

FOOD SAFETY MADE SIMPLE



Tablet Chlorination Systems
for the Food Industry

Addressing Today's Food Safety Concerns

Recent outbreaks have brought more government and public scrutiny to food safety practices resulting in greater operational concerns for the food industry. **SES** (Southeastern Systems, Inc.) **Food Safety Specialists** provide custom-engineered systems that chlorinate wash water at multiple points in the food process to kill harmful bacteria. This proactive approach means less worry for you—now and in the future.

SES has developed highly-successful automated chlorination systems for the food industry. Some examples include:

- Poultry
- Red Meat
- Fresh Vegetables
- Tomatoes
- Potatoes
- Citrus Fruit Including Orange Juice
- Pecans
- Potable & Wastewater applications



The Chemical Automation Solution

Since 1990, **SES** has been designing water chlorination systems using Accu-Tab® system technology from Axiall Corporation. The strength of the system is the state-of-the-art chemical automation that precisely controls chlorine levels for safe and effective water treatment. Utilizing *Accu-Tab* chlorinators and calcium hypochlorite tablets, **SES** water chlorination systems maintain a level of chlorine that kills bacteria yet is safe for use on food.

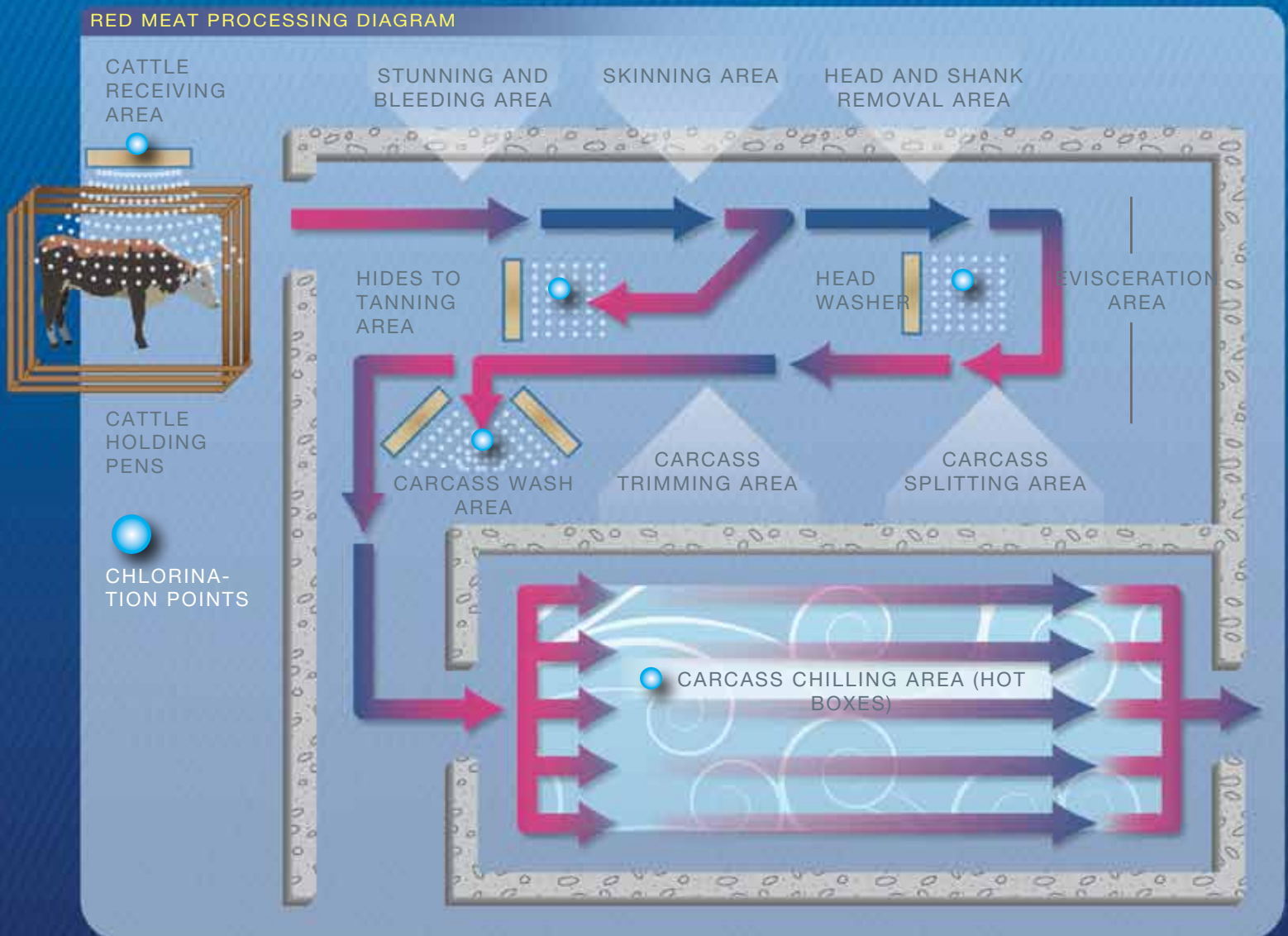
SES chlorination systems minimize the risk of spills and leaks associated with using bleach or chlorine gas. In addition, the self-buffering calcium is less corrosive on equipment. Custom-engineered systems have few moving parts to break or clog, resulting in low maintenance costs and minimal process safety management.

SES operates more than 500 systems worldwide — including many in the highly-regulated poultry industry.



Simple Steps Yield Multiple Payoffs

The tablet chlorination system is easy to install and can be integrated into existing processing lines at multiple points with low capital investment. Once in place, the system runs simply and effectively with little to no maintenance. The diagrams below show examples of multiple chlorination points in Poultry and Red Meat processing plants.



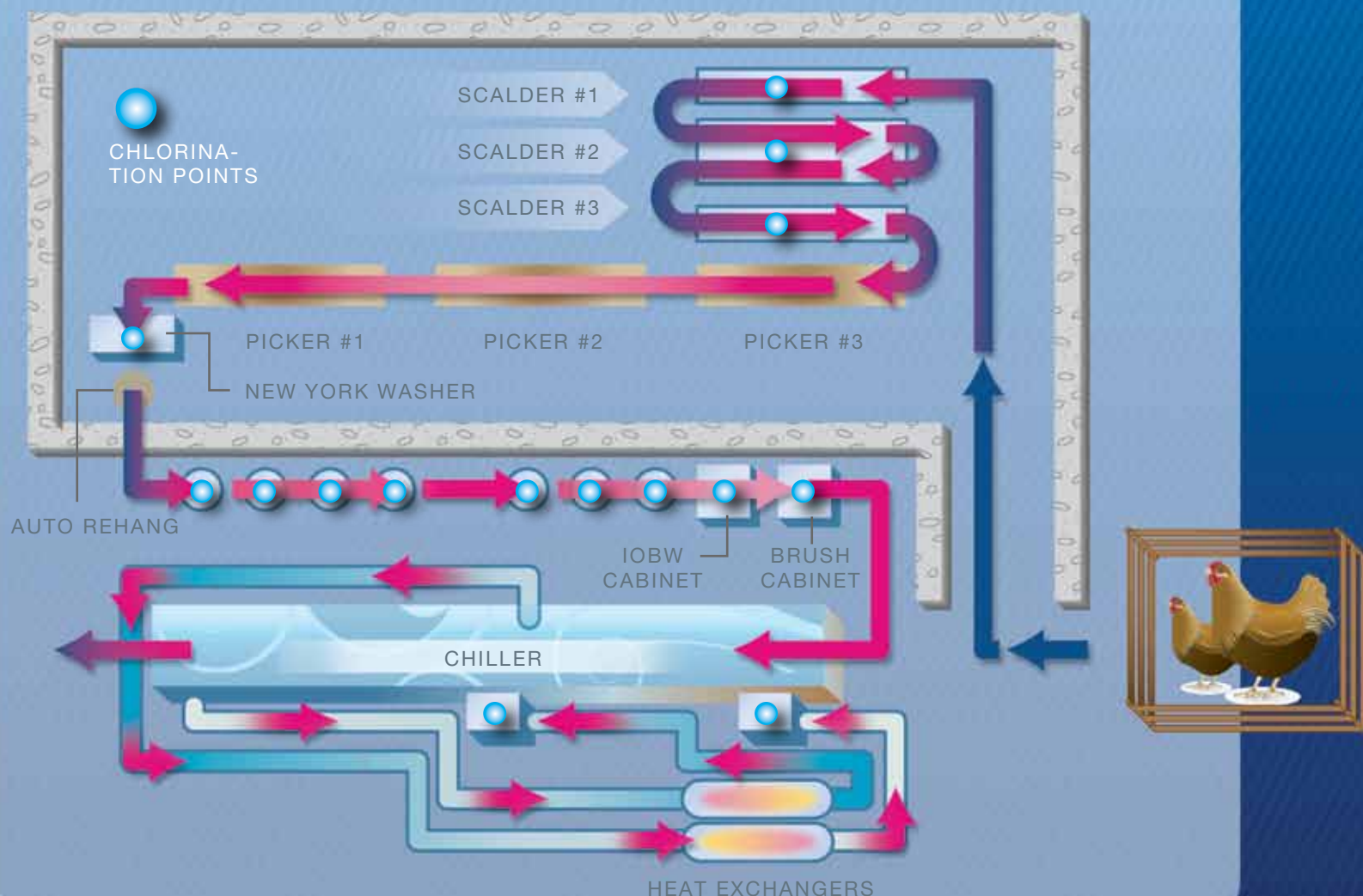
How the System Works



- 1 A side stream of wash or spray water flows through chlorinator.
- 2 Accu-Tab three-inch tablets sit on top of a sieve plate inside chlorinator.
- 3 A control valve (available in manual or automatic) at the inlet allows for precise chlorine delivery.
- 4 Untreated water rises through the holes in the sieve plate and erodes the bottom of the tablets at a predictable rate.
- 5 Water is returned to the system with the appropriate amount of chlorine.
- 6 The chlorinated side stream water meets main water flow where the two mix into a concentrated chlorine solution that can be pumped back into the original mainline or fed into a holding tank or chiller.

The chlorinator automatically stops when water flow is shut off. When the system is not in use, excess water drains off the tablets and into the solution tank to prevent premature dissolving.

POULTRY PROCESSING DIAGRAM



Systems, Engineering and Support— the Complete SES Package

When partnering with SES Food Safety Specialists, you get the patented, trusted technology of the *Accu-Tab* system that is custom engineered for each of your facility's specific applications and supported by the knowledge and expertise of **SES** staff who remain accessible from installation and beyond.

With **SES** as your partner, support includes:

- Quality Installation
- Delivery System Performance Guarantee
- Comprehensive On-site Personnel Training
- Extensive Service Policy
- Worldwide Technical Support
- 24-Hour Emergency Response
- Automatic Reorders of Tablets with Guaranteed On-time Delivery



SES offers the industry's most complete Service Policy so that customers' chlorination systems are not only working, but are operating at peak efficiency at all times.

SYSTEM KNOWLEDGE: No less than two people from **SES**—usually the service technician assigned to your account and your sales associate—are familiar with each installation.

START-UP REPORT: After any new installation is commissioned, the installing technician will complete a Start-Up Report with a detailed description of the installation. This report is distributed to all **SES** personnel responsible for the system with a copy stored in an **SES** Operation & Maintenance manual at your plant.

TECHNICAL SUPPORT: The in-house **SES** technical staff is extremely knowledgeable about system design and installation and experienced in guiding customers' plant personnel over the phone.

EMERGENCY SERVICE: **SES** technicians are on call 24 hours a day, 365 days a year. In the event of an emergency situation that cannot be handled by phone, a technician can usually be onsite within 24 hours of your call.

**At SES, it goes
beyond installation.
We stay involved so
that each system is
operating at peak
performance at
all times.**



The *Accu-Tab* System Advantage

The *Accu-Tab* system is a clear choice for **SES** custom-engineered systems because of its accuracy, safety and simplicity.

SAFER. The *Accu-Tab* system is safer than several alternatives as it:

- Minimizes the safety concerns typically associated with peroxyacetic acid (POAA), chlorine dioxide and bleach.
- Removes the risk of leaks associated with the use of chlorine cylinders.
- Reduces the need for an expensive safety system. Rubber gloves and safety goggles are needed to handle calcium hypochlorite tablets.

SIMPLE. It doesn't get much easier than the *Accu-Tab* system, which:

- Integrates easily with existing systems.
- Requires only one person to add tablets and maintain the system. The unique three-inch calcium hypochlorite tablets are shipped in convenient and easy-to-store 55-lb. pails.
- Has few moving parts, no metering pumps, and no small openings that can clog making for a trouble-free, low-maintenance solution to food safety.

EFFECTIVE. The *Accu-Tab* chlorination system:

- Is an accurate alternative to gas and more consistent than bleach.
- Offers a wide range of benefits that cannot be provided by any other system.
- Provides residual protection to kill bacteria.
- Works with manual testing programs or easily interfaces with most automatic control systems including flow proportion, ORP and chlorine analysis.



Multiple Sizes To Fit Every Job



SES tablet delivery systems are made in a wide variety of sizes to meet any chlorination need or requirement. With few moving parts, the chlorinator systems offer low maintenance and minimize the possibility of spills or leaks.

Accu-Tab tablets offer a more neutral pH level and are less corrosive than other chlorination methods. Only three inches in diameter, the tablets are easily dropped into the chlorinator and allow for easy storage.

The Power of *Accu-Tab* Over Other Systems

GAS

BLEACH

CHLORINE DIOXIDE

PEROXYACETIC ACID

ACCU-TAB SYSTEM

FACTORS

| FACTORS | ACCU-TAB SYSTEM | PEROXYACETIC ACID | CHLORINE DIOXIDE | BLEACH | GAS |
|----------------------------|---|---|---|--|--|
| Safety | Easy to handle, no spills | Spill and leak concerns | Spill and leak concerns | Spill and leak concerns | Major gas leak concerns |
| Charging chemical | Easy to add tablets, only one person needed | Handling of hazardous liquid | Handling of multiple hazardous liquids | Hard to maneuver, heavy drums or lots of small carboys | Two trained persons needed, breathing protection required |
| Material compatibility | More neutral pH, less corrosive | Low pH, very corrosive to many metals | Low pH, very corrosive to many metals | High pH, corrosive | Low pH, very corrosive |
| Convenience | 55-lb. pail of tablets is easy to handle | Hard to maneuver 500-lb. drums or totes | Need to purchase multiple precursor chemicals for ClO ₂ generation | Bleach drums are awkward to handle | Hard to maneuver cylinders, special handling training needed |
| Maintains product strength | Small change over a year | Subject to rapid decomposition and off-gassing | Subject to rapid decomposition and off-gassing | Significant loss in a week | Consistently 100% chlorine |
| Chemical delivery control | Consistent strength makes for easy, reliable control | Loss of strength makes for control difficulty | Delicate balance between precursor chemicals needed for efficient generation | Ever-changing strength makes for control difficulty | Troublesome regulators needed, harder to automate |
| Storage convenience | 55-lb. pails stacked three high, same space as 150-lb. cylinder, no separate room | Heavy drums or totes require large space and possible containment pad | Large space required for generation equipment and chemical storage | Drums or bulk tanks require space and possible containment pad | Separate room with special access needed, fans, scrubbers |
| Auxiliary equipment | No moving parts in chlorinator itself | Troublesome metering pumps required | High capital and maintenance costs associated with complex generation equipment | Troublesome metering pumps required | Eductors, regulators have small orifices prone to plugging |

As easy to adjust as gas and more consistent than bleach, the *Accu-Tab* system automatically delivers the precise level of chlorine you need without special containment measures or elaborate safety equipment.



SES Food Safety Specialists

provide custom-engineered tablet chlorination systems to kill harmful bacteria. The Complete **SES** Package includes patented **S**ystems, custom **E**ngineering and exceptional **S**upport.

Contact your sales associate today to learn how **SES** can work for you.

SES installations featuring the *Accu-Tab* system are certified or approved according to the following:

- NSF Standard 60 and 61 listed for drinking water
- USDA approved uses: 3D, D2, G4, G5, G7 and Q4 for SI tablets
- AWWA Standard B-300
- FDA Approval 21CFR178.1010
- EPA Registration #748-295
- Health Canada Registration Number 24052
- Canadian Food Inspection Agency
- Washington State Department of Agricultural Organic Food Program
- Organic Materials Review Institute



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