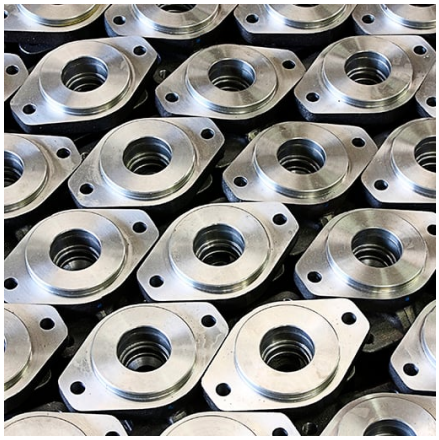
Master STAGES™ CLEAN 2021

Washing Compound for Ultrasonic and Immersion Washers

Master STAGES CLEAN 2021 is a concentrated, very high performance cleaner made for washing all metals including brass, copper alloy, and aluminum in ultrasonic or immersion washers. Its cleaning ability is extraordinary, which often leads to shorter cleaning cycles or elimination of cleaning steps. CLEAN 2021's oil rejecting properties mean longer bath life and economical operation.

Ultrasonics



Ultrasonic parts washers — widely used in the medical, aerospace, automotive, mining, energy, and precision parts industries — offer results often far beyond that of traditional cleaning methods. Master STAGES specifically developed ultrasonic in-process cleaners are highly effective in removing dirt, oils, rust, bacteria, grease, drawing compounds, waxy soil, and other contaminants from a wide variety of metals.

Whether cleaning aluminum, steels, cast iron, stainless steels, alloys, brass, bronze, copper, or magnesium, Master STAGES has the ultrasonic in-process alkaline product to get it really clean.

Offering exceptional wetting ability, reduced cycle times, longer bath life, and faster, safer precision parts cleaning, yet are environmentally friendly and free of SARA 313 reportable ingredients, Master STAGES ultrasonic cleaners are the cost-effective solution to achieving a matchless surface finish.

Choose CLEAN 2021:

- Excellent cleaning in immersion and ultrasonic tanks
- Long life because oils split rapidly to the surface of your cleaner tank where they can be skimmed off
- An excellent choice where one product is used for multiple purposes; such as washing mixed batches of ferrous, aluminum, and copper alloy parts
- Will provide extended in-process tarnish resistance on copper and copper alloy parts
- Safe on aluminum, aluminum alloy, and magnesium
- Contains no borates, phenols or nitrites, no SARA 313 or EPA 33/50 listed ingredients, and contains no butyl cellusolve
- Will remove coolant residues as well as straight oils

CLEAN 2021 especially for:

Applications — immersion tanks, parts washing, and ultrasonic tanks

Soils — chlorinated oils, coolant residues, oils, and sulfurized oils

Materials — aluminum, aluminum alloys, brass, cast iron, copper, copper alloys, ferrous metals, magnesium, yellow alloys, and zinc

Industries — aerospace, automotive, energy, and medical

CLEAN 2021 is free of — 2-butoxyethanol (Butyl), borates, EPA 33/50 listed ingredients, nitrites, phenols, and SARA 313 listed ingredients

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Application Guidelines

- In ultrasonic washers, CLEAN 2021 should be kept under 120°F (49°C).
- In agitated immersion washers, CLEAN 2021 can operate from ambient to 150°F (66°C).
- Concentrations range from 3% for washing off coolant up to 5%-10% for washing off straight oils.
- Straight oils require skimming as they will split rapidly to the surface. CLEAN 2021 has no cloud-point so foam will remain constant as temperature increases. CLEAN 2021 has been used with great results removing screw machine oils in low-pressure spray washers, such as auger/drum-style washers, where the oil helps break foam.
- CLEAN 2021 does not provide corrosion inhibition for ferrous parts. If such protection is needed, follow the washing process with Master STAGES NOCOR S2, Master STAGES NOCOR S1 or Master STAGES CLEAN 2029 (not compatible with Master STAGES CLEAN 2115).
- For additional product application information, including performance optimization, please contact your Master Fluid Solutions' Authorized Distributor at https://www.masterfluids.com/th/en-th/distributors/index.php or your District Sales Manager, or email us at thailand-info@masterfluids.com.

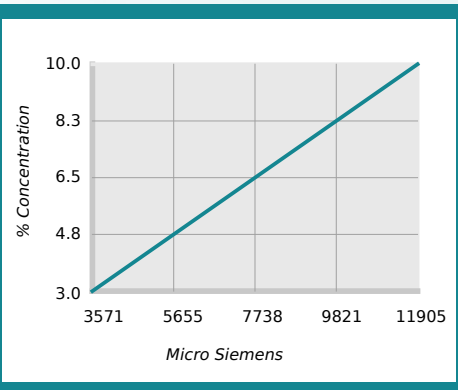
Physical Properties Typical Data

Color (Concentrate)	Light yellow
Color (Working Solution)	Colorless
Odor (Concentrate)	Mild
Form (Concentrate)	Liquid
Flash Point (Concentrate) (ASTM D92-90)	> 100°C
pH (Concentrate as Range)	13.0 - 13.5
pH (Typical Operating as Range)	11.6 - 12.6
Coolant Refractometer Factor	4.9
Cleaner Conductivity Factor	0.00084
Titration Factor (CL-1 Titration Kit)	0.59
Number of Cleaner Vials (CL-1 Titration Kit)	1
Cleaner Indicator A or B (CL-1 Titration Kit)	B

Recommended Metalworking Concentrations

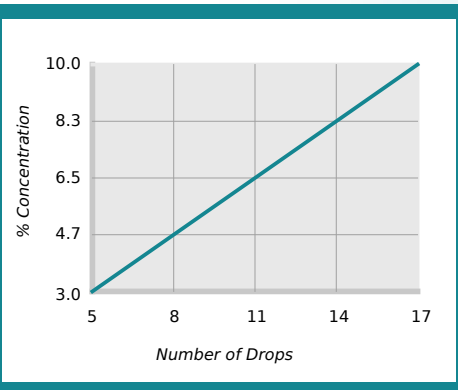
Design Concentration Range	3.0% - 10.0%

Concentration by Conductivity



% Concentration = Conductivity in Micro Siemens x Factor
Conductivity Factor = 0.00084

Concentration by Titration



% Concentration = No. of Drops x Titration Factor
Titration Factor = 0.59

Request SDS

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Mixing Instructions

- Recommended usage concentration in water: 3.0% - 10.0%.
- To help ensure the best possible working solution, add the required amount of concentrate to the required amount of water (never the reverse) and stir until uniformly mixed.

Ordering Information

20-liter pail

204-liter drum

Additional Information

- Industrial use only
- Consult Master Fluid Solutions before using on any metals or applications not specifically recommended.
- This product should not be mixed with other metalworking fluids or metalworking fluid additives, except as recommended by Master Fluid Solutions, as this may reduce overall performance, result in adverse health effects, or damage the machine tool and parts. If contamination occurs, please contact Master Fluid Solutions for recommended action.
- Master STAGES™ is a trademark of Master Chemical Corporation d/b/a Master Fluid Solutions.
- The information herein is given in good faith and believed current as of the date of publication and should apply to the current formula version. Because conditions of use are beyond our control, no guarantee, representation, or warranty expressed or implied is made. Consult Master Fluid Solutions for further information. For the most recent version of this document, please go to this URL:

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