HybridEDS™ DATASHEET
VERSION 2.6

SUNCOMBE
CIP, BIOWASTE & PROCESS SOLUTIONS

PATENT PENDING

HybridEDS™

Continuous Effluent Decontamination System

The Innovative Hybrid Effluent Decontamination System with the speed and sustainability of a continuous system and the treatment guarantee of a batch system

Overview

The Suncombe HybridEDS™ Continuous BioWaste Decontamination Kill System has been developed to provide the speed and sustainability of a continuous decontamination system with the 100% validatable treatment guarantee of a batch Decontamination system.

Following numerous clients' requests to develop a continuous based biowaste decontamination system that could be validated in the manner that a batch system can, using Suncombe tremendous experience of Biowaste decontamination systems and critical processing systems, we have worked on leveraging our knowledge of batch and continuous biowaste decontamination systems, to combine the advantages of both methodologies.

The systems, which can include long treatment times, for example up to 30 minutes, are used for the treatment of effluent and waste generated by research, laboratory, production and bio-containment facilities from a single laboratory room to a large multi-user facility and for production and process waste decontamination.

Heavy duty validateable Batch BioWaste Decontamination System used for Biological Hazardous Effluent Decontamination and Growth Media Sterilisation for BSL levels 1, 2, 3 and 4, they are available in a wide range of capacities and configurations, with every system individually designed to suit each client's specific requirements, with a dedicated Project Team, who will co-ordinate throughout the project lifecycle and agree approval prior to construction.

Applications

Biologics
Laboratories
Research Institutions
Animal Laboratories
Research Laboratories
Mobile Operations
Hospitals & Clinics

European Biosafety Association EBSA

ABSANZ

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Welcome

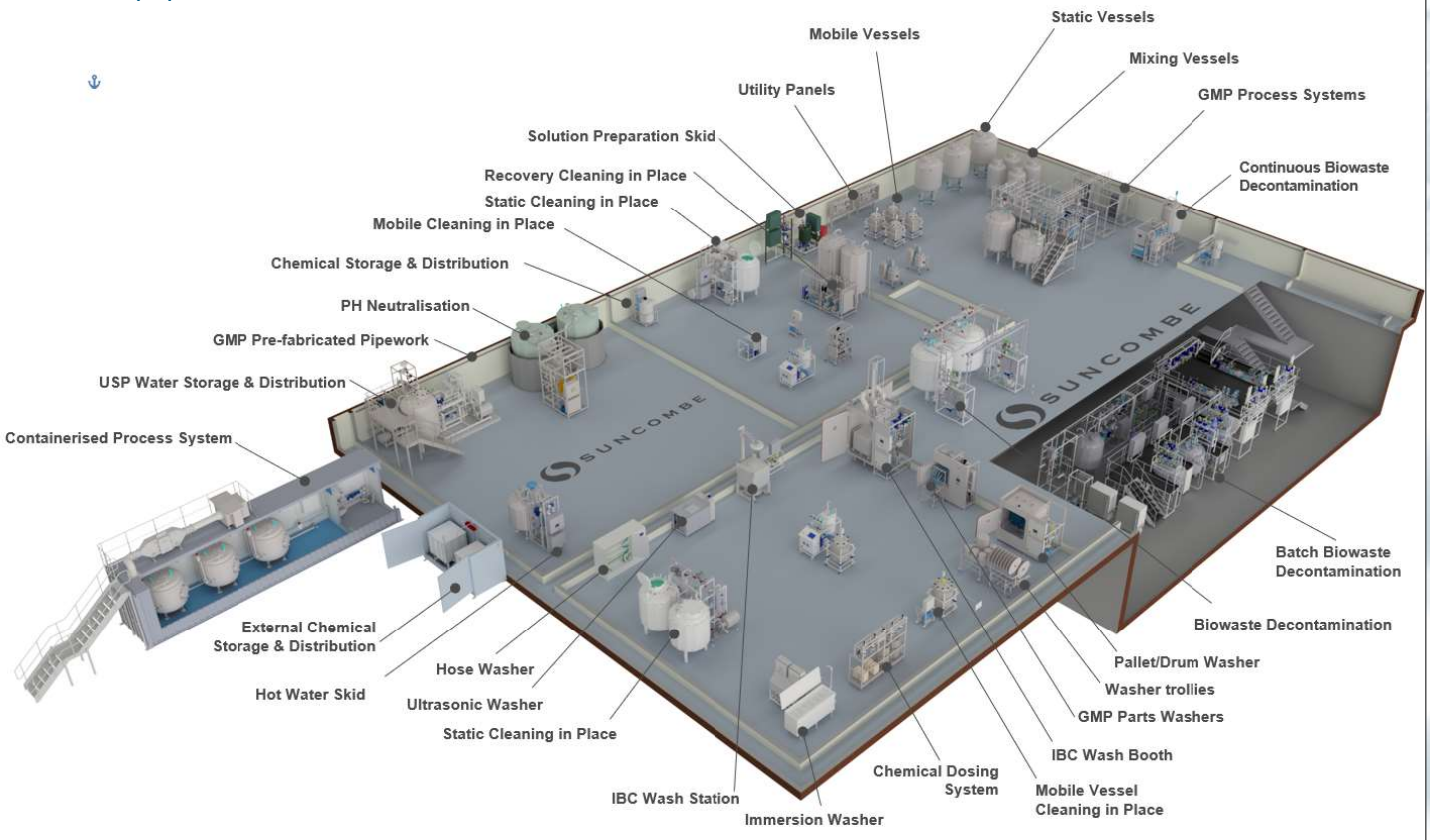
Since our foundation in 1961, Suncombe has pioneered the development of innovative solutions for cleaning in place, bio-waste decontamination, GMP Washers, sanitary skids and vessel skids. The business continues to be privately owned and managed day to day by Dave Adams and Steve Overton.

Supporting Dave and Steve is a close-knit, dedicated, highly motivated and long-standing team encompassing a wealth of technical experience and knowledge in all relevant disciplines, including design, manufacture, testing, installation, validation, documentation and after-sales support. All of our work is carried out across our own facilities north of London near Stansted Airport

The team employ the very latesttechniques, standards and best in class solutions. Having such a strong team allows us to offer the ability to carry out all of our work in-house, under our direct control and quality management system. It also ensures that we own and preserve all the knowledge and experience gained with every project and allows us to offer continued support for all our installed systems throughout their lifetime.

Our Clientele

Our Equipment



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Key Features

- Robust and reliable
- Pre-tested at Suncombe
- Plug n Play after delivery
- Steam utility required or integral steam generator
- Adjustable kill temperature and time
- Pumped discharge to sewers

Containment Level	BSL1, BSL2, BSL3, BSL4
Treatment Vessels	Any Number
Collection Vessels	Any Number
System Capacity (litres)	Up to 45,000L per day
Treatment Parameters	Variable f0 values and temperatures up to 140°C
System Cooling	42C
Material of Construction	316 Stainless Steel
Operating Voltage	400 VAC
Automation	BioSuite Level 2000 standalone control system with touch panel display.

HybridEDS™ with separate tanks for Collection and Treatment

HybridEDS™ with common tanks for Collection and Treatment

Options

Material of Construction	SAF 2205 duplex or Hastelloy for chlorine resistance
Operating Voltage	Various
Automation	BioSuite Level 3000 with 21CFR 11 reports, records and networking
Safety	Failsafe versions available for SIL 2 and SIL 3
Covers	Thermoplastic or stainless steel covers
CIP	Chemical CIP for system cleaning
Pump Feed	Discharge pump to transfer waste
Remote Control	Remote start and remote HMIs

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Designers, manufacturers & installers of quality, hygienic processing and cleaning systems and Equipment

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Key Features	Benefits
Fully automated hybrid continuous/batch processing	The HybridEDS combines the speed and sustainability of a continuous system with the 100% validatable treatment guarantee of a batch Decontamination system, enabling fully automated treatment of waste and safe release to drain.
Sustainable Design	The EDS incorporates facilities to recover up to 75% of the input energy.
Utilities	No need for a steam supply, designed to operate with simplistic utilities of an electrical supply, water and compressed air
Sanitary 316L stainless steel construction and components	Systems are constructed to the highest sanitary standards with 3.1/2.2 material traceability and welding dossier. This ensures a fully validatable and cleanable treatment environment.
Treatment Parameters	Variable configuration to provide Temperature/Time, f0 or log kill requirements. Temperatures up to 136°C.
Collection and Discharge Buffer Options	For large inlet flows, Integral Collection Tanks can be provided and for outlet flow limitations, integral discharge tanks can also be provided.
Vent Filter	Sterile, HEPA Vent Filter included, single, dual and duplex parallel arrangements available
Continuous monitoring of key parameters	Decontamination process is highly repeatable and validatable.
Containment Level	Systems suitable for the treatment of BSL 1, 2, 3 and 4 Waste.
Safety	Alarms, interlocks and fail-safe design prevent waste discharge in the event of an unsuccessful treatment. This encompasses scenarios such as power loss and under-temperature events.
Siemens PLC and 12” colour HMI with options for larger HMIs	Control hardware is industry standard and supported worldwide by Siemens. Ethernet interface included for transfer of critical operating variables to other systems. Designed to enable integration to third party equipment or higher level control system.
Suncombe BioSuite software	Control software has been developed and proven over many years for EDS applications and includes a wide range of user or administrator configurable parameters to enable customised decontamination profiles. User passwords, Active Directory, Audit Trails, Electronic batch reports for local or network storage are possible. User interface screens and process visualisation is simple, intuitive, clear and comprehensive. Remote access options are possible if required. Software complies with FDA 21CFR and EU GMP regulations.
Fully automated batch report	Electronic pdf reporting included – printed report optional
Automatic Operation	Automatic Waste Inlet, treatment and Discharge Automatic Alarms and Warnings
Coolant Utility	Water or glycol Coolant.
Drainage Temperature	<42°C
Configurable	Based on standard modules, we can supply individual units custom designed for your specific requirement.
Cleaning In Place	Prepared for CIP with optional Automatic or Manual Cleaning In Place System
Waste Distribution	Optional sump pumps and discharge Stations
Redundancy	System configurations available for N+1 Dual redundancy

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Control and Automation System

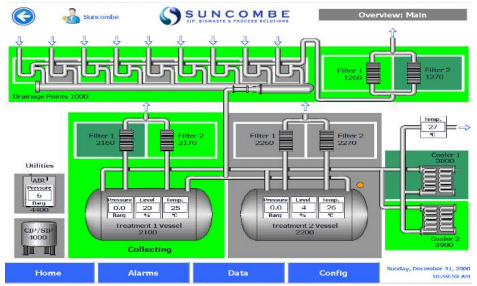
Renowned for their ease of operation and versatility, Suncombe systems are designed and manufactured for reliability, repeatability and longevity, whilst complying with the highest international regulatory standards. With dedicated in-house automation personnel for control design and software, Suncombe engineers have tremendous experience in incorporating a broad range of control solutions to suit your specific control requirements.

Developed to the GAMP 'V' model (Verification and Validation), system life cycle approach, which links the three main qualification activities (installation, operation and performance) back to the design process, the system software is produced in house by qualified software engineers, encompassing software development standards, quality control systems and change control during and post development.

Standards and Guidelines

- ✓ GAMP Guidelines
- ✓ FDA 21CFR11 Compliance
- ✓ ASME BPE
- ✓ EU Machinery Directive
- ✓ EU Low Voltage Directive
- ✓ EU cGMP Guidelines
- ✓ EU EMC Electromagnetic Compatibility Directive
- ✓ IEC 61131 for PLCs
- ✓ EN 60204 Safety of machinery
- ✓ EN 60439 Low Voltage Switchgear
- ✓ CE and UKCA Marks

Typical Operator Interface



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Our Sustainability Operations

Sustainability of Suncombe Equipment

As a company, we recognise the importance of sustainability and the need to minimise our environmental impact. All Suncombe equipment has been re-developed for sustainability purposes and incorporates techniques and methodologies to minimise impact on the environment, including technologies that reduce energy consumption, emissions, and waste, as well as adopting practices that promote sustainability and reduce the environmental impact of operations.

Social Responsibility

Our company philosophy is one of Social Responsibility and under this banner we are fully committed to the need to balance economic growth with environmental stewardship and social responsibility.

Overall, Suncombe demonstrates a commitment to sustainability and environmental responsibility in our operations and products. For further details Suncombe have produced Sustainability and Lifecycle White Papers available **on request**

Here are some of the ways we achieve this:

- ✓ Efficient use of resources: Suncombe uses energy-efficient technologies in our equipment, which helps to reduce energy consumption and carbon emissions.
- ✓ Waste reduction: Suncombe strives to reduce waste throughout our operations, from manufacturing to product disposal. We use sustainable materials and designs that minimise waste and maximise product lifespan.
- ✓ Recycling: Suncombe promotes recycling and reusing of materials to reduce waste. We also recycle our own equipment where possible.
- ✓ Compliance with regulations: Suncombe adheres to environmental regulations and standards set by governing bodies, ensuring that our operations do not harm the environment.
- ✓ Green initiatives: Suncombe invests in research and development of new, sustainable technologies and processes to further reduce our environmental impact.
- ✓ Lifecycle Considerations: The company emphasizes the entire lifecycle of our equipment, from design and manufacturing to use and disposal. We strive to select materials and components that are environmentally friendly and can be recycled or disposed of responsibly. Featuring design with margin, upgrading and future-proofing extends the equipment lifecycle.