powder with supplied AAMI quality water and distributes this solution along with up to three acid concentrates, depending on the model, to hemodialysis patient stations.

The bicarbonate solution is thoroughly mixed in a mix tank before being transferred to a distribution tank for circulation through the distribution loop. The distribution and mix tanks, pumps, plumbing, and controls are connected or located next to and within the PSDS frame.

The PSDS is available in models that can control the distribution of acid concentrate from a bulk storage tank to remote points of use. The acid distribution pumps are located near the bulk tanks with controls centralized on the PSDS frame.

Technical Data

SDS PRODUCT SPECIFICATIONS

Model	Remote Head Tank	
Type	Mix & Distribution	
Capacity (Bicarb Mixing)	70/100 gallons (265/379 liters)	
Capacity (Head Tanks)	10/15/30 gallons (38/57/114 liters)	
Concentrates	Bicarb Only, 1/2/3 Acid(s)	
Electrical	115 VAC, 20 amp, 1Ph, 60Hz	
Tank Size	70 Gallon	100 Gallon
Height ¹	58" (147.3 cm)	58" (147.3 cm)
Width ¹	62" (157.5 cm)	72" (182.8 cm)
Depth ¹	36" (91.4 cm)	36" (91.4 cm)
Installation Dimensions ¹	55" Depth x 92" Width	60" Depth x 102" Width

PSDS PRODUCT SPECIFICATIONS

Type	Mix & Distribution
Capacity (Bicarb Mixing)	100 gallons (379 liters)
Capacity (Head Tanks)	100 gallons (379 liters)
Concentrates	1/2/3 Acid(s)
Electrical	115 VAC, 20 amp, 1Ph, 60Hz
Mix Tank Size	100 gallons (379 liters)
Distribution Tank Size	100 gallons (379 liters)
Installation Dimensions ¹	58"H x 110"W x 48"D

¹ Dimensions/weights are approximate.

* Additional space is required for operator access and bulk acid storage



Tx3® THERAPY SUPPLY STATION

The Tx3® holds all necessary product water and concentrate solutions connection ports in the patient treatment area. Each chase mounted supply station allows for easy access to water, bicarb and/or acid concentrate solutions and drain connections. Segmented compartments help keep connections separated to avoid potential contamination. Ports are labeled and color-coded for identification thereby reducing potential mix-ups.

**CHASE MOUNTED WATER AND
CONCENTRATE STATION SUPPLY**

O₃Z-E OZONE GENERATOR

STANDARD FEATURES

- Ozone injection into water can eradicate all microorganisms, endotoxin and inorganic matter.
- No chemical residues.
- Venturi injector manifold for induction of ozone into water.
- Safety vacuum switch prevents operation of the ozone generator unless the correct vacuum pressure exists.
- Automatic air dryer removes humidity from the air to produce ozone more effectively.
- Air cooled corona discharge tube prevents overheating of the unit.
- Wall-mounted steel case that is electrically isolated.
- Works with either the SDS or PSDS units

PRODUCT SPECIFICATIONS

Model	O ₃ Z-E Ozone Generator
Ozone Output	0-4 gm/hr at 5 LPM dry air
Concentration	1% by weight from dry air
Electrical	115 VAC, 1Ph, 60Hz or 230VAC, 50Hz
Power Consumption	140 Watt
Indicators	No Flow Light (red lens) Ozone Production Light (clear lens) Main Power Light (clear lens) Moisture Indicator (clear cartridge containing silica Gel crystals - changes color)
Cooling	115 VAC 30 cfm (9 cmm) fan
Air Dryer	Two automatically recharged alumina desiccant cylinders, vacuum driven
Dryer Capacity	Up to 8 LPM (16 SCFH) ambient air at 85% relative humidity at 35°C (95°F)
Resulting Dew Point	-40°C (-40°F) or better
Dimensions ¹	Height - 17", Width - 10", Depth - 6" Weight - 16 lbs

¹Dimensions/weights are approximate.

HOW OZONE WORKS

By converting oxygen to a trivalent level (O₃) through the use of electricity, a process similar to the creation of lightning, ozone is generated. Ozone is a powerful oxidant that is an unstable gas that dissipates rapidly. The primary environmental benefit is that ozone leaves no chemical residue; it simply reverts back to oxygen.

Ozone disinfects over a wide pH range and removes biofilm. Ozone causes a chain reaction that oxidizes organics such as bacteria, endotoxins, viruses, as well as, inorganics including iron, manganese, sulfur, and tannins. After ozone eliminates the organics and inorganics, the inert by-products of the process are oxygen, carbon dioxide and activated filterable solids.



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