MACS
Machine Autoclave Cutting Sterilization

MACS 135

Conquering the challenges of hazardous waste.

MACS autoclaves provide an outstanding economic solution by efficiently neutralizing germs, viruses, and bacteria on-site, significantly reducing hazardous waste transport costs and related CO_2 emissions. The system also effectively prevents cross-contamination and enables the efficient treatment of liquids and food. These benefits support a circular economy and promote sustainable resource utilization.

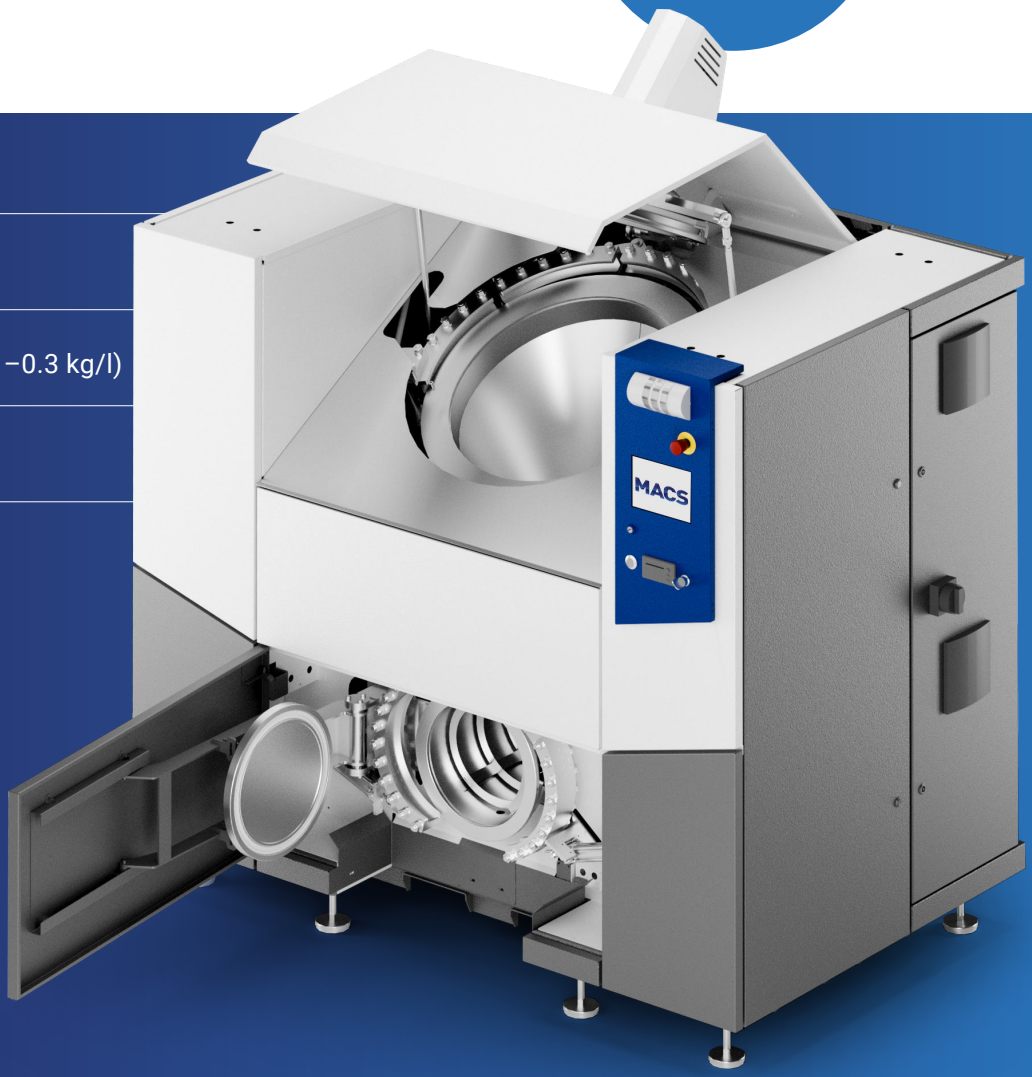
MEETS
ROBERT KOCH INSTITUTE
REQUIREMENTS

Volume filling hopper:
135 liters

Process capacity per cycle*:
270 liters / 27–81 kg (density 0.1–0.3 kg/l)

Height/ width/ depth:
2.300 / 2.200 / 1.400 mm

Power consumption:
Unit-average 17,5 kW
3 phase, 400 V, 50 Hz–60 Hz



Effectiveness
Achieves up to 97 % waste volume reduction. The best sterilisation to energy consumption ratio in its class.

Usability
Ergonomic and safe, standard utility connections, remote support capabilities.

Sustainability
Through its chemical-free operation, energy efficiency, volume reduction, emission-free performance.

Reliability
Consistent operation, security during power outages, independent from external services.

Financial benefits
Rapid installation and setup, reduction of hazardous waste handling fees, low lifetime operating costs.

*Standard process time=60min.

macs-autoclave.com

MACS 135 KEY DATA

MACS
Machine Autoclave Cutting Sterilization

MASCHINE	
Volume Filling Hopper	135 l
Volume Autoclave	85 l
Noise level	<65 dB
Steam generator	30 kW
Condensate/air	Oil-free air compressor, all exhaust air flows through a 0.2 micron HEPA filter
Shredder	Electric motors, each with reverse rotation, blades made of Hardox© steel
Frame	Steel
Casing/Bodywork	Steel optional: customizable machine´s colour

PROCESS	
Process capacity per cycle	270 l / 27–81 kg (density 0,1–0,3 kg/l)
Process	Pre-vacuum plus plateau phase 10 alternatively 20 mins., temp. 136°C, pressure up to 4,5 bar
Process capacity/24 h (18 cycles, as theoretical maximum)	4.860 l / 1.458 kg
Processtime/Cycle	Standard 60 min
Shredding time	6–10 minutes depending on the waste composition
Biological inactivation	SAL=10^{-24} standard program, SAL=10^{-48} (20 minutes program)
Waste reduction	Up to 97% on volume, depending on type of waste and waste density

LIFE CYCLE ASSESSMENT	
Volume reduction potential/year*	70.956 l
CO_2 reduction potential/600km	2.980,2 t
CO_2 Emissions/Year	Zero

DIMENSIONS**	
Height/ width/ depth (mm):	2.300 / 2.200 / 1.400
Height machine opened:	2.500 mm
Weight net:	2.010 kg

CONNECTIONS	
Water inlet	$^1/_2$"
Water outlet	1-$^1/_2$"
Water quality/water pressure	Potable water, min 4.5 bar (booster pump optional)
Power	3 phase, 400 V, 50 Hz–60 Hz
LAN/WLAN	Connection to local network possible

CONSUMPTION	
Water consumption	Up to 100 liters/cycle
Power consumption	17,5 kW

DOCUMENTATION (INTEGRATED ON BOARD PRINTER)
Pressure in bar, temperature, time, cycle number, every minute during plateau phase
USB Data pass, step documentation on SD Card, connection to local network possible (LAN/WLAN)

LOCATION	
Space requirement	Ca. 18 m². Mindestabstand zur Wand: 0,5 m – Türseite – min 1,20 m
Ventilation	6 air changes per hour recomended
Equipment load on the floor	Approx. 783 kg/m2

* Calculated on the MACS Liquid Program.
** May change due to design changes or customer requirements.

SAFETY- AND EMERGENCY FEATURES

- Automatic leak test before a cycle starts, will not start if leak is discovered
- Fast stop and emergency program in case of process is interrupted during the cycle period
- Sterilization with hot steam is guaranteed every time before the lid is opened
- Gaseous discharges are filtered with a 0,2 µ microbiological filtering system integrated water softener and steam generator
- Shredder and its parts are sterilized with saturated steam every cycle
- Programmable daily cleaning cycles
- Liquids are only released into the sewer after sterilization and confirmation that the cycle performed correctly. Cycle continues where it stopped
- Technicians don't need an education background

PROCESSABLE TYPES OF WASTE

- sharps (WHO-sharps)
- metallic packing, but no pressure containers VOC's
- blood bags and blood preserves (WHO-pathological waste)
- VOC's Volatile and semi-volatile organic compounds, chemotherapeutic wastes and radiological wastes should not be treated in a MACS
- wastes whose collection and disposal are subject to special requirements in order to prevent infection (i.e. dressings, plaster casts, linen, disposable clothing, diapers (WHO non-risk or „general" health-care waste)

MACS®

MACS Sterilisationsanlagen GmbH
2. Haidequerstrasse 1-3 | Object 36
1110 Vienna, Austria