KLEEN KRAFT SERVICES

THE ACCOUNTABLE UNIFORM COMPANY®

HACCP PROGRAM

2019

Hazard Analysis and Critical Control Points
For Industrial Laundries

Making Our Product Safe for Our Food Processing Customers

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INTRODUCTION

What is HACCP?

HACCP (Hazard Analysis and Critical Control Points) is a system designed to ensure the safety of food preparation. HACCP is utilized to identify hazards and critical control points where hazards could be present. The HACCP system is a standardized procedure for identifying and controlling these points.

History

HACCP was created by the Pillsbury Company for NASA to provide safe food for astronauts while traveling in space. HACCP Principles were first applied to the food industry in 1971 and have grown to become the accepted methodology for preventing contamination.

Applications

HACCP is focused around possible physical, chemical, and biological hazards that could present a threat to the downstream user of the product. The meat, juice, and seafood industries are regulated by HACCP Principles. All other industries have the option to follow the recommendations and many choose to do so.

Industrial Laundry Application

For the purposes of industrial laundering, HACCP means only one thing to a customer: the prevention of cross-contamination that could impact the customer's product and potentially cause crippling recall of their product.

Kleen Kraft Services has established and follows the seven (7) HACCP Principles in creating, executing, and monitoring our internal HACCP Program.

Kleen Kraft Services HACCP Team			
Name	**Title**	**Responsibilities**	**Skills**
Rick Antman	Director of Plant Operations	ATP Testing, Quality of Finished Product	Over 10 years of experience in Industrial Textile Industry
Bob Halstead	Service Manager	Oversee and manage distribution of garments	Over 25 years of experience in Industrial Textile Industry
Jose Gonzalez	Plant Engineer	Oversee and manage washroom	Over 15 years of experience in the Industrial Textile Industry
Danny Garcia	Norchem Chemical Supply	Maintains chemical formulations for proper cleaning and sanitizing of garments	Professional Background in Chemistry, over 20 years in Industrial Textile Industry
Jeff Moore	Route Supervisor	Manages truck fleet and route representatives. Maintains fleet cleanliness	Over 20 years of Route Experience
Andy Salsberry	Route Supervisor	Manages truck fleet and route representatives. Maintains fleet cleanliness	Over 25 Years of Route Experience

Seven (7) HACCP Principles

Principle 1: Conduct a hazard analysis

- Investigate our processes
- Create a product flow diagram
- Determine where contaminants can occur
- How can we prevent contamination?

Principle 2: Identify Critical Control Points (CCP)

- Identify the critical control points at which we can prevent contamination

Principle 3: Establish Critical Limits

- Identify and establish the critical limit for testing
- How much contamination can we allow to happen?

Principle 4: Establish Monitoring Procedure

- How do we monitor the critical control point?
- How often do we test the garments and rental items?
- How do we document the results?

Principle 5: Establish Corrective Action

- What procedures are used if contamination is found?
- How do we eliminate the contamination?
- Make the product safe and verify through testing procedures

Principle 6: Establish a Verification Procedure

- Hold employees accountable for their assigned duties
- Standardized testing procedures and verify results
- Make sure testing results fall within acceptable established guidelines
- Each day's results will be approved by assigned personnel and plant manager

Principle 7: Establish a Record Keeping System

- Maintain records that prove the program is working
- Make sure policies and procedures are followed
- Product is safe for the end user

Product Description

Kleen Kraft Services provides a HACCP conscious uniform rental service. This uniform program provides to companies that are dependent on food safety a delivery service of hygienically clean garments that are free of bacteria, viruses, and other disease-producing organisms.

The line of work apparel designed for food processing includes shirts, pants, smocks, and lab coats. All garments are without buttons or pockets above the waist in order to avoid potential contamination from a foreign object falling out of a chest pocket into a food supply. Color-coded garments help QA managers better identify workers and visitors who could be contaminating food products by being outside their designated work areas. A color-coded system also segregates high care garments with low care garments.

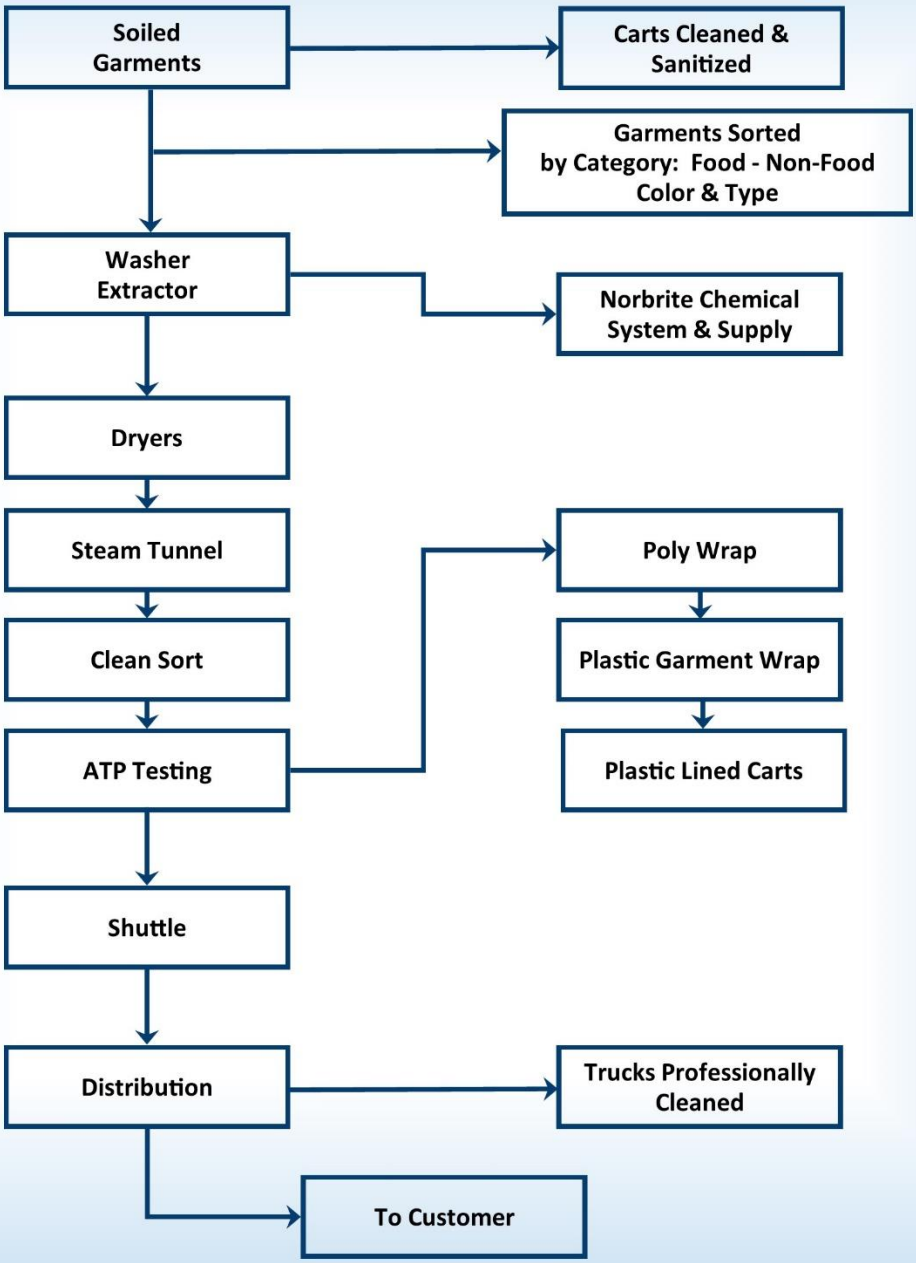
It is important that garments are manufactured using the right materials. The garments that are used are made from 100% spun polyester and other blends for shirts and pants. This material provides a higher level of anti-microbial protection as opposed to a cotton garment. Although cotton is a more comfortable garment to the wearer and offers more “breathability”, bacterial pathogens can easily permeate through the garment and to the wearer.

Keeping proper storage conditions of clean and soiled garments separate is also very important. Kleen Kraft Services provides a locker system to store clean garments. A bulk collection locker is used to dispose of soiled garments. Slope top lockers are required in a food production plant to prevent any unnecessary storage of items on top of the lockers.

Product Description	
Product Name: **Uniform Rental Service**	**Process Name: Wash Cycle**
Special Distribution Control Needed	Lockers are provided for customers to store clean garments. Soil bins are intended for customer to dispose of soiled garments after use.
Packaging Involved with Finished Product	After garments have been cleaned and sanitized through the wash cycle, garments are shrink wrapped or sealed in a plastic lined cart to prevent any contamination.
Water Activity	The water temperature exceeds 160°F during the wash cycle. The wash cycle will not proceed until proper temperature has been met. The wash cycle has a run time of 90 minutes. BioBan is injected in the last stages of the wash cycle. BioBan is a mildewcide to preserve the control of mold and fungi, and prevents the growth of bacteria in industrial laundries.
pH/Titratable Acidity	6.5
Potential for Customer misuse	Mixing Low-Care garments with High-Care garments. Garments are color coded by department to prevent contamination during use at customer's facility.
Potential food safety issues	Non-removal of contaminants, Sanitation of Garments
Recommendations for Preventing, Controlling or Eliminating the food safety issues?	Soiled garments are brought back for sortation. Contaminants such as hairnets, pens, earplugs, razorblades, etc. are removed before garments are put through the wash cycle. Garments are thoroughly inspected and samples are ATP tested before they are sent out for delivery. Additionally, sample garments are sent for third party testing lab for garment audit.

Product Description	
Product Name: **Uniform Rental Service**	**Process Name: Distribution**
Special Distribution Control Needed	Clean garments are lined and sealed in a cart before delivery. Lockers are provided for customers to store the clean garments. Soil bins are intended for customer to dispose of soiled garments after use. This will prevent mixing clean delivered and the picking up of soiled garments
Packaging Involved with Finished Product	Plastic Garment Bag for garments on hangers. Plastic Shrink Wrap for folded garments. All Garments transported in plastic liner in the cart.
Water Activity	All garments and related products are free of any water activity during this process.
pH/Titratable Acidity	6.5
Potential for Customer misuse	Mixing Low-Care garments with High-Care garments. Garments are color coded by department to prevent contamination during use at customer's facility.
Potential food safety issues	Soiled garments mixing with clean garments
Recommendations for Preventing, Controlling or Eliminating the food safety issues?	Effective Distribution protocol for separation of soiled garments and delivered clean garments during distribution. Clean garments are sealed in plastic lined carts to prevent contamination. Soiled garments are transported in a designated area in distribution truck back to the production plant for sortation and sanitation. ATP sample testing is done on a daily basis to eliminate unsanitized garments going back to the customer.

PROCESS FLOW DIAGRAM



Hazard Analysis

Risk of Contamination

As the reform for food safety laws have changed, Kleen Kraft Services must do its part in changing as well. Food safety has shifted from responding to contamination to preventing it. This way of thinking about food safety highlights the Food Safety Modernization Act (FSMA). Conducting a hazard analysis on the risk associated with uniform supply and food safety is of the utmost importance to Kleen Kraft Services. Implementing preventative controls, monitoring the effectiveness of those controls, verifying the effectiveness, and maintaining records of the verification process is essential for our HACCP program. The HACCP team at Kleen Kraft Services has conducted a hazard analysis and put together three critical control points and the appropriate control measures associated with the prevention of food contamination. Removal of contaminants, the sanitation of the garments, and the distribution of the garments are the three critical control points that must be controlled for proper food safety.

The removal of contaminants from soiled garments is a critical process for the cleanliness and sanitation of the garments. Razorblades, hairnets, earplugs, gloves, pens, or knives are all examples of physical hazards that can contaminate a wash load. There are dedicated employees that are assigned the task of removing these items before the garments are put into a washer. Each garment is inspected for these items at the soil sort station. In the unlikely event that a garment has any of these contaminants, the garment will be removed from the clean sort line and washed again. After all the garments have passed through our clean sort line, the garments are either poly wrapped or sealed in a plastic lined cart to avoid contamination after they are washed.

An allergen swab test is conducted on the wash basket prior to the start of another wash cycle. This test provides an assurance that there is no cross contamination of any protein residue in the wash basket. If there is any presence of any allergenic compounds, then there is an 8-minute bleach bath followed by a 3-minute rinse. The wash basket is then retested until it has passed inspection.

There are biological and chemical hazards that may be identified by the HACCP team. Oil, grease, food particles, bacterial pathogens, and/or allergenic compounds can be present in a soiled garment. The wash formulas are specifically designed with food safety in mind. The wash cycle starts out with a rinse temperature of >100°F to break up stains from oil, grease, and food particles. After that rinse, there are several rinses with a minimum temperature of >160°F to kill any bacterial pathogens that might be present on the garments. All the rinses use detergents and bleach to clean and sanitize the wash load. The wash formulas have a wash time of 90 minutes.

After the wash cycle, the garments are run through the steam tunnel. The steam tunnel has a minimum temperature of >285° F. Each garment goes through the steam tunnel for 10 minutes. After the steam tunnel process, the garments go through the clean sort inspection line. Before the garments are wrapped in poly wrap or sealed in a plastic lined cart, random garments are pulled from the clean sort line for ATP testing. Adenosine triphosphate (ATP) cannot be produced or maintained by anything but a living organism. The purpose of the ATP testing is to show how much biomass is on the garment. If there is no biological activity on the garment, then there is no medium for microbiological proliferation. No biological contamination, no microbial growth. The ATP testing is monitored by the Hygiena SystemSURE Plus® luminometer.

When ATP is brought into contact with the luminometer, light is emitted in direct proportion to the amount of ATP present on the garment. A Relative Light Unit (RLU) is assigned based on the amount of light emitted from any potential biomass remaining on a garment. Kleen Kraft Services uses a Pass/Fail inspection system. For a garment to receive a pass there must be no more than 10 RLUs. Any garment that receives 11 RLUs or more is put through the wash cycle again and retested.

Kleen Kraft Services also sends out randomly selected food processing garments to a Third-Party Lab every month to conduct testing. There are five tests that are done: Aerobic Plate Count, Listeria, Salmonella, Yeast, and Mold.

The third critical control point is the distribution of the garment. There are physical and biological hazards that have been identified during this process. Cross contamination of soiled and clean garments in the same vehicle, pests that can enter the vehicle or a cart full of clean garments, and also the cleanliness of the vehicle itself can play a part in food safety. Kleen Kraft Services has identified these hazards and has taken the proper steps to avoid any contamination.

All of the Route Representatives have been trained on how to avoid cross contamination of soiled garments and clean garments. Before any clean garments have been placed in the vehicle, all carts being delivered to a food-processing customer have been lined with plastic and sealed. The clean garments will not be opened until they are delivered to the customer. All soiled garments that are removed from the customer are put into a separate cart and placed in a specific area in the vehicle where there are no clean garments next to it.

As mentioned in the Standard Sanitation Operating Procedures, Kleen Kraft Services has an Integrated Pest Management program to prevent pests from contaminating the vehicles and the carts where clean garments are placed. There is also a weekly washing service that cleans the vehicles to prevent contamination. The carts are washed and sanitized daily. All carts and vehicles are inspected by the Route Supervisors before they are put into service.

Our customers should expect and demand that Kleen Kraft Services provide the proper caution and risk assessment as their uniform provider. A garment that is worn inside a food processing plant by our customers is considered a “food surface”, and Kleen Kraft Services must treat the garment as an integral part of the food safety process.

Critical Control Points	
Potential Hazard	Non Removal of Foreign Objects
Cause	Razorblades, Pens, Hairnets, Gloves, etc.
Consequence (Severity)	Garment will not pass inspection
Frequency (Likelihood)	Not expected to occur
Reason for Decision	Garments are in close proximity with food production. Garments must be treated as a food surface. Any bacterial pathogens, foreign objects, or pests found on a garment can be a food safety issue.

Control Measure	Contaminants removed upon inspection during Clean Sortation. Garments are poly wrapped and sealed in a plastic lined cart.
Corrective Action	Contaminants are removed and garment will be rewashed and inspected.
Critical Limit	Zero tolerance for any foreign objects found in garments. Garments will be re-inspected and re-washed.

Critical Control Points	
Potential Hazard	Sanitation of Garments
Cause	Oil, Grease, Food Particles, Bacterial pathogens, Allergenic compounds
Consequence (Severity)	Garment cannot go to customer if it is not properly cleaned and sanitized for food processing.
Frequency (Likelihood)	Not expected to occur
Reason for Decision	Garments are in close proximity with food production. Garments must be treated as a food surface. Any bacterial pathogens, foreign objects, or pests found on a garment can be a food safety issue.

Control Measure	Proper wash formulas. Wash temperatures >160°F. Steam tunnel >285°F. ATP testing. Clean sort inspection. Third-Party garment audit.
Corrective Action	If garment does not pass inspection, garment will be rewashed and inspected again before it is delivered to customer. If garment contains a large amount of biomass during ATP testing, garment will be rewashed and recorded in ATP logbook.
Critical Limit	All garments relating to food production are washed in the correct wash formula with the correct temperature. Wash cycle will not start until this criteria is met. Norflow chemical system monitors these 2 factors.

Critical Control Points	
Potential Hazard	Distribution of Garments
Cause	Cross contamination of soiled and clean garments in vehicle, pests contaminating clean garments.
Consequence (Severity)	High
Frequency (Likelihood)	Not expected to occur
Reason for Decision	Garments are in close proximity with food production. Garments must be treated as a food surface. Any bacterial pathogens, foreign objects, or pests found on a garment can be a food safety issue.

Control Measure	Route Reps are trained to place soiled garments in plastic lined carts and then seal the carts. Cart is placed in a specific area in the truck to avoid cross contamination. Carts are sanitized and inspected by our Route Supervisor before they are put in service. Our prerequisite Pest Control Program is another measure to avoid any contamination of garments.
Corrective Action	Vehicle will not be put into service until it is properly cleaned. If vehicle is harboring any pests, the Route Supervisor will inspect vehicle before it is put into service. The Pest control company will be called to eradicate any pest issue.
Critical Limit	Pest control program must be up to date. Vehicles must be cleaned and inspected by Route Supervisors. Carts must sanitized on a daily basis.

Monitoring Critical Control Points

CCP: Distribution

Control Measures	Verified By	Records
Carts are sanitized and recorded according to the Sanitation Standard Operating Procedures	Director of Plant Operations	Cart Cleaning Log
Pest control is monitored and recorded in the Integrated Pest Management Program	Director of Plant Operations	Integrated Pest Management Log
Vehicles are professionally cleaned weekly and recorded.	Route Supervisors	Vehicle Inspection Log

Monitoring Critical Control Points

CCP: Non Removal of Contaminants

Control Measures	Verified By	Records
Contaminants removed during soil sortation	Washroom Attendant	Washroom log kept to show which contaminants were found in wash cycle
Garments are sealed in sanitized, plastic lined cart to prevent contamination of garments after the wash cycle.	Route Supervisor	Training manual for route representatives

Monitoring Critical Control Points

CCP: Sanitation of Garments

Control Measures	Verified By	Records
Norbrite chemical supply system is dispensing the correct wash formulas for the sanitation of the garments. Wash cycle won't start unless there is correct detergents and correct water temperature.	Norchem Chemical Supply	All wash formulas and wash time are recorded on the Norflow software program
Weekly maintenance check on steam tunnel for proper operation. Steam tunnel must be operating at a temperature level of >285°F.	Director of Plant Operations	Log book is updated weekly for timely maintenance
Testing for biological contamination using luminometer. Garments must pass ATP inspection with a Relative Light Unit with an upper limit of 10. Garment will be rewashed and then retested before put into service. If garment does not pass again, garment will be replaced.	Director of Plant Operations	ATP testing log book
Third-Party Audit of Garments	Director of Plant Operations	Certificate of Analysis from independent testing laboratory
Clean sort inspection of garments.	Director of Plant Operations	Employees are trained to inspect garments as they come out of the steam tunnel

Sanitation Standard Operating Procedures

Wash Formulas:

- There are two factors in the proper sanitation of garments to prevent contamination during the wash cycle.
- Factor #1: Wash formulas have been engineered to produce hygienically clean garments that are free from microbial contamination due to bacteria and viruses.
- Factor #2: An appropriate water temperature during the wash cycle is essential to kill any microorganisms on the garment. All wash formulas require a water temperature of a minimum of 160° F.
- The NorFlow software program monitors and records proper water temperature and the detergent injection system.

Carts:

- All debris is removed (ex: razorblades, earplugs, hairnets, pens, masks, gloves)
- Pressure washed at a minimum of 100° F to remove residues such as food particles, grease, dirt, bodily fluids, and oils.
- Detergent is used to sanitize the carts.
- A record book is kept to insure that our carts are sanitized before any clean garments are placed inside.
- For an extra measure of safety; carts are lined with a plastic cover and sealed before garments are delivered to a food processing plant.

Folding Tables:

- Before the start of each shift, all folding tables are wiped clean of any potential contaminants such as loose thread and button snaps. Tables are then sanitized with a detergent to prevent any bacteria or virus contamination.

Lunch Area:

- No food is left out in the open.
- Tables and counter tops are wiped daily.
- Lunch area is a separate room with closed doors to prevent roaches and pests from entering.

Steam Tunnel:

- The steam tunnel is another measure of avoiding contamination of garments. The steam tunnel operates at a temperature of 285° F.
- The lint traps are removed and cleaned weekly.
- Every panel on the steam tunnel is cleaned to remove excess lint that may get on garments. This will avoid contamination of garments.

Pest Control Program

Objective:
As a prerequisite for our HACCP Program at Kleen Kraft Services, we have implemented an Integrated Pest Management Program to prevent harborage or any transportation of pests.

Personnel Included:
HACCP Team and Pest Control Company

Pest Control Program Components:

Avoiding Harborage:

1. Facility will be cleaned on a daily basis to avoid any debris, food, water, etc. that might attract any pests.
2. Transportation vehicles and carts will be inspected by our HACCP Team to ensure proper hygiene is practiced at our customers' facility.
3. Lunchrooms, restrooms, and any other area will be inspected daily and documented in our pest control log.
4. Plumbing, doorways, roof, landscaping, and structural damage will be maintained by our engineering department to minimize harborage of pests.

Documentation:

1. Scope of service will be provided by our Pest Control Company.
2. Map of bait stations and traps.
3. Copy of all pesticides used that are approved by the USDA- MSDS Sheets.
4. Log Book will be maintained by the licensed service technician and updated on each visit.
5. Pest Control Company will provide a copy of Liability Insurance, County of Los Angeles Agricultural Pest Control Registration, and License number of service technician.
6. Bi-weekly sanitation reports and pest sightings will be documented in the logbook.
7. Based on bi-weekly reports, corrective action (if any) will be taken by Kleen Kraft Services or the Pest Control Company.

Monitoring:
Any pest sightings will be documented in the Pest Sighting Log book maintained by Kleen Kraft Services daily. Thorough inspection of facility will be done on a daily basis. Upon pest sighting, Kleen Kraft Services will notify Pest Control Company to eradicate pest.

Maintenance:
If infestation occurs, the maintenance department will clean and sanitize area with proper cleaning detergents provided by the designated chemical supply company.

Reporting:
All pest and rodent sightings will be documented on our Sighting Log. The Pest Control Company will be notified and there will be immediate corrective action.

Luminometer, Testing Method

SystemSURE Plus® is the next generation of the world's best-selling ATP hygiene monitoring system. This new system uses state of the art electronics with improved functionality, but still maintains its small hand-held design.

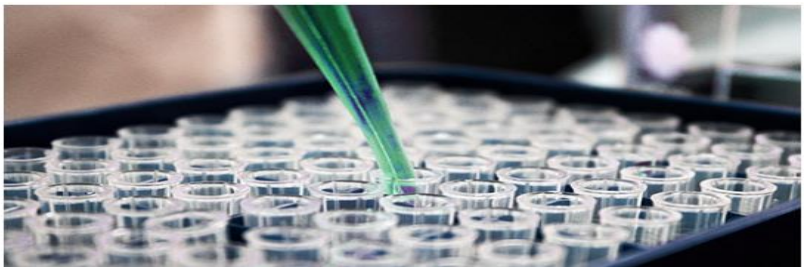
SystemSURE Plus® measures adenosine triphosphate (ATP), the universal energy molecule found in all animal, plant, bacteria, yeast, and mold cells. Residues, particularly food or organic residue, contain large amounts of ATP. When left on a surface, residues can harbor and grow bacteria, cause cross-contamination, develop biofilm and many other problems that compromise product quality.

Microbial contamination contains ATP, but in small amounts. After cleaning, all sources of ATP should be significantly reduced. When ATP is brought into contact with Hygiena's SystemSURE Plus® testing device, light is emitted in direct proportion to the amount of ATP present. The system measures the amount of light general and provides information on the level of contamination in just seconds. The higher the reading, the more contamination present. ATP testing is a universally recognized tool used by large companies for measuring the hygienic status of surfaces and water in order to ensure product consistency and safety.

Testing for proteins, biofilm, fungus, and bacterial contamination

Third-Party Garment Testing for Extra Safety

Kleen Kraft uses an independent third-party lab that is State of California ELAP (Environmental Laboratory Accreditation Program) and ISO 17025 accredited. We work with you, our customer, to ensure that your garments meet the most stringent testing requirements.



TO:

Kleen Kraft Services
P.O. Box 91-1209
Commerce, CA 90091

Certificate of Analysis

COA #: [redacted]
COA Date: 04/23/2019
Sample Received: 04/18/2019

Laboratory Results

Sample Description: Lab Coat - White #0900 1-113 #24

FML#: [redacted]
Condition Received: Good
Temp. Received: 21.0C

Analysis	Result	Units	Method Reference	Test Date
Aerobic Plate Count	<10	cfu/swab	AOAC 966.23	04/18/2019
Listeria genus - ELFA	Negative	/swab	AOAC RI 981202	04/18/2019
Mold	<10	cfu/swab	FDA BAM, Ch. 18, 7th Ed	04/18/2019
Salmonella - SPT	Negative	/swab	AOAC 2013.01	04/18/2019
Yeast	<10	cfu/swab	FDA BAM, Ch. 18, 7th Ed	04/18/2019