



Knowledge-Based Services



The Diversey hygiene business offers solutions tailored to fit your needs, backed by expert support – including our Knowledge-Based Services portfolio.

- Diversey is enabling access to our full portfolio of solutions in a way that addresses your needs.
- No matter the size of your facility, Diversey consistently delivers a range of hygiene solutions that can be tailored to fit your specific needs and streamline your production processes.
- Diversey hygiene solutions help you protect your reputation and brand with solutions engineered to reduce food safety risks and enhance operational efficiency.



OPERATIONAL EFFICIENCY



FOOD SAFETY

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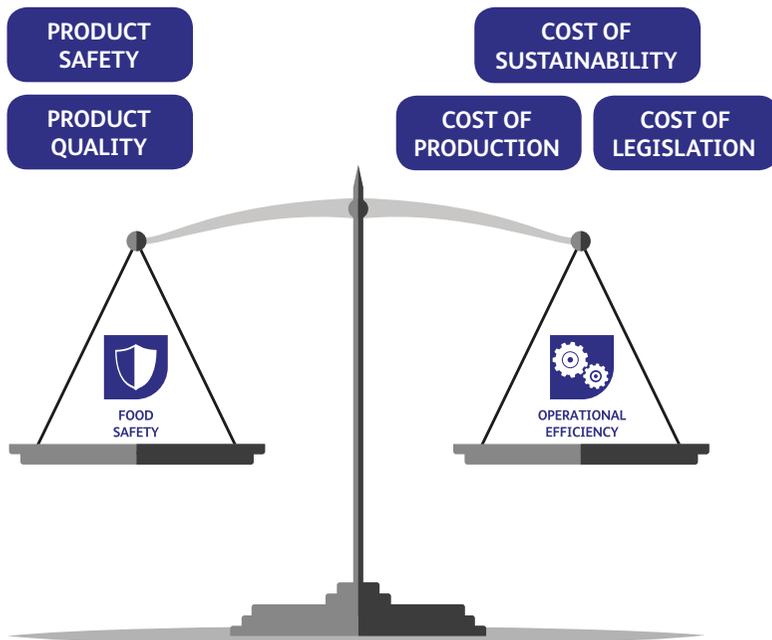


Diversey Knowledge-Based Services

Today, and increasingly in the future, food and beverage processors must measure key performance indicators (KPIs) to be competitive to run operations efficiently, to meet changing environmental demands and food safety standards, and to be responsible brand stewards.

But with so much data available how can you capture and use this KPI data to improve efficiency, food safety and drive profitability?

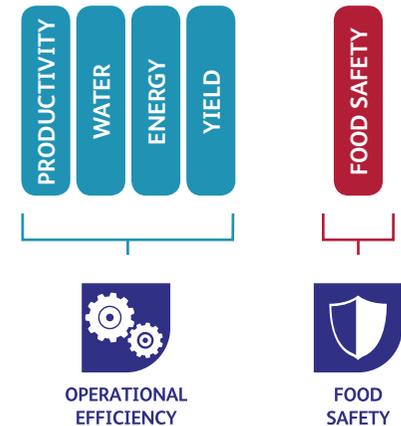
The challenge to food and beverage manufacturers is how to produce quality and safe product whilst reducing operational costs, in order to stay competitive.



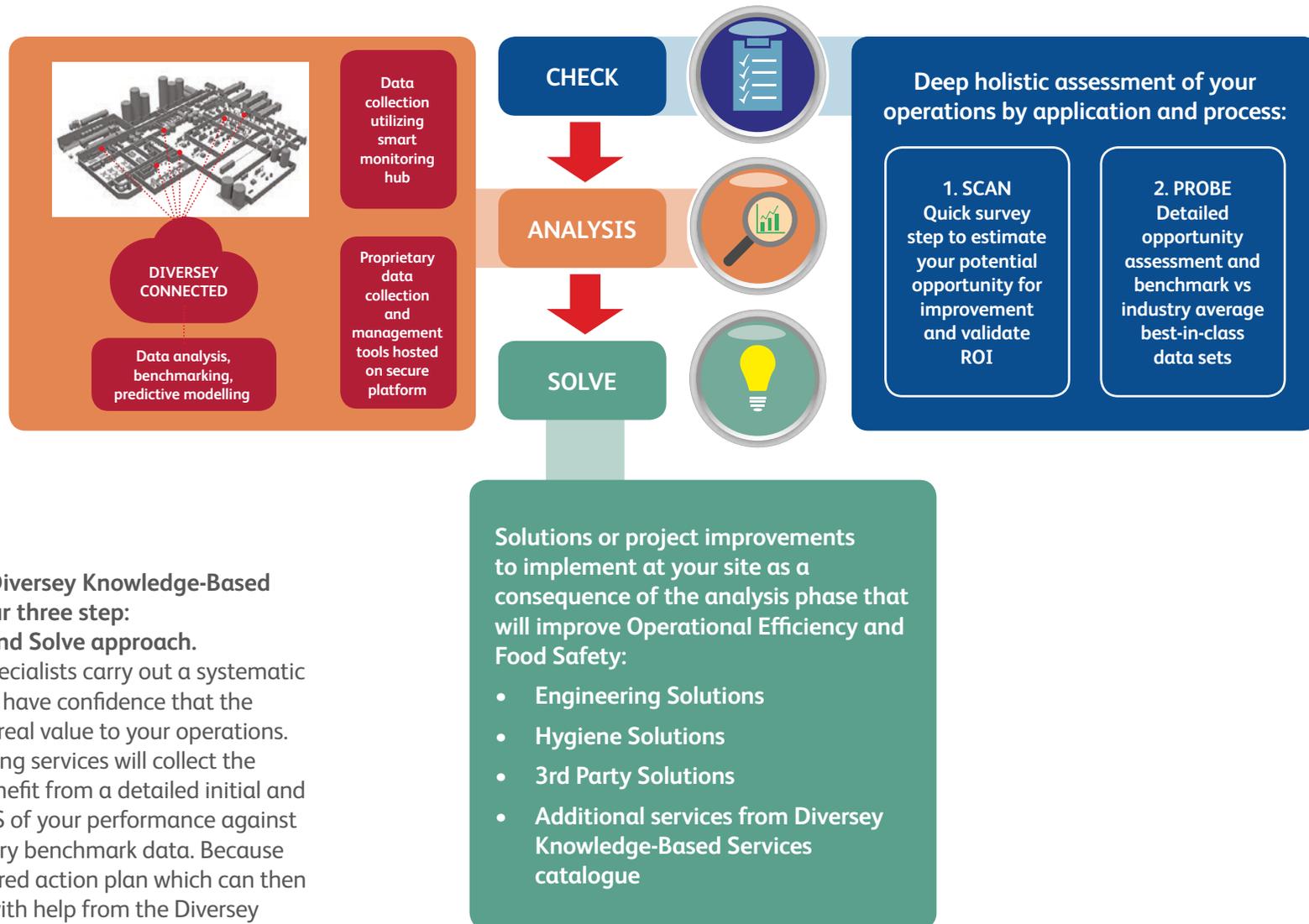
Introducing a suite of services to help you achieve your goals: Diversey Knowledge-Based Services

A holistic approach to constantly measure, monitor and improve operational efficiency and food safety throughout your operations.

The portfolio of Diversey Knowledge-based Services address key industry challenges under five core pillars of focus; Productivity, Water, Energy, Yield and Food Safety. All have a common goal of continually improving Food Safety and Operational Efficiency in Food and Beverage processing.



Diversey Knowledge-Based Services



Process

The portfolio of Diversey Knowledge-Based Services utilise our three step: **Check, Analysis and Solve approach.**

Our application specialists carry out a systematic CHECK, so you will have confidence that the service will deliver real value to your operations. Then, our monitoring services will collect the data for you to benefit from a detailed initial and ongoing ANALYSIS of your performance against historic and industry benchmark data. Because the result is a tailored action plan which can then be implemented with help from the Diversey Applications team, you'll be able to SOLVE critical challenges that will help you make the biggest impact on improvements.

Diversey Knowledge-Based Services Index



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P W E F



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P W E F



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P W E F



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F

Core pillars:

| | | | |
|--------------|---|-------------|---|
| PRODUCTIVITY | P | FOOD SAFETY | F |
| WATER | W | | |
| ENERGY | E | | |
| YIELD | Y | | |





BWCheck™ ✓

Challenge

The recovery and reuse of glass and plastic bottles is one method of reducing waste in the food and beverage industry. However, to ensure that the returned containers are fit for re-use, you must use significant resources such as energy, water, and chemicals in your bottle washing process. A Diversey study recently found that in 50% of cases, one or more of these inputs were being over-utilised leading to wasted resources and unnecessary costs*.

In addition, your returnable bottle fleet is a significant investment, which needs to be continually replaced when bottles come to the end of their lifespan. Typically, your bottle life will range from 20-40 trips depending on a number of factors. Optimising the bottle washing process can increase bottle life by 25%, helping to reduce your overall glass consumption.

Solution

Using Diversey BWCheck we will help you to measure your use of utilities, chemical and time in the bottle washing process, resulting in an action plan that can deliver immediate returns in productivity and utility savings. In many cases, implementing changes as a result of a Diversey BWCheck also helps improve process efficiency, hygiene standards and can even extend the life of your bottle fleet.

Value

With Diversey BWCheck you can:



OPERATIONAL
EFFICIENCY

- Determine whether incremental improvements will improve efficiency and be a viable option to reducing the total cost of operation
- Prioritize areas of improvement and take action
- Benchmark your business against industry performance using Diversey BWCheck's analytic tools
- Ensure that the chemical solution in place is suitable for the soils present
- Limit wear to your glass while ensuring a consistent, repeatable clean

50%

of bottle washers
are over-using
resources



Process

Improve your cleaning results, optimise resource use and extend the life of your bottle fleet with Diversey BWCheck.

With Diversey BWCheck's focus on the technical, environmental, and economic optimization of CIP installations:

- We will help you discover if your bottle washer is over- or under-performing and determine whether a full Diversey BWCheck will result in meaningful improvement.
- Our service team will conduct a detailed probe into the bottle washer to assess the system design, audit your current cleaning procedures, review the sustainability impact of the cleaning chemistry, and monitor utility usage.
- As necessary, we will conduct additional assessments into the cleaning result, including compliance with microbiological standards and address specific soils or allergens.
- You'll receive an analysis benchmarking your performance against industry standards and a detailed report identifying areas of improvement.

Following the Diversey BWCheck, you'll receive recommendations based on four pillars:

- Effective and efficient hygienic design
- Cleaning efficiency
- Water, energy and chemical efficiency
- Time and usage efficiency

Your operational efficiency and total cost of ownership will be positively impacted as a result of Diversey BWCheck's clear, structured process that identifies and prioritises improvement actions.

CASE STUDY



OPERATIONAL EFFICIENCY

Location:

Brewery in India processing 330 ml bottles

Challenge:

Poor label removal

Solution:

The initial Diversey BWCheck identified improvements beyond the chemicals being used to optimise the bottle washing efficiency. The implementation of the recommended corrective action improved washer efficiency 60% and improved label removal 20%.



TIME

60%
improvement in
washer efficiency



SPEED

27%
increase in
bottles per hour



CHEMICAL

10%
reduction in
caustic use



PERFORMANCE

20%
improvement in
label removal

*Bottle washer data based on Diversey experience. All facilities are different. The impact for your site will be calculated as part of an initial Diversey BWCheck scan.



CIPCheck™ ✓

Challenge

While your Cleaning in Place (CIP) systems were designed to automate your cleaning process and efficiently clean and disinfect your enclosed processing equipment, roughly 75% of CIP systems run un-validated, using the original settings.* That means your system probably hasn't been fine-tuned to perform optimally for your plant, including needed modifications to accommodate any production process changes that occurred since installation. Therefore, you may not be getting the full operational benefits from your CIP system investment

Solution

Using Diversey CIPCheck, you will benefit from our detailed analysis of your usage of utilities, chemicals and time to identify areas of improvement. Based on human inspection, and short term data collection and analysis performed by trained CIP specialists, Diversey CIPCheck is the baseline for CIP validation and will make a positive impact on available production time, waste, energy costs, and environmental issues. Assured food safety and increased production will benefit both peace of mind and profitability.

Value

With Diversey CIPCheck you can:



OPERATIONAL
EFFICIENCY

- Determine whether incremental improvements such as balancing out the line capacity or adding a recovery tank to re-use water will improve efficiency
- Optimize CIP design, energy efficiency and process automation
- Prioritize areas of improvement and take action
- Improve your steam utilization
- Benchmark your business against industry performance using Diversey CIPCheck's analytic tools



FOOD
SAFETY

- Ensure your chemical solution is suitable for your soils so that you can deliver a repeatable clean with each cycle

75%

of CIP cleanings run un-optimised, using original settings



CIPCheck™ ✓



Process

Improve your cleaning results, maintain microbiological standards, and safeguard your food safety with Diversey CIPCheck.

With Diversey CIPCheck's focus on the technical, environmental, and economic optimization of CIP installations:

- We will help you discover if your CIP system is under-performing and determine whether a full Diversey CIPCheck will result in meaningful improvement.
- Our service team will conduct a detailed probe into the CIP system to assess the system design, audit your current cleaning procedures, map the current water, energy, and chemical usage, and measure cycle time.
- As necessary, we will conduct additional assessments into the cleaning result, microbiological standards, and specific soils or allergens.
- You'll get a an analysis benchmarking your performance against industry standards and a detailed report identifying areas of improvement.

Following the Diversey CIPCheck, you'll receive recommendations based on four pillars:

- Effective and efficient hygienic design
- Cleaning efficiency
- Water, energy and chemical efficiency
- Time and usage efficiency

Your operational efficiency and total cost of ownership will be positively impacted as a result of Diversey CIPCheck's clear, structured process that identifies and prioritises improvement actions.

CASE STUDY



OPERATIONAL EFFICIENCY

Location:

Large dairy processing plant, Netherlands

Challenge:

The CIP process was recognised as under optimised.

Solution:

The Diversey CIPCheck highlighted areas of substantial improvement. The subsequent monitoring and project to optimise the process delivered improved efficiency and resource use as well as cost savings.



ENERGY

13,393
kW saved



WATER

90,000
cubic metres saved



CHEMICAL

1.26M
kg saved



COST

€600k
annual savings

*CIP benchmark data based on Diversey experience. All facilities are different. The impact for your site will be calculated as part of an initial Diversey CIPCheck scan.



CIPTEC

Challenge

Your Cleaning in Place (CIP) system plays an essential role in ensuring the cleanliness of your processing equipment. But how do you know if you are cleaning enough or even too much? Traditional CIP metrics measure the flow, conductivity and temperature, which can indicate that the cleaning cycle has met the predefined parameters, but cannot indicate the level of clean.

CIP cycle times are based on empirical averages, generally resulting in cleaning cycles that are too long but in some cases they can also fall short, impacting the safety of your product or the efficiency of your operation. The reality is that the majority of CIP systems are over-cleaning by up to 50%*

Although there is a lot data parameters available, it is typically scattered in multiple systems and is hard interpret. Especially as it lacks of real-time monitoring of cleanliness.

Solution

Diversey CIPTEC harnesses the power of light to monitor your CIP system in real time. The unique CIPTEC Spectrophotometer measures light traveling through the liquids inside your CIP system; Measuring the volume of soil in and the cleaning chemical level in your final rinse stage to accurately determine the effectivity of CIP stages and the removal of soils.

Utilising this data along with the conductivity, flow and temperature during the wash, our statistical data analysis methods calculate the optimal regime to eliminate overwashing, while maintaining a safety margin at 6 sigma level.

Value

With Diversey CIPTEC you can:



OPERATIONAL EFFICIENCY

- Optimise the cleaning cycle, reducing the water, energy and chemical used unnecessarily
- Improve the recovery of product by measuring more accurately the soil and chemical level
- Return valuable processing time to production by shortening the overall CIP time
- Reduce the waste water generation, CO₂ emissions and COD loading



FOOD SAFETY

- Ensure the correct level of hygiene is achieved during your CIP process without under or over-cleaning
- Improve quality control monitoring of the CIP system, in real time.

The majority of CIP systems are over-cleaning by

50%*





CIPTEC

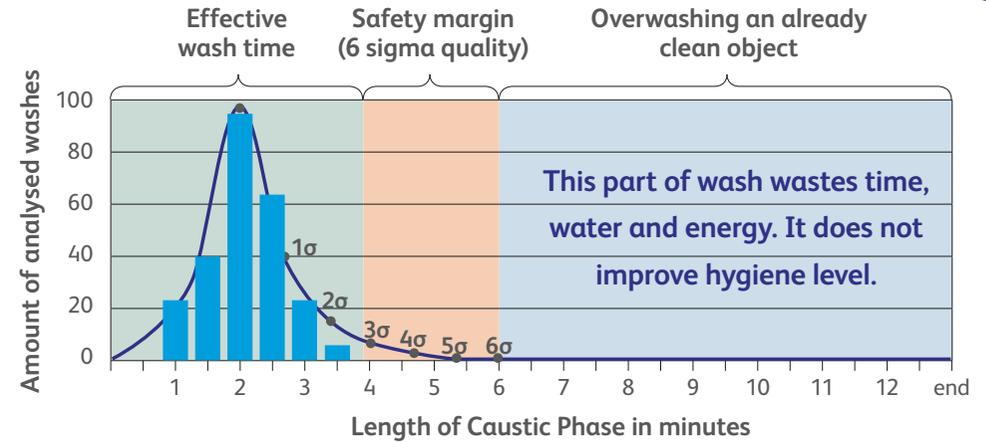
Statistical safety through continuous remote monitoring

With CIPTEC your complete CIP system is analysed continuously and statistical algorithm used to refine the cleaning cycle to the optimum level.

CIPTEC system gathers data from the entire process. Including the spectrophotometers as well conductivity, flow and temperature during the washes. This data enables analysis of different phenomena of the wash and the discovery of anomalies that can cause variance to results.

CIPTEC follows a 5 step process;

1. Scan - Identifies opportunities within your CIP process for base line improvement
2. Pre-Study - A study is carried out to enable the results of the analysis stage to be guaranteed
3. Probe - Installation of data monitoring equipment
4. Analysis - working with the data to derive the optimum solution for your CIP system and the product you manufacture
5. Solve, monitor and improve - The continuous measurement and monitoring of the CIP system.



Example: Analyses of the efficient length of all CIP washes in a product tank in a year.

CASE STUDY



OPERATIONAL EFFICIENCY

Location:
Dairy plant producing 200 million litres annually

Challenge:
Optimising the CIP process to unlock additional capacity.

Solution:
6,600 CIP hours returned to production time.



TIME

6,600

hours reduction in CIP time



WATER

33k m³

water & effluent saving



PRODUCTIVITY

38k l

product recovery saving



ENERGY

1,900

MWh energy & electric saving



COST

€560k

total saving

*Data from over 200 sites globally show that majority of washes can be cut to half of the original times.



DryFormance™

Challenge

Effective high speed conveying of cartons, cans, bottles and kegs between filling and packaging machines is one of the most important requirements of running an efficient packaging line. To assist the movement of packages, conveyor lubrication is used. Traditionally, a soap and water 'wet lube' solution has been used. But, this method can be water intensive, having a negative impact on your water:product ratio, resulting in wet, slippery floors in the production area and creating the ideal environment for biological growth

Solution

Diversey DryFormance combines water-free conveyor lubrication with packaging line engineering excellence to deliver against water reduction and health and safety targets as well as improving your overall operational efficiency and helping you to meet your sustainability commitments.

Value

With Diversey DryFormance you can:



OPERATIONAL
EFFICIENCY

- Reduce fallen, wasted containers. The combination of the Diversey DryFormance distribution system, application method and specially formulated lubricant allows the precise control of package / container flow during the packaging process.
- Improve Asset Care. The life-span of plastic conveyors belts running with a Diversey DryFormance system is dramatically increased, extending the life by at least 100%. Additionally, because the conveyors operate under dry conditions, mechanical components will degrade slower, with replacement frequency decreasing and emergency shut-down time reduced.
- Improve Health, Safety and Hygiene. In the food and beverage industry some 90% of slips result from wet or contaminated floors. Using Diversey DryFormance eliminates the use of water for conveyor lubrication and creates a safer, more hygienic working environment.
- Reduces your water consumption by up to 100%, reduces effluent load and reduces strain on your conveyor motors which in turn reduces energy consumption.
- Reduced CO₂ emissions – The reduction of power consumption, Waste-water treatment and the recycling and replacement of wasted packages has a direct impact on CO₂ emissions



FOOD
SAFETY

- Reduce the chemical cleaning requirement and removal of biological growth, especially in PET packaging lines.

100%
reduction in water used for
conveyor lubrication*



DryFormance™

Process

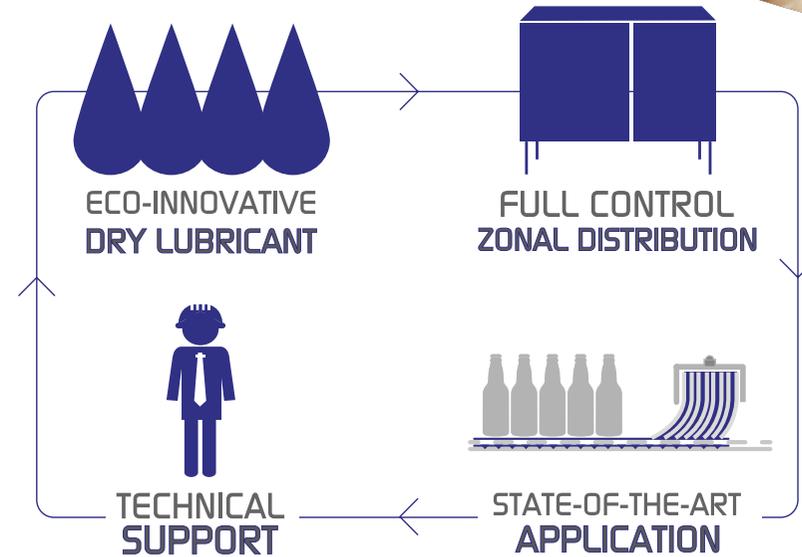
With Diversey DryFormance your conveyor lubrication system becomes one less thing for you to think about.

A Diversey DryFormance installation provides the full management of your conveyor lubrication system and includes; servicing, lubricant, spare parts and maintenance, all built into one monthly service charge.

Our specialists will audit your current conveyor lubrication system, including a review of all conveyors, measuring the CoF and motor temperatures to understand the methodology of the line, its characteristics and define the areas where we will deliver real benefits.

Following the audit a full Diversey DryFormance proposal will be generated outlining the system required, the operational benefits you can expect to achieve and the return on your investment.

On agreement of the project Diversey DryFormance engineers will install and commission the new conveyor lubrication system to a schedule that minimises impact to your production schedule.



CASE STUDY



OPERATIONAL EFFICIENCY

Location:
Brewery can line, UK

Challenge:
A need to improve safety in the production hall where floors were covered in wet lube.

Solution:
Over 95% water reduction from seamer outfeed to packers.



SAFETY

0 slip
contributed to lubrication



WATER

3M
Over 3 million litre reduction



PERFORMANCE

100%
improvement in plastic belt life



2%
improvement in package stability



Challenge

Product change-overs between batches are a major cross contamination risk. The hygiene of fillers is critical to ensure that the quality and food safety of your finished product is not compromised. In order to maintain the high hygienic level of this sensitive area in an efficient, effective and sustainable way, automatic cleaning and disinfecting systems are an indispensable requirement for all filling facilities.

Cleaning your fillers eats into your available production time and, although critical, impacts overall plant efficiency. Our experience shows that around 30% of the cost of filler cleaning is attributed to time and labour, but in practice audited systems show a much higher percentage prior to optimisation. We have found that under-optimised filler cleaning systems have the potential to return 15-50% of the cleaning-time to production - increasing your efficiency and reducing total costs*.

Solution

Using Diversey FillerCheck, you will benefit from our detailed analysis of your usage of utilities, chemicals and time to identify areas of improvement. With this information our team will develop and implement an action plan to deliver immediate productivity gains and utility savings while maintaining – and in many cases, improving – hygiene standards.

Value

With Diversey FillerCheck you can:



OPERATIONAL
EFFICIENCY

- Optimize filler cleaning system design, energy efficiency and process automation
- Prioritize areas of improvement and take action
- Benchmark your business against industry performance using Diversey FillerCheck's analytic tools



FOOD
SAFETY

- Ensure your chemical solution is suitable for your soils so that you can deliver a repeatable clean with each cycle
- Reduce potential cross contamination risk during product change-over

15-50%
cleaning time reduction*





FillerCheck™ ✓

Process

Improve your cleaning results, maintain microbiological standards, and safeguard your food safety with Diversey FillerCheck.

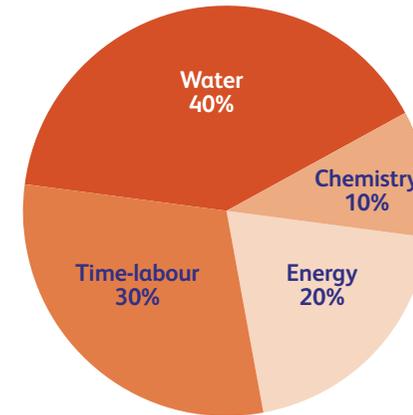
- We will help you discover if your filler cleaning process is underperforming and determine whether a comprehensive Diversey FillerCheck will result in meaningful improvement.
- Our service team will conduct a detailed probe into your filler cleaning system to assess the system design, audit your current cleaning procedures, map your current water, energy, and chemical usage, and measure cycle time.
- As necessary, we will conduct additional assessments into the cleaning result, microbiological standards, and specific soils or allergens.
- You'll receive an analysis benchmarking your performance against industry standards and a detailed report identifying areas for improvement.

Following the Diversey FillerCheck, you'll receive recommendations based on four pillars:

- Effective and efficient hygienic design
- Cleaning efficiency
- Water, energy and chemical efficiency
- Time and usage efficiency

Your operational efficiency and total cost of ownership will be positively impacted as a result of Diversey FillerCheck's clear, structured process that identifies and prioritises improvement actions

Average cost of filler cleaning*



CASE STUDY



OPERATIONAL EFFICIENCY

Location:

Beverage manufacturer, Europe

Challenge:

The filler cleaning process was limiting site capacity.

Solution:

Applying optimised CIP programs, and going from 5-step hot to 3-step Diversey® CIP, significant savings in time, water and energy were realised.



TIME

50%
reduction in
CIP time*



WATER

30%
reduction



ENERGY

30%
reduction

*allowing increased production time.

*15-50% based on results achieved by Diversey. All facilities are different. The impact for your site will be calculated as part of an initial Diversey FillerCheck scan.



LubeCheck™ ✓

Challenge

Conveyors play a critical role in your business, transferring product between the filling lines to packaging. They also have the potential to hinder your operational efficiency and decrease the overall productivity of your plant, if they aren't well managed and maintained. Lubrication is essential to the speed, as well as the throughput of the filling lines and the reduction of wear. It also impacts health and safety, water and energy consumption and effluent quality.

Increasing production demands put additional pressure on your conveyor system, often resulting in higher running costs and increased downtime for older systems. With the average cost of downtime reported at up to \$200 per minute*, the efficient running of your conveyors is ever more critical. In our experience, efficient lubrication of the conveyor system has been shown to reduce the volume of fallen and damaged packs significantly - by 30% in recent examples, equating to a \$70k saving for one brewery canning line†.

Solution

Using Diversey LubeCheck you will benefit from a detailed analysis of your conveyor systems. Our structured, standardised and automated assessment based on technology, expertise and service components provides enhanced lubrication and hygiene, lower component wear, reduced water usage and spent solution discharge volumes, resulting in a safer workplace and your operational efficiency.

Value

With Diversey LubeCheck you can:



OPERATIONAL
EFFICIENCY

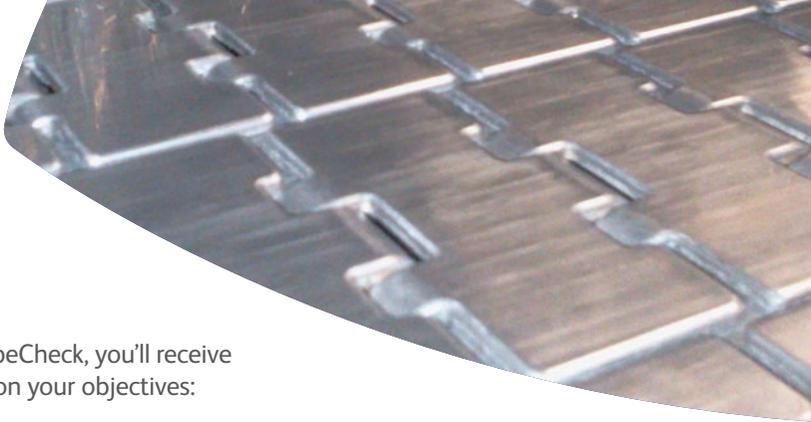
- Optimize line efficiency, reduce line stoppages, extend the life of components, and increase the safety of the bottling hall
- Identify areas of inefficiency and prioritise areas of improvement and the actions to be taken
- Determine whether incremental improvements such as the selection of a high performance lubricant will benefit your process, improving efficiency and reducing wear on bearings and pins
- Benchmark your business against industry performance using Diversey LubeCheck's analytic tools

Up to
\$200
per minute

The average cost of
conveyor downtime



LubeCheck™ ✓



Process

Achieve the best lubrication cost possible while minimising production interruptions, and lower the need for header, nozzle and distribution system cleaning with Diversey LubeCheck.

With Diversey LubeCheck's systematic approach, robust management systems, training and optimisation plans:

- We will help you discover if your conveyor system is under-performing and determine whether a comprehensive Diversey LubeCheck will result in meaningful improvement.
- Our service team, will conduct a detailed probe into your conveyor system to assess the system design, the chemical consumption and friction, audit the lubrication efficiency, reviewing conveyor hygiene and conduct a sustainability and safety review.
- You'll get a an analysis benchmarking your performance against industry standards and a detailed report identifying areas of improvement.

Following the Diversey LubeCheck, you'll receive recommendations based on your objectives:

- Improved safety
- Improved hygiene
- Improved line efficiency
- Improved economics
- Reduced water consumption
- Reduced energy usage
- Reduced CO₂ emissions

Your operational efficiency and total cost of ownership will be positively impacted as a result of Diversey LubeCheck's clear, structured process that identifies and prioritises improvement actions.

CASE STUDY



OPERATIONAL EFFICIENCY

Location:
Brewery can line, UK

Challenge:
A need to improve safety in the production hall where floors were covered in wet lube.

Solution:
Over 95% water reduction from seamer outfeed to packers.



SAFETY

0 slip
contributed to lubrication



WATER

3M
Over 3 million litre reduction



PERFORMANCE

100%
improvement in plastic belt life



2%
improvement in package stability

*Diversey benchmark study and industry sources.

†Figure based on Diversey achieved result - reduction of can loss from 1% to 0.7%. All facilities are different. The impact for your site will be calculated as part of an initial Diversey LubeCheck scan.



OPCCheck™ ✓

Challenge

Open Plant Cleaning (OPC) is a necessity in the food and beverage industries to ensure consistent hygiene standards are maintained and food safety is not compromised. However, cleaning your facility to the required level to reach food safety standards impacts production time, labour and utility costs.

Through many years of helping food and beverage processors optimize OPC processes, Diversey has found that in the average food processing plant, 65% of the cost of OPC is attributed to labour and time*. Optimising the cleaning process can unlock up to 30% or more of the cleaning time and resource requirement†. How would re-deploying time and resources impact your business?

Solution

Using Diversey OPCCheck, you will benefit from our detailed analysis of your usage of utilities, chemicals and time to identify areas of improvement. With this information our team will develop and implement an action plan to deliver immediate productivity gains and utility savings while maintaining – and in many cases, improving – hygiene standards.

Value

With Diversey OPCCheck you can:



OPERATIONAL
EFFICIENCY

- Optimize your OPC process design, efficiency and opportunities for process automation
- Prioritize areas of improvement and take action
- Benchmark your business against industry performance using Diversey OPCCheck's analytic tools



FOOD
SAFETY

- Analyse the efficacy of the cleaning regimen, ensuring the optimum cleaning chemical and process for the soils found in your manufacturing process

65%

of the cost of OPC is
attributed to labour
and time





OPCCheck™ ✓

Process

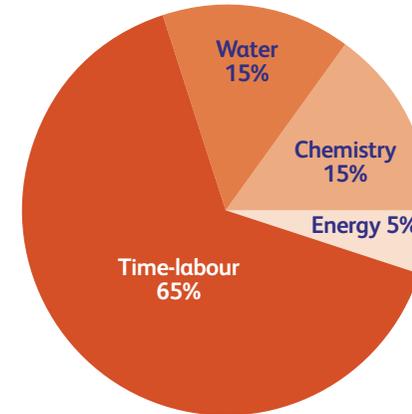
Improve your cleaning results, maintain microbiological standards, and safeguard your food safety with Diversey OPCCheck.

With Diversey OPCCheck's focus on the technical, environmental, and economic optimization your open plant cleaning processes:

- We will help you discover if your OPC processes are under-performing and determine whether a comprehensive Diversey OPCCheck will result in meaningful improvement.
- Our service team will conduct a detailed probe into the open plant cleaning process, complete a technical audit of your current cleaning procedures, assess the OPC system installation, review the sustainability impact of the cleaning chemistry, and monitor the utility usage.
- Additional assessments into the cleaning result, microbiological standards, and the removal of specific soils or allergens may also be completed depending on the products you are manufacturing.
- You'll get an analysis benchmarking your performance against industry standards and a detailed report identifying areas of improvement.



Average cost of Open Plant Cleaning



CASE STUDY



OPERATIONAL EFFICIENCY

Location:

Potato chip manufacturer, Greece

Challenge:

Open plant cleaning activities were accounting for a significant proportion of available production time.

Solution:

Diversey OPCCheck highlighted conveyor cleaning as a drain on resources which negatively impacted production time. Following implementation of projects to automate the cleaning process significant improvement in time and resource use were realized.



TIME

36.5%*
reduction in time usage



WATER

37%
reduction in water usage



CHEMICAL

16.7%
reduction in chemical usage



25%*
reduction in labour usage

*allowing redeployment of the hygiene team and increased production time

*OPC benchmark data based on Diversey experience.

†30% based on Diversey achieved results. All facilities are different. The impact for your site will be calculated as part of an initial Diversey OPCCheck scan.



AquaCheck™ ✓

Challenge

Water plays a critical role in your manufacturing process. As one of our most important natural resources, water, and monitoring of its use, has become an integral part of responsible business practices.

Whether the goal is reaching your corporate sustainability metric or with an eye toward cost management, prudent water use has become a business necessity.

Holistic management of your water consumption has the potential to reduce water and wastewater volumes by up to and in some cases over 30%. With water accounting for 30% of the average food and beverage processor's utility costs* the impact on your financials can be as significant as the impact on your sustainability goals.

Solution

Using Diversey AquaCheck, we will help you to optimise water consumption and control costs, create a safer environment for employees, and identify water losses that, when addressed, will lead to utility savings with low capital investment.

Value

With Diversey AquaCheck you can:



OPERATIONAL
EFFICIENCY

- Improve your water utilisation
- Measure and trace all sources of water waste
- Reduce your water and effluent treatment, further improving your economic and environmental performance
- Determine whether incremental improvements will improve efficiency
- Prioritize areas of improvement and take action
- Benchmark your business against industry performance using Diversey AquaCheck's analytic tools

On average water
accounts for

30%

of your overall
utility bill





Process

With Diversey AquaCheck's approach to water management you will decrease your water consumption, improve operational efficiency and decrease operating costs.

The service is tailored to your site following an on-site audit to ensure the solution is right for you and can deliver a return on your investment.

Diversey AquaCheck's systematic identification and quantification of water starts with a scan of your site to provide an indication of potential savings, a review of historic water usage and to set a baseline to guide strategy decisions.

Following your agreement to proceed, a detailed water balance survey is carried out, highlighting the use and waste of water throughout your site

On completion you will receive an analysis report:

- Tracing the water inputs and outputs at your site
- Calculating your losses from leaks
- Detailing recommended repairs and improvements, including volume and cost savings
- Benchmarking your performance against industry standards

Our team will then help you implement the recommendations so you can quickly and easily realise the savings. On completion we will arrange a scheduled program to return and monitor water usage against the new baseline.

Your water usage and cost structure will be positively impacted as a result of Diversey AquaCheck's clear, structured process that identifies and prioritises improvement actions.

CASE STUDY



**OPERATIONAL
EFFICIENCY**

Location:

Medium-sized protein slaughter and further processing plant in the United States

Challenge:

Water scarcity was highlighted as a major concern to the business.

Solution:

Ten projects were identified and completed which generated savings of 170M gallons of water and \$365,000 annually.



IDENTIFY

10
projects



WATER

170M
gallons saved



PROFIT

\$365k
annual savings



27%
reduction in
water & effluent



Challenge

Compressed air plays a critical role in your business-powering processes. And, the generation and distribution of air accounts for a significant proportion of your energy bill. The U.S. Department of Energy estimates that on average 20-30% of the compressed air you generate is lost to leaks* - an unseen element adding to your energy costs and putting increased pressure on your generation system.

Solution

Using Diversey AirCheck, we will help you to reduce utility waste and realise significant cost savings on your total compressed air budget. The AirCheck audit and resulting custom actions can reduce waste, with the return on investment having an instant impact on your site's financials.

Value

With Diversey AirCheck you can:



OPERATIONAL
EFFICIENCY

- Improve your compressed air utilisation
- Measure and trace all sources of compressed air waste
- Determine whether incremental improvements will improve efficiency
- Prioritize areas of improvement and take action
- Benchmark your business against industry performance using AirCheck's analytic tools

A background image showing several industrial compressed air gauges. The gauges have white faces with black markings and needles, mounted on metal pipes. The image is slightly blurred, focusing on the foreground gauges.

20-30%
of compressed air
is lost to leaks



Process

Reduce your compressed air generation cost with Diversey AirCheck's structured process to identify, quantify, prioritise, and document compressed air leaks inside your facility. Tailored to your site following on-site auditing to ensure the solution is right for you, Diversey AirCheck can deliver a return on your investment through:

- Improved capacity of compressors
- Reduced wear and tear on the compressed air systems
- Reduced pressures

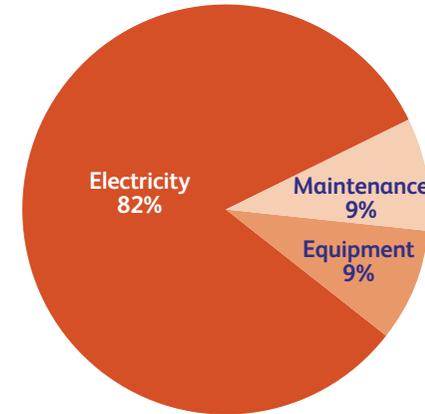
Following an initial meeting to agree on the project scope and expectations, our specialists undertake the on-site Diversey AirCheck audit using specialised equipment to identify leaks while your plant remains in operation:

- Leaks are identified, tagged and documented and a detailed action plan is created to prioritise repairs.
- The repair schedule can be implemented as a project, managed by the Diversey team or completed by your own maintenance team.
- Following the repair of these leaks, we will arrange a scheduled return 2-4 times a year to maintain your air system's performance.

On completion you will receive a full project plan, leak report, action plan and impact summary, documenting the return on investment.

Your operational efficiency and total cost of ownership will be positively impacted as a result of Diversey AirCheck's clear, structured process that identifies and prioritises improvement actions.

True cost of running a compressed air system



CASE STUDY



OPERATIONAL EFFICIENCY

Location:
Beverage bottler, North America

Challenge:
Increased energy spend attributed to the compressed air handling system

Solution:
A Diversey AirCheck audit identified 35 compressed air leaks, that when addressed, saved the bottler \$19,800 per year in energy savings.



IDENTIFY

35
leaks



ENERGY

282,683
kWh electricity saved



PROFIT

\$19,800
annual savings

*<http://energy.gov/eere/amo/advanced-manufacturing-office>



SteamCheck™ ✓

Challenge

Thermal energy and steam are primary resources for your business. Harnessing steam is critical and losses in the distribution system negatively impact both your cost of production and sustainability.

The U.S. Department of Energy estimates that 15-20% of installed steam traps fail if they do not receive maintenance every 3-5 years. The impact to your business? On average 16% of the steam you generate is lost through leaking steam traps, pipes, or valves within the distribution system*. This negatively affects the cost of generation and the load put on your boiler and distribution system.

Solution

Using Diversey SteamCheck, we will help you to improve the reliability of your steam system, create a safer environment for employees, and identify steam losses that, when addressed, will lead to energy savings with low capital investment.

Value

With Diversey SteamCheck you can:



OPERATIONAL
EFFICIENCY

- Improve your steam utilisation
- Measure and trace all sources of steam waste
- Determine whether incremental improvements will improve efficiency
- Prioritize areas of improvement and take action
- Benchmark your business against industry performance using Diversey SteamCheck's analytic tools

On average
16%
of the steam you
generate is lost to leaks





Process

With Diversey SteamCheck's steam trap survey you will identify costly losses within the steam distribution system.

Failed steam traps, or those opening too rapidly have a large impact on your operational resources including:

- Increased energy use and fuel bills
- Higher emissions
- Increased water, chemical treatment and effluent charges
- Inefficient transfer of heat exchanger steam
- Loss of steam pressure
- Thermal losses in condensate return system

When you work with Diversey to implement Diversey SteamCheck, we will test your steam generation and distribution system with ultrasonic equipment to identify each of your steam traps and determine its operation.

On completion you will receive an analysis report:

- Listing each steam trap on your site (make/model)
- Identifying operation status and baseline information
- Calculating your losses for leaking/blowing steam traps
- Identifying other non-conformities in your steam distribution system that may include other losses to the system
- Benchmarking your performance against industry standards

Your operational efficiency and total cost of ownership will be positively impacted as a result of Diversey SteamCheck's clear, structured process that identifies and prioritises improvement actions.

CASE STUDY



OPERATIONAL EFFICIENCY

Location:
Large brewery in Italy

Challenge:
Excessive utility costs attributed to the steam generation process.

Solution:
The Diversey SteamCheck process and the resulting implementation of recommendations saved the brewer energy costs, improved the integrity and safety of the steam system, and improved the efficiency of the boiler.



IDENTIFY

60
steam traps



IDENTIFY

12
failed steam traps



ENERGY

8M
kg/steam per year saved



PROFIT

\$80k
annual savings

*US Department of energy http://www.energy.gov/sites/prod/files/2014/05/f16/steam1_traps.pdf



SecureCheck™ ✓

Challenge

Food safety is critical to your business. The smallest error can have disastrous consequences - impacting brand reputation and ultimately your profitability.

Food safety is too important to leave to chance. You need to know exactly where problems may occur before they actually do. When a food safety issue is identified it may already be too late.

With 40% of product recalls attributed to microbiological contamination in 2015*, it is clear that a focus on hygiene is critical to protect your product from sources of cross contamination.

Solution

Diversey SecureCheck is a unique diagnostic tool that helps you to ensure the safety of your processed food product, and reduce the risk of contamination.

The Diversey SecureCheck programme's qualified specialists will visit your factory and provide a comprehensive appraisal of your operation, identify potential risks, and provide clear and practical tailor-made solutions to minimise any impact.

Value

With Diversey SecureCheck you can:



OPERATIONAL
EFFICIENCY

- Simplify the management of food safety and hygiene throughout your site by following a tailor-made plan created during the Diversey SecureCheck process
- Drive efficiencies in utility, chemical and labour utilisation when Diversey SecureCheck recommendations are implemented
- Prioritize areas of improvement and take action
- Benchmark your business against industry performance using Diversey SecureCheck's analytic tools

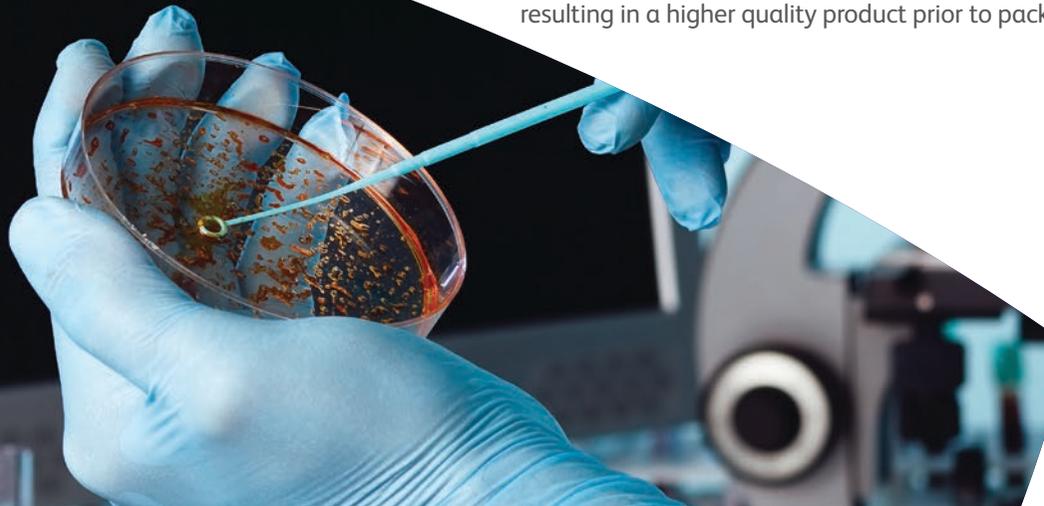


FOOD
SAFETY

- Identify the areas within your process that have the potential to harbour and promote the spread of microorganisms - and reduce the risk of contamination by implementing the recommendations made
- Ultimately reduce the microbiological burden on your final product, resulting in a higher quality product prior to packaging.

40%

of food product
recalls due to
microbiological
contamination





SecureCheck™ ✓

Process

Improve your cleaning results, maintain microbiological standards, and safeguard your food safety with Diversey SecureCheck.

- Risks to your product's safety are classified as standard or critical, allowing the results to be evaluated and implemented in priority, order tailored to your process and product.
- Keep track of standards and trends in the processed food industry that impact your sector.
- Benchmark your performance against industry standards and benefit from corrective solutions to improve food safety.
- Simplify the management of food safety and hygiene at your site, helping you achieve and maintain excellent food safety standards across all areas of your production process.

Tailored Solutions

With Diversey SecureCheck you will also gain access to Diversey's global hygiene solutions knowledge. As a key stakeholder within a wide range of markets, we can provide a global understanding of the hygiene issues most affecting business today. Diversey SecureCheck will allow you to measure, monitor and manage your business at both a local and a global level. With direct access to our specialised knowledge, experience and expertise, and a unique diagnostic tool that identifies your strengths and minimises your weaknesses, you can build a more successful hygiene strategy.

Step One: Detect the Potential Risks

The Diversey SecureCheck programme's qualified specialists are trained to inspect and identify risk-sensitive areas throughout your production process. Data relevant to your site is collected using a proprietary software package,

Step Two: Presenting the Data

After the inspection is completed, the data will be presented in an easy-to-understand format that highlights potential areas of risk and identifies where processes can be improved.

Diversey SecureCheck is different from other audits: we do not score your site based on compliance to a set of rules. Our aim is to use the results of our inspection to develop a tailor-made improvement plan to reduce microbiological risk and attain best-in-class production standards.

Diversey SecureCheck monitors progress over a specified time and measures the impact and effectiveness of corrective actions.



Challenge

Hygiene is essential in the food and beverage industries. Having a well-trained workforce that recognise hygiene issues is an important step to avoiding risk to food safety and your brand reputation. But the skill gap is one of the main challenges the global food and beverage industries are facing today. A recent survey by the Economist, 50% of food companies positioned labour challenges, and more specifically skilled labour, as their number one challenge.

Providing a system that ensures the workforce is trained to perform to their best may pose additional challenges to companies. With frequent staff turn over face to face training is often complex to manage and very costly.

Solution

With these challenges in mind, Diversey has created the Hygiene Academy platform and e-learning courses. A cloud based solution that enables you to manage and deploy your own trainings and integrate our best in class knowledge into your operations.

Research has shown that e-learning has the power to increase your employee's knowledge retention rate by up to 60%, owing to the design of e-learning courses and ability for students to learn at their own pace.

Value

With Diversey Hygiene Academy you can:



OPERATIONAL
EFFICIENCY



FOOD
SAFETY

- Access the latest cloud technology that improves user experience and minimizes setup time.
- Remove the need for expensive hardware or software.
- Create, print and digitally sign training course certificates, and incorporate expiration policies according to your organizational needs.
- Drive consistency, with the same training delivered to all workers across all locations and in several languages.
- Increase accountability by tracking employee participation and provide documentation to workers and supervisors.
- Access powerful reporting capabilities to monitor employee participation, performance and progress.
- Save time and reduce expenses associated with face to face training.

60%

The increase of knowledge retention e-learning has shown to deliver

e-learning





Diversey e-learning Platform

Diversey Academy e-learning courses are hosted on the Diversey Online Learning Management System. The platform simplifies employee training administration, takes cost out of your operations and enables consistent training delivery across your organisation.

Diversey e-learning modules

Essential courses

The foundation principles of hygiene to enable you to build an understanding of the role and importance of cleaning.

Application courses

Training courses developed for specific hygiene applications commonly found in the food and beverage Industry.

Process courses

Advanced courses dedicated to site wide best practices.

Specific microbe control courses

Courses focused on specific microbes that might impact food and beverage production via direct or cross contamination. These courses help to increase awareness and provide prgmatical advices on mitigation and reduction of food safety risks within your process.

Please refer to the Diversey Hygiene Academy catalogue to see the complete range of courses available.



ESSENTIAL COURSES

- Chemical Safety
- Principles of Cleaning
- Microbiology



PROCESS COURSES

- GMP for Food Plants
- Hygienic Design
- Allergens Management



APPLICATION COURSES

- OPC
- CIP
- Bottle Washing
- Membrane Cleaning
- Track Treatment
- Crate Washing



SPECIFIC MICROBE CONTROL COURSES

- Listeria
- Campylobacter
- Biofilm
- Salmonella



e-learning courses - Index

| CATEGORY | COURSE | COURSE MODULES |
|---------------------|------------------------|---|
| ESSENTIAL COURSES | CHEMICAL SAFETY | Cleaning safely with detergents and disinfectants |
| | PRINCIPLES OF CLEANING | <ol style="list-style-type: none"> 1. Basic hygiene and cleaning concepts 2. Chemistry 3. Food microbiology 4. Disinfection (sanitation) 5. Monitoring and Documentation |
| | MICROBIOLOGY | <ol style="list-style-type: none"> 1. Introduction & Growth of Microorganisms 2. Spoilage Organisms 3. Pathogen Organisms |
| APPLICATION COURSES | OPC | <ol style="list-style-type: none"> 1. OPC Fundamentals 2. OPC Applications |
| | CIP | <ol style="list-style-type: none"> 1. CIP Concepts 2. CIP Units Concepts: Single Use, Recovery, Static Leg 3. Recovery CIP 4. Static Leg CIP |
| | BOTTLE WASHING | <ol style="list-style-type: none"> 1. Bottle Washing Concepts and Equipments 2. Operational Applications 3. Control Applications |
| | MEMBRANE CLEANING | <ol style="list-style-type: none"> 1. Basic Membrane Concepts 2. Membrane Materials: Applications restrictions 3. Membrane Cleaning Application |
| | TRACK TREATMENT | <ol style="list-style-type: none"> 1. Track Treatment Concepts 2. Track Treatment Optimisation |
| | CRATE WASHING | Crate Washing Application |

| CATEGORY | COURSE | COURSE MODULES |
|----------------------------------|----------------------|--|
| PROCESS COURSES | GMP FOR FOOD PLANTS | Personal Hygiene and Good Manufacturing Practices in Food Processing |
| | HYGIENIC DESIGN | Hygienic Design Principles for Food and Beverage Plants |
| | ALLERGENS MANAGEMENT | Managing Allergens in Food Processing |
| SPECIFIC MICROBE CONTROL COURSES | LISTERIA | Listeria Management in Food Processing |
| | CAMPYLOBACTER | Campylobacter Management in Food Processing |
| | BIOFILM | Managing and controlling Biofilm in a food and beverage production |
| | SALMONELLA | Salmonella Management in Food Processing |



Diversey has been, and always will be, a pioneer and facilitator for life. We constantly deliver revolutionary cleaning and hygiene technologies that provide total confidence to our customers across all of our global sectors. Headquartered in Fort Mill, South Carolina, USA, Diversey employs approximately 9,000 people globally, generating net sales of approximately \$2.6 billion in 2017.

For more information, visit www.diversey.com or follow us on social media.

