



Ultrasonics.Steam.Ultraclean.



Laboratory

## Solutions for the laboratory – designed for professionals

Ultrasonic technology for the analytical, pharmaceutical and industrial laboratory

- Sieve Cleaning
- Sample Preparation
- Quick Degassing

# Equipment designed for laboratory applications

As specialist for ultrasonic technology Elma works in close cooperation with their customers to develop new solutions for laboratory applications, such as analysing, sample processing and cleaning of laboratory instruments.

Thus our ultrasonic units are optimized for the use in laboratories and are indispensable both for research and for the practical use in the lab to find solutions for challenging tasks and to get reproducible test results. Furthermore Elmasonic units perform also specialized cleaning tasks, e.g. sieve cleaning. Therefore the product range encloses various different types of ultrasonic cleaners and each product series consists of units of different sizes.

Practical and thoughtout accessories facilitate the handling and meet the requirements of the everyday work in a lab.

The cleaning of laboratory glassware and laboratory instruments is a crucial task in any lab. Elma offers a special program of chemical cleaners which can be used both in ultrasonic units and in laboratory rinsing automats.

Working with Elmasonic ultrasonic units combined with Elma Lab Clean chemicals guarantees a highly efficient and environment-friendly results.

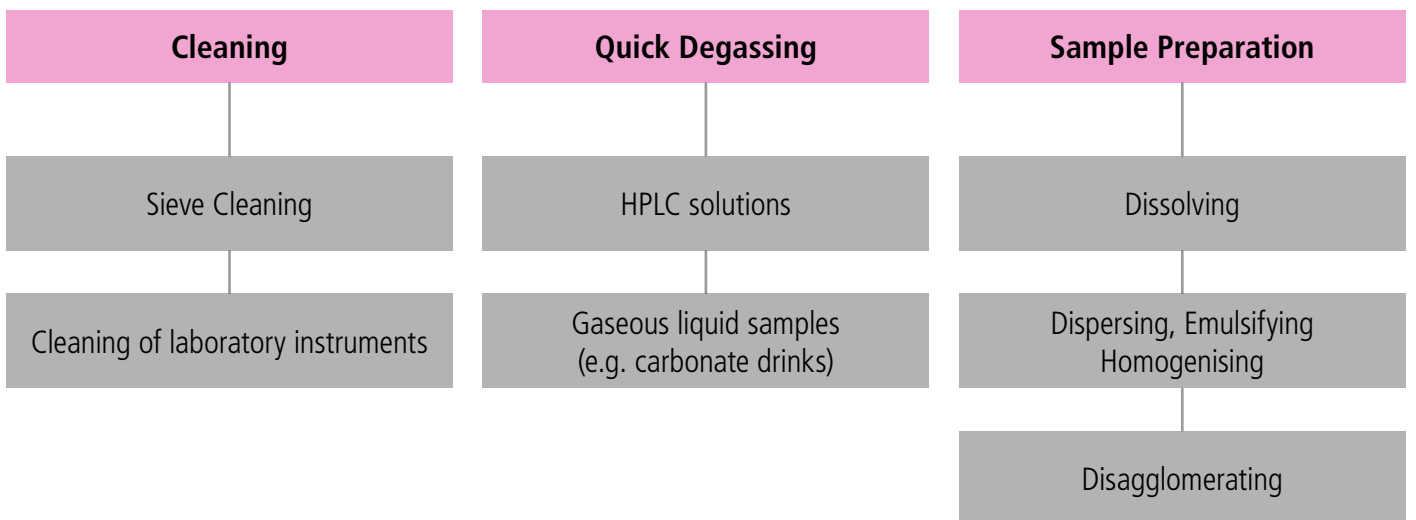


*Elmasonic ultrasonic units with suitable accessories*



*Elma Lab Clean series*

## Applications in the laboratory



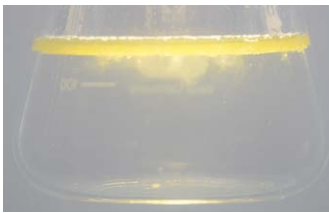


### **Cleaning**

of laboratory glassware or laboratory instruments even in joints of articulated components and in hollow bodies. The cleaning of analytical sieves is quite a special application. Cleaning with an Elmasonic ultrasonic unit and in combination with Elma Lab Clean chemicals is at the same time highly effective, gentle and environment-friendly.

### **Degassing**

for the reliable removal of gas from samples (e. g. for the removal of carbon dioxide) or for the degassing of HPLC solvents.

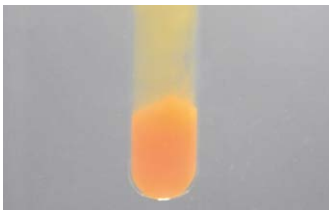


### **Emulsifying**

of two liquids that are not ordinarily mixable, e. g. oil in water.

### **Dispersing**

of substances that are not ordinarily mixable; generally solid substances in liquid, e. g. pigments in water.



### **Dissolving and homogenising**

of hardly soluble substances for analytical purposes or for the production of analytical substances.



*More information about applications with ultrasound.*



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# Elmasonic EASY

The easy way to clean.



Elmasonic EASY series

The Elmasonic EASY series includes 9 device sizes and is characterized by simple and user-friendly operation. With an ultrasonic frequency of 37 kHz, the devices are particularly suitable for cleaning laboratory equipment and instruments.

Samples are prepared with the switchable Pulse-function. Furthermore one can disagglomerate, homogenise or disperse with the Pulse-function. The proven Sweep-function is integrated in the Normal-Mode.

From Elmasonic EASY 30 H the devices are equipped as standard with heating and from Elmasonic EASY 60 H each device has a drain.



Elmasonic EASY 30 H



## Functions and advantages:

- Clearly designed and splash-proof control unit
- Safe-to-run-dry heating
- Temperature setting from 30°C to 80°C
- Cover as noise protection and as drip pan
- High user protection with automatic safety shutdown after 8 hours continuous operation or at 90°C bath temperature

## Technical Data

	EASY 10 / H	EASY 20 / H	EASY 30 H	EASY 40 H	EASY 60 H	EASY 100 H	EASY 120 H	EASY 180 H	EASY 300 H
<b>Tank operating capacity (l)</b>	0.7	1.2	1.9	3.2	4.3	7.5	11.3	12.9	20.6
<b>Tank capacity max. (l)</b>	0.8	1.75	2.75	4.25	5.75	9.5	12.75	18.0	28.0
<b>Unit ext. dim. W/D/H (mm)</b>	206/133/182	176/189/218	301/189/218	301/189/268	362/201/269	363/289/272	363/289/272	393/352/322	544/352/322
<b>Tank int. dim. W/D/H (mm)</b>	188/83/59	141/127/97	222/122/99	217/117/149	275/125/149	282/222/149	276/216/199	304/274/199	480/275/199
<b>Weight (kg)</b>	2.0	2.1	3.3	4.0	5.1	5.9	7.5	8.5	11.0
<b>Basket int. dim. W/D/H (mm)</b>	177/73/30	112/103/49	198/106/49	190/105/74	255/115/74	255/200/73	250/190/113	280/250/113	455/250/112



# Elmasonic S

## Reliable ultrasonic devices for cleaning, degassing and dissolving

Elmasonic S ultrasonic devices are available in 16 device sizes from 0.8 to 90.0 liters maximum tank capacity. Equipped with an ultrasonic frequency of 37 kHz and functions like Sweep, Degas and Auto-Start, Elmasonic S devices can be used in a variety of applications.

### Functions and advantages:

- 37 kHz ultrasonic frequency
- Normal-Mode for sample preparation before analysis
- Switchable Sweep-function for an optimum sound field distribution throughout the whole cleaning bath in order to achieve an even ultrasonic impact
- Degas-function for quick degassing of fresh cleaning solutions
- Pause-function for interrupting a current application
- Temperature-controlled Auto-Start starts the ultrasound automatically when the set temperature is reached
- Safe-to-run-dry heating (only devices with heating)
- Clearly designed and splash-proof control unit
- Individual control of the cleaning time with display of the set and remaining cleaning time



Elmasonic S 30 H with test tube holder

- Individual temperature setting from 30°C to 80°C with display of set and actual temperature for monitoring
- From Elmasonic S 30 (H) each device has a drain on the rear
- Elmasonic S devices have the „Elma Commitment to Quality“ (for more see <https://www.elma-ultrasonic.com/en/company/quality/>)



### Technical Data

	S 10 / H	S 15 / H	S 30 / H	S 40 / H	S 60 / H	S 70 / H	S 80 / H
<b>Tank operating capacity (l)</b>	0.7	1.2	1.9	3.2	4.3	5.2	7.3
<b>Tank capacity max. (l)</b>	0.8	1.75	2.75	4.25	5.75	6.9	9.4
<b>Unit ext. dim. W/D/H (mm)</b>	206/133/182	176/189/218	301/189/218	301/189/268	362/201/269	568/188/222	568/188/272
<b>Tank int. dim. W/D/H (mm)</b>	188/83/59	141/127/97	222/122/99	217/117/149	275/125/149	488/120/99	480/112/149
<b>Weight (kg)</b>	2.0	2.1	3.3	4.0	5.1	5.6	6.4
<b>Basket int. dim. W/D/H (mm)</b>	177/73/30	112/103/49	198/106/49	190/105/74	255/115/74	465/106/49	455/106/74

	S 100 / H	S 120 / H	S 180 / H	S 300 / H	S 450 H	S 900 H
<b>Tank operating capacity (l)</b>	7.5	9.0	12.9	20.6	35.0	75.0
<b>Tank capacity max. (l)</b>	9.5	12.75	18.0	28.0	45.0	90.0
<b>Unit ext. dim. W/D/H (mm)</b>	363/289/272	363/289/272	393/352/322	566/352/322	605/388/466	710/588/466
<b>Tank int. dim. W/D/H (mm)</b>	282/222/149	276/216/199	304/274/199	480/275/199	502/302/303	600/500/298
<b>Weight (kg)</b>	5.9	7.5	8.5	11.0	25.0	45.0
<b>Basket int. dim. W/D/H (mm)</b>	255/200/73	250/190/113	280/250/113	455/250/112	452/264/192	544/460/190



Elmasonic S used in the laboratory

More technical details.



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# Elmasonic P

Multi-frequency units with strong power and exceptionally silent



*Elmasonic P series  
available in 6 different sizes*

## Elmasonic P 30 SE - the homogeneous ultrasonic bath

Equipped with micro-processor controlled multi-frequency technology (37/80 kHz), the Elmasonic P 30 SE is ideal for professional use in the laboratory.

### Optimized sound field distribution

The optimal distribution of ultrasound across the whole bath is achieved with an optimized arrangement of the transducers on the tank bottom and the construction without integrated drainage. This ensures that the ultrasonic power is evenly distributed.

### Elmasonic P functions

Furthermore, the Elmasonic P 30 SE has all the functions as Sweep, Pulse or Degas and advantages of Elmasonic P series like temperature-controlled auto-start, etc.



*Elmasonic P 30 SE*

## Technical data

Tank operating capacity (l)	1.9
Tank capacity max. (l)	2.75
Unit ext. dimensions W/D/H (mm)	300/179/221

Tank int. dimensions W/D/H (mm)	240/137/100
Weight (kg)	3.3
Basket int. dimensions W/D/H (mm)	198/106/50



The digital display of the Elmasonic P devices are self-explanatory, easy to handle and very user-friendly. All target and actual values are easily identifiable and clearly legible.

## One instrument - Two frequencies

Each Elmasonic P has two frequencies integrated which - depending on the task - can be manually changed.

- 37 kHz frequency:  
for coarse cleaning tasks and for dissolving, emulsifying, dispersing and degassing.
- 80 kHz frequency:  
ideal in silent workspaces with extension of the application time at the same time, ideal for the cleaning of inner areas of parts e.g. in capillaries.



Elmasonic P 30 H

## Functions and advantages:

- Normal-Mode:  
for laboratory applications such as mixing, dissolving, dispersing
- Pulse-function:  
activable extra power of about 20% through increased ultrasonic peak
- Sweep-function:  
for an even distribution of the ultrasonic power
- Degas-function:  
for the quick degassing of samples or HPLC solvents

- Individual power regulation  
for sensitive surfaces the ultrasonic power can be individually reduced

### Additional functions

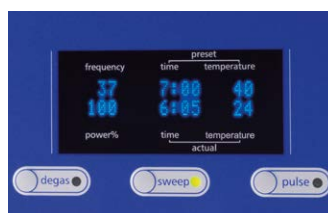
- Pause-function for interrupting a current application
- Temperature-controlled auto-start  
starts the ultrasound automatically when the set temperature is reached



Normal



Pulse



Sweep



Degas

## Technical data

	P 30 H	P 60 H	P 70 H	P 120 H	P 180 H	P 300 H
Tank operating capacity (l)	1.9	4.3	5.2	9.0	12.9	20.6
Tank capacity max. (l)	2.75	5.75	6.9	12.75	18.0	28.0
Unit ext. dimensions W/D/H (mm)	300/179/221	365/186/271	568/179/221	365/278/321	390/340/321	568/340/321
Tank int. dimensions W/D/H (mm)	240/137/100	300/151/150	505/137/100	300/240/200	327/300/200	505/300/200
Weight (kg)	3.3	5.1	5.6	7.5	8.5	11.0
Basket int. dim. W/D/H (mm)	198/106/50	255/115/75	465/106/50	250/190/115	280/250/115	455/250/115



More technical details.



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# Accessory equipment for laboratories

## Right accessories for perfect results

In an analytical laboratory there are multiple different requirements for various laboratory applications and cleaning tasks. Elmasonic ultrasonic units can be used for dissolving, emulsifying or degassing and are also indispensable for various cleaning tasks. Practical and thoughtout accessory equipment optimizes and facilitates all possible applications.

The Elma product range encloses a large number of useful equipment - from glass beaker, holders (including cover with holes) to specialized holders for flasks, immersion cooling devices (to keep temperatures at a constant level) or acid-resistant tubs. With the aid of these elaborate helpers, almost any laboratory job can be done easily and quickly.



## Noise protection in the laboratory

Noise can be a significant stress factor and has an impact on performance and concentration when working in the laboratory.

In order to keep the noise emissions at a minimum, Elma developed the powerful but at the same time very silent Elmasonic P series. A large amount of laboratory tasks can be carried out using the high 80 kHz frequency. The extended application time is more than compensated by the exceptionally silent operation.

For applications requiring higher power, the units can be operated at 37 kHz. To reduce the noise at a minimum, the unit can be placed in a noise protection box which is available in two different sizes.

A ultrasonic unit operating in a noise protection box is on average 3 to 4 times less noisy (dBA level) than when operated outside the box. The vapours produced during operation are carried off through a noise-reduced exhaust outlet.

The hinged cover has a large window so that the display and if necessary the tank can be monitored with closed cover. Due to the ventilation system the window does not steam up on the inside.

*Noise protection box size M*





# Accessories for residual dirt analysis and special applications

The right equipment for correct analysis results



Cover with hole, made of PP

For the residual dirt analysis the particles must be removed from the test item before the actual analysis is carried out. After removal, the dirt particles are filtered and analysed.

The right ultrasonic units with thoughtout accessories are crucial for a successful analysis. Ultrasound with its pre-defined parameters is a suitable and cost-saving method for this.



Plastic tub, made of PP

Specifically the Elmasonic S 120 (H) ultrasonic device is suitable for residual dirt analyses. Covers with holes and plastic tubs, developed for residual dirt analyses in the Elmasonic S 120 (H), facilitate the work.

To prevent a recontamination, two glass beakers are inserted in the stainless-steel or PP-cover with holes. The ultrasound is transmitted through the liquid in the tank.



Cover with 2 holes, made of stainless steel



Test tube rack, made of stainless steel

## Cooling or temperature-constant with the modular cooling coil system

For many laboratory applications, it is often required to keep a constant temperature in the ultrasonic bath or even cool it down.

In less than 10 seconds, the optional cooling coil turns every ultrasonic bath into an actively cooled one. It can be easily clipped on the tank and fits easily between basket and tank. For larger trays also 2 cooling coils can be combined and operated.

The cooling coils can be connected to a customer-provided cryostat or to the normal water supply.



Elmasonic with cooling coil

# Elmasonic S 50 R and S 350 R

Professional equipment for sample preparation and test sieve cleaning



Elmasonic S 50 R



Elmasonic S 350 R

## Sieve cleaning before and after the analysis

Sieve analysis is a standard process in the analytical, the food and the environmental laboratory and works perfectly if the sieves are cleaned to the last grain.

Elmasonic S units are fit for the intensive cleaning of individual sieves and for the simultaneous processing of up to 4 sieves. Special ultrasonic modes provide perfect cleaning results independent of the filling level.

For sieve cleaning the sieve is placed in the sieve holder and then put into the unit. The special "sieve cleaning" program uses two ultrasonic modes alternatingly which creates strong active cleaning pulses regardless of the filling level.

The process can be standardized and repeated as required which makes it ideal for defined laboratory applications.

For the use in a food laboratory it may be required to apply a cleaning medium which can be rinsed off without residues. For this purpose, the cleaning agent Elma Lab Clean N10 is reliable and well proven.

Test sieve cleaning with Elmasonic S 50 R and S 350 R:

- for 200 - 500 mm sieves
- with program-controlled ultrasound

## Sample preparation and degassing of samples and of solvents for HPLC analysis



Degassing in the Elmasonic S 50 R and S 350 R is very efficient and noise-reduced. The Degas-mode alternates between maximum power and a special operating mode which moves the microscopic bubbles up and out of the liquid in a lift-out effect. In the beverage manufacturing industry, for instance, the carbonic acid gas is taken out of the samples before analysis.

HPLC solvents and the samples to be analysed can also be degassed in a short period of time.

The unit has an integrated laboratory stand connection to avoid the unpleasant noisy rattling of the glass on the tank floor.

- Integrated special programs for sample preparation
- Quick and efficient degassing of samples and HPLC solvents with the pre-defined Degas-function
- Filling marks for working with smaller bundles and for saving water

# Elmasonic S 300 and sieve cleaning module SRH 4/200

The quality of cleaning results can be measured



*Elmasonic S 300 (H) with SRH 4/200 sieve cleaning module*



*SRH 4/200 sieve cleaning module*

In sieve analysis several sieves are used simultaneously. With the rotating module the throughput can be increased.

The sieves are placed into a universal support rack. The baskets rotate during cleaning and the inclination of the sieves ensures that the removed grains fall out of the sieves automatically.

- Time and cost-saving intensive cleaning of up to 4 analysing sieves (D 200 / 203 mm, 8").
- Sieves of different manufacturers can be processed simultaneously
- Gentle ultrasonic cleaning (as opposed to rough manual cleaning), tension of the tissue and mesh size are not changed; the measuring accuracy remains 100% unaltered.

*Elmasonic S 300 with sieve cleaning module SRH 4/200 in the lab*



# Elmasonic xtra TT and Elmasonic TI-H

Ultrasonic cleaners with extra long service life for highest demands

## Elmasonic xtra TT



Elmasonic xtra TT series

In industrial laboratories, materials and products are analysed for quality assurance purposes both for the inspection of incoming items and for the pre-delivery inspection of manufactured products. Elmasonic xtra TT units are equipped with tanks made of cavitation-proof stainless steel, powerful transducers and come along with special cleaning functions for different applications and cleaning tasks.

- Permanently integrated Sweep-function for uniform distribution of the ultrasonic effect in the entire ultrasonic bath.
- Switchable Dynamic-function increases the peak ultrasonic performance. This improves the effectivity of cleaning and makes it possible to remove even the most stubborn contaminants.
- Individually settable limit temperature with LED warning indicator on reaching the temperature. Sensitive parts like jewellery or plastic parts are handled gently.
- Clearly arranged, control unit that is protected from spraying water.
- Temperature-controlled Auto-Start function: the ultrasound starts automatically when the preselected temperature is reached.
- User safety with safety shutdown

## Elmasonic TI-H

Elmasonic TI-H ultrasonic devices with multi-frequency can also be used in an industrial laboratory. The tanks are also made of cavitation-resistant steel and thus very durable even under rough conditions.

Due to the multi-frequency power various applications and cleaning tasks can be performed.

Elmasonic TI-H units are equipped with

- Sweep-function for an even sound field distribution
- Degas-function for quick and easy degassing
- Adjustable ultrasonic power
- Long service life and extended warranty period of 3 years on the tank due to the special cavitation-proof stainless steel
- Timer ultrasonic operation can be set between 0-15 min



Elmasonic TI-H Serie in 4 different equipment size

- Interchangeable multi-frequencies - MF2 and MF3 version -
  - 25/45 kHz - MF2-version:
    - 25 kHz: for coarse cleaning and removal of lapping or polishing media
    - 45 kHz: for fine cleaning and removal of oils and fats; ideal for hard surfaces like metal and glass
  - 35/130 kHz - MF3-version:
    - 35 kHz: for the removal of oil and grease from hard surfaces such as metal and glass
    - 130 kHz: for the cleaning of sensitive surfaces

# Elmasonic xtra ST

Single-tank units with multi-frequency technology for heavy-duty applications



Elmasonic xtra ST series

With 8 different tank sizes, the Elmasonic xtra ST (single-tank) series has been designed for heavy-duty applications in production, workshops and service. The stainless steel casing and the durable transducer tank are built for permanent operation. Thus Elma gives a 3-years warranty on the resistant, special stainless steel tank provided the unit is used properly and one-shift operated.

With the large number of features, the units can be easily and efficiently operated. All units are mounted on rollers and can easily be shifted to various workplaces in production or workshop. The up front arranged operating panel allows the quick and easy setting of all relevant parameters such as cleaning time, heating temperature or frequency.



Hinged basket for Elmasonic xtra ST



Elmasonic xtra ST 600H  
with hinged cover for noise protection

## Functions and advantages:

- Multi-frequency at 25/45 kHz:  
25 kHz for rough part cleaning  
45 kHz for cleaning sensitive parts.
- Sweep-function for optimum sound field distribution and cleaning performance in the entire ultrasonic bath.
- Switchable Pulse-function increases the peak ultrasonic performance output. This uprating makes it possible to remove even the most stubborn contaminants.
- Dynamic-function: The Sweep- and Pulse-functions run alternately on an automatic basis. The ultrasonic performance is temporarily increased by up to 20%. At the same time, the even ultrasonic sound field distribution in the ultrasonic bath enhances the cleaning effect.
- Short heating times due to the high heating capacity with temperature regulation (30 - 80°C)
- High user safety with automatic safety shutdown
- Easy to service due to quick changing of the generator and operator control unit. This means that the devices are ready for use again very quickly and are highly available for users.



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# Elma Lab Clean

## Cleaning chemicals for the laboratory

### Advantages of Elma Lab Clean:

- Powerful cleaning concentrates from acidic to alkaline
- Suitable for chemico-analytical and biological laboratories as well as for tensid-free applications in measuring analysis
- Non-foaming and therefore universally applicable in ultrasonic baths and for splash and spray cleaning in laboratory rinsing automats
- Prevent redeposition of lime and lime soap



	Contamination	Surfaces	pH-value	Proposal for dosage	Recommended application temperatures
	Emulsions, fat and grease, resinified residues, marker and label residues, lime soaps and lime deposits, fingerprints and dust.	Laboratory instruments made of glass, ceramic, plastic or metal. Check for Al, Mg and light metal alloys before application.	~9.5	Ultrasound: ~ 1 % Splashing: ~ 0.5 %	Ultrasound: 50-75 °C Splashing: > 55 °C
	Light grease contaminations, lime soap residues, fingerprints, dust.	Laboratory instruments for volumetric measuring analysis (pipettes, burettes, measuring cylinders) made of glass, stainless steel, ceramics and plastics. Not suitable for Al, Mg and light metal alloys.	~9	Ultrasound: ~ 1-2 % Splashing: ~ 0.5 %	Ultrasound: 50-75 °C Splashing: > 55 °C
	Blood, saliva, protein, bone and tissue residues, grease, oil, abrasives and polishing pastes, resinified and tarry residues, marker and label residues.	Laboratory instruments made of alkali-resistant glass or plastic, ceramic and metal. Not suitable for Al, Mg and light metal alloys.	~12	Ultrasound: ~ 2 % Splashing: ~ 0.5-1 %	Ultrasound: 50-75 °C Splashing: > 55 °C
	Emulsions, marker and label residues, lime soaps, light oils and greases, fingerprints, dust.	Laboratory instruments made of glass, ceramic, plastic or metal, incl. Al and light alloys. Check Mg-alloys before application.	~7	Ultrasound: ~ 2 % Splashing: ~ 1 %	Ultrasound: 30-75 °C Splashing: > 55 °C
	Lime and lime soaps, non-ferrous metal oxides, light mineral oils and grease, fingerprints and dust.	Laboratory instruments made of glass, ceramic, plastic or metal incl. Al and its alloys. Check Mg alloys and acid-sensitive glasses before application.	~4	Ultrasound: ~ 1 % Splashing: ~ 0.5 %	Ultrasound: 50-75 °C Splashing: > 55 °C
	Rust, lime, oxide layers (e.g. verdigris), mineral grease and oil.	Stainless steel, aluminum, non-ferrous metals, plastics and glass. For the passivation of stainless and chromium-containing steels.	~3	Ultrasound: ~ 1-5 % Splashing: ~ 10-20 %	Ultrasound: 30-80 °C Splashing: 30-80 °C
	Lime and lime soaps, non-ferrous metal oxides, mineral soiling, light mineral oils and grease, fingerprints and dust.	For the acidic basic cleaning of laboratory instruments made of glass, ceramic, plastic or metal. Not suitable for Al, Mg and light metal alloys. Check acid-sensitive glasses and plastics before application.	~1,5	Ultrasound: ~ 1-2 % Splashing: ~ 0.5 %	Ultrasound: 50-75 °C Splashing: > 55 °C

# Qualification and re-qualification of ultrasonic devices and tips for ultrasonic applications

## The cavimeter test

We developed the acoustic procedure for qualification and re-qualification - the cavimeter test - in order to check performance-relevant parameters of ultrasonic devices. This allows an evaluation of the device performance. Relevant and measurable parameters are the cavitation noise level, the excitation frequency, the sound pressure at the determined excitation frequency, the ultrasonic modes (Sweep, Pulse) and the functionality of the heating based on the actual and set temperature.

On request, both the initial qualification and the re-qualification can be carried out under specific process conditions defined by you or under the standard parameters defined by Elma.

All tests are carried out with calibrated measuring instruments according to standard EN 10204:2004.

When purchasing an ultrasonic unit, you can have it **qualified** before delivery at a charge. The device test certificates for all tested parameters are then also provided. Existing devices are **re-qualified** at our premises or on request and, under certain conditions, also at your premises.

This allows you to ensure and prove that the original characteristics and performance of your device are still present.

## Advantages of (re-)qualification:

- Integration of ultrasonic cleaning devices in validated processes
- Ensuring the required cleaning performance
- Verification of the required product quality

To obtain very good, reproducible cleaning results in validated processes, a device qualification is indispensable.

## Further tips for ultrasonic applications

### Tip 1 - Reduce the soil-moisture tension of the liquid

For a better ultrasound transmission into beakers, test tubes or acidic baths, the soil-moisture tension of the contact liquid should be reduced by a tensidic concentrate (e.g. rinsing or neutral cleaning agent). So that the ultrasonic power can be optimally used for the desired application.

### Tip 2 - Adjust to the minimum coverage

For many sample preparation application a minimum coverage of 15-20% of the height of the immersed beaker or test tubes is enough for processing. With the same exact test results, you can save water and energy.



*Elmasonic P 30 H during the cavimeter test*

## Qualification:

### Evaluation of the following parameters:

- Cavitation noise level according to the standardised acoustic procedure IEC TS 63001:2019
- Ultrasonic functions sweep and pulse
- Bath temperature and heating curve
- Technical and mechanical properties (evaluation of ultrasonic tank, electrical connections, drain, etc.)

## Re-qualification:

**All parameters of the initial qualification are measured again at Elma, documented in a checklist and current test certificates issued again.**

- Re-qualifications take place cyclically at regular intervals (e.g. annually)
- Declining device performance can thus be detected and rectified at an early stage



# About us

## Ultrasonic Technology · Cleaning Chemistry



Perfect cleaning results and irreplaceable helpers for laboratories are highly important for the efficient laboratory. With this large and thought-out product range, Elma is offering sophisticated solutions for analytics, sample preparation and for the cleaning of laboratory instruments such as sieves.

With our core competencies ultrasonic and steam cleaning technologies and our process lab with its own cleaning agent development behind us, we provide competent and reliable advice and tailor-cut cleaning solutions to our customers for even in the most difficult cleaning tasks.

Thus we provide top quality in all manufacturing stages from design and development to service and after-sales-service.

Our process laboratory develops our own - for laboratory applications optimized - cleaning agents which are produced in our plant.

A worldwide network of partners and distributors ensures high availability of equipment and systems with short response times.

Years of experience, innovative research and development as well as our lab-specific know-how make us the partner of choice for you. We consider trust and reliability to be the foundation of a sustainable partnership.

By providing you with Elma products and services, we want to contribute to your success as reliable, competent partner!



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