



SLA-CLEANING

Get yourself a time and competitive advantage:

EFFECTIVE CLEANING OF SLA 3D PRINT CONSTRUCTIONS

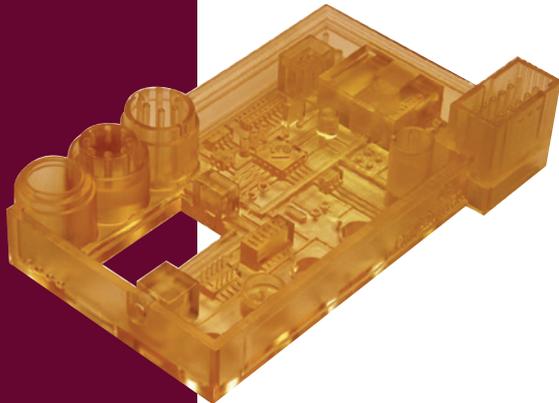
FAST | CLEAN | SAFE | ECONOMICAL

Isopropanol-free

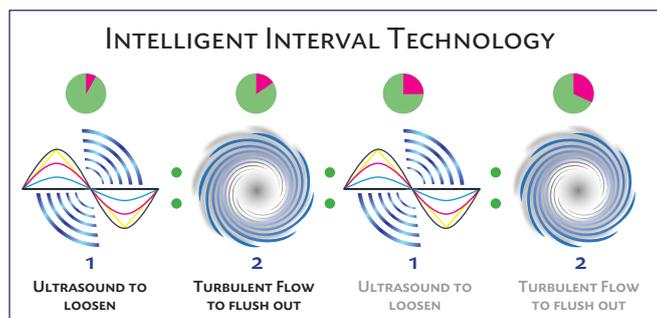
Rapid Prototyping – the fast availability of 3D prototypes is a highly topical subject. The fast production of 3D prints is in fact impressive – the availability of the final and cleaned print version instead is often delayed due to certain post processing procedures like cleaning and the removal of support structures.

Our **SLA-CLEAN 3D** systems ensure an **isopropanol-free**, fast and effective removal of resin residue without the need to involve highly inflammable solutions, which normal demand explosion-protected environments.

After extensive tests with different SLA materials regarding the ideal calibration and matching of frequency, amplitude, cleaning liquid and interval timing we can now offer a solution, helping you to clean your SLA parts under saver conditions and in a cost- and time efficient way.



THE CLEANING PROCESS



Our systems for **SLA-CLEANING** are designed to clean multiple objects simultaneously. The objects are placed into a metal basket which is placed into the system. The combined *Ultrasound/Turbulent Flow* system is controlled by an electronic interval program: The ultrasonic sequence loosens the particles; the *Turbulent Flow* sequence washes them off.

If the temperature of the liquid exceeds the definable maximum value (*due the ultrasound pressure*), the ultrasound is switched off and the cleaning continues utilising the turbulent flow only.

Once the temperature has dropped again below maximum, the system reactivates the ultrasound. After the cleaning the objects solely need to be shortly rinsed with clean water. *Depending on the kind of the material, its thickness and complexity, the cleaning will be much faster and saver than using a conventional system based on Isopropanol.*

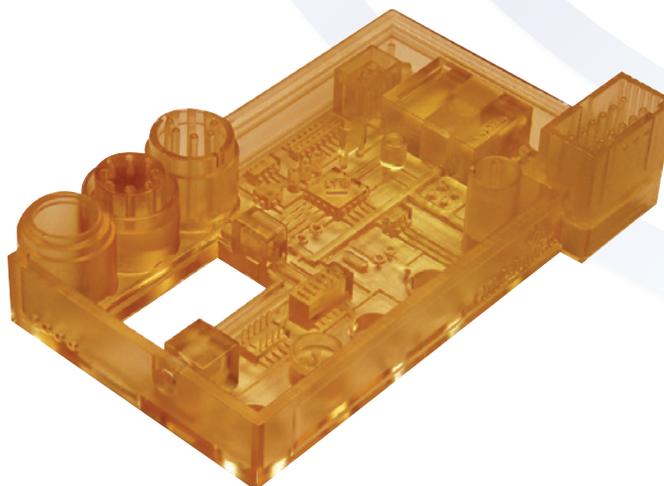
PUMP AND MATERIAL SAVING CHEMISTRY

Our dedicated developed chemistry *SUT Clean 5* is isopropanol-free, does not crystallize and therefore does not damage any pumps or piping – a very important cost saving factor in the 3D printing process.

SOLO-, DUO- AND TRIO-SYSTEMS

Our solutions are available as **Solo-systems** (one basin), **Duo-systems** (two basins) and **Trio-systems** (three basins). The optional Caddies (Drip Trays) for our cleaning systems are completely made of 2mm special stainless steel. They are amply dimensioned to (*in case of an unlikely leakage*) hold the complete content of a cleaning basin.

The functionality of the individual basins can be customised (for example **SUPPORT REMOVAL | FLUSHING | DRYING**).



BASIC PRINCIPLE OF ULTRASONIC CLEANING

Ultrasonic stands for oscillations with frequencies above 16 kHz. A highly energetic ultrasonic cleaning stimulates liquids to oscillate. The continuous compression and decompression results in intense pressure variation (*up to 1.000 bar*), which leads to strong currents in the micro level and therefore to a brush-effect, which removes particles from the top of the support structure.

Our ultrasonic based systems for cleaning SLA parts utilise frequencies and amplitude modulations which we specially developed for this application. Once these frequencies are applied to a cleaning liquid they produce millions of small continuously imploding bubbles. This process is known as cavitation. The cavitation (*electronic brushing*) allows to dissolve support structure parts or resin residue even in areas, which are difficult to access without damaging the construction material.

Our *Turbulent Flow* and *Ultrasonic based* systems outperform conventional removal methods regarding effectivity and speed and can even be used without a manual mechanical pre-removal of supporting parts.



STRICTLY SOLID COMPONENTS

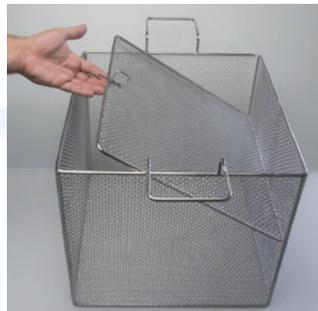
All metal parts of our systems are manufactured from high quality special stainless steel – this applies to the basins as well as to the pipes, cover plates and frames.

Efficient pumps produce an effective turbulent flow as part of the electronically controlled interval with the ultrasonic sound.



IN-HOUSE PRODUCTION

The production of the systems including the ultrasonic devices and controllers takes place in our own facilities. Therefore Schmitt Ultraschalltechnik has full control on the quality of all installed components.



VARIABLE ZONING GRIDS

The variable clampable zoning grids allow to hold down parts in the liquid as well as a vertical zoning of the basket for a targeted positioning of parts in front of (*or apart from*) the flushing openings (*e.g. to protect fragile parts*).

1 How long does the cleaning liquid last ?

For SLA cleaning (depending on workload and complexity) up to 8 weeks.

2. Which liquid should be used ?

The cleaning liquid is named SUTClean 5, undiluted usage

3. How much time does the cleaning take ?

This also depends on the material and the accessibility of the support material. The average expenditure of time is approx. 30 minutes @ 30° C

4. Which Safety Precautions must be considered?

The Ultrasound as well as the SUT Cleaner 5 require certain safety precautions like wearing protective goggles and gloves. Details are listed in the corresponding Safety Data sheets.

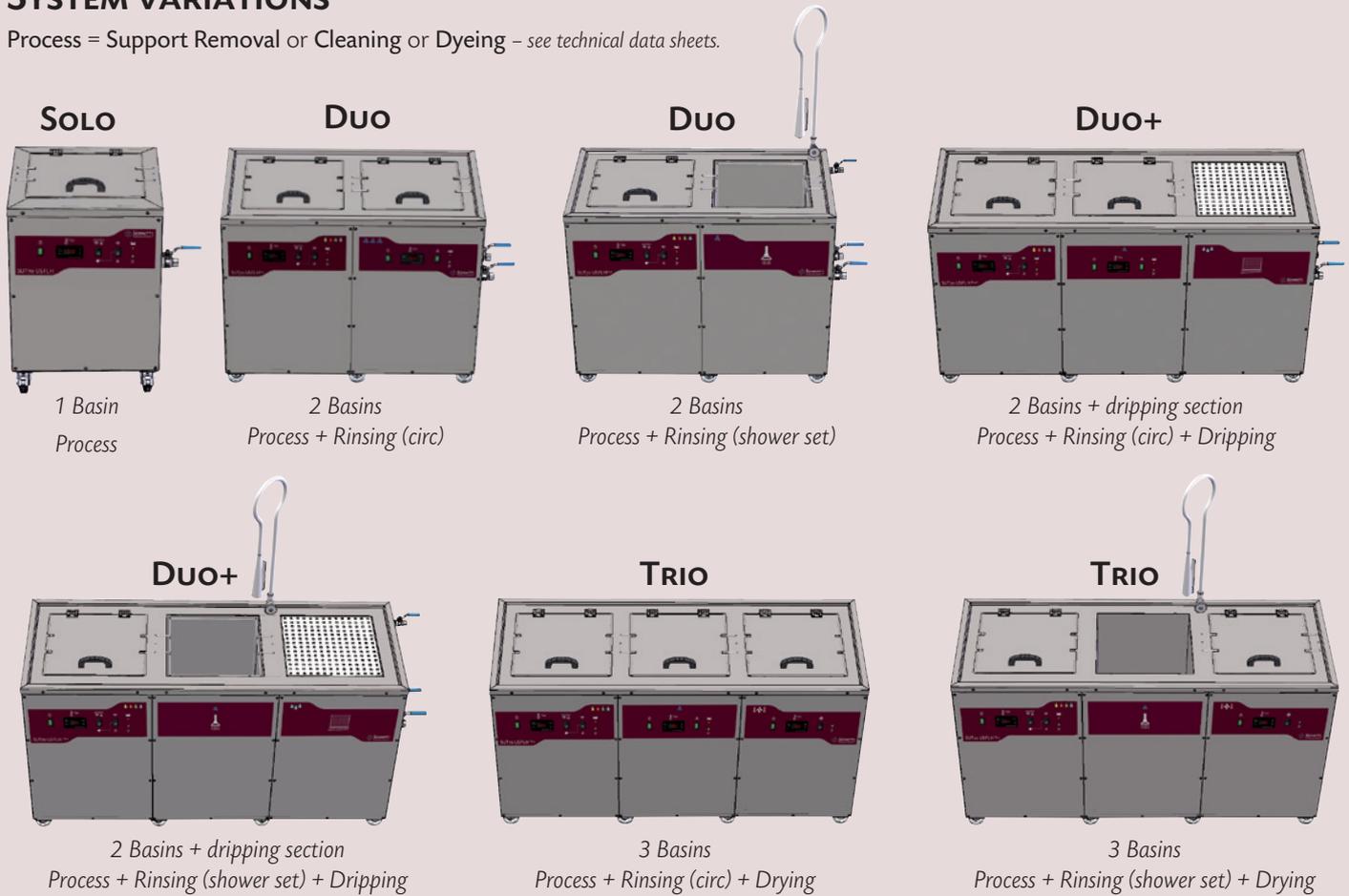
5. How can the saturated cleaner be disposed?

Because of different regional regulations we recommend to give a sample of the saturated liquid to your local water authorities for testing. They will tell you how to dispose it legally.

FAQs

SYSTEM VARIATIONS

Process = Support Removal or Cleaning or Dyeing – see technical data sheets.



BASKET DIMENSIONS	20-Liter systems	70-Liter systems	90-Liter systems	140-Liter systems
	300 x 250 x 250 mm	410 x 410 x 370 mm	480 x 430 x 450 mm	630 x 530 x 370 mm

PRODUKT KEY: **SUT** **###** **US** **FL** **H** SOLO | DUO | DUO+ | TRIO

Schmitt
Ultraschall
Technik Liter Ultra-
Sound Flow Heating

November 2021 E&OE. – Specifications and details subject to change without notice

Schmitt Ultraschalltechnik Postprocessing Solutions

SUT ## USFL for support removal of temperature sensitive 3D prints and cleaning of SLA parts

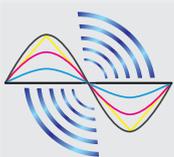
SUT ## USFLH for support removal of FDM-prints, dyeing of FDM-, Polyjet-, SLA- and PLA-Prints, cleaning of metal and plastics.

ABOUT THE MANUFACTURER

Schmitt Ultraschalltechnik GmbH serves several industry markets with special solutions for ultrasonic cleaning of miscellaneous materials and products. Besides the industrial cleaning solutions Schmitt also offers solutions for the leisure and sports markets (*specialised on cleaning plastic products – see web site for further information*).

CUSTOMISED MANUFACTURING

We offer to manufacture our systems to your specific needs. Tell us the required size and performance and we will send you a corresponding quotation. We can also help you to dimension the required system.



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