



TECHNICAL DATA SHEET

ULTRASONIC CLEANER SOLUTION

High-Performance Aqueous Ultrasonic Detergent & Degreasing Fluid

ULTRASONIC CLEANER

Precision Industrial & Laboratory Ultrasonic Cleaning Solution

PRODUCT TECHNICAL SPECIFICATION

Product Overview: Alkemist Ultrasonic Cleaner is a heavy-duty, highly active aqueous alkaline formulation specifically engineered to enhance ultrasonic cavitation, rapidly lifting oil, grease, carbon deposits, polishing compounds, and particulate soils from metal, glass, ceramic, and jewelry surfaces.

Key Performance Benefits: Maximizes cavitation bubble energy, prevents redeposition of soils, contains active corrosion inhibitors to protect ferrous and yellow metals, and rinses completely residue-free.

Recommended Applications: Ultrasonic cleaning baths in automotive overhaul, aerospace components, medical/surgical instrument pre-cleaning, jewelry manufacturing, optical lenses, and electronic circuit board assembly washing.

Document Control

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PRODUCT CODE	ALK-UC-SOL
PHYSICAL STATE	Liquid Concentrate

Supplier / Manufacturer

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1. Typical Physical & Chemical Properties

Verified Laboratory QC Specifications: Tested in accordance with standardized analytical methods.

TECHNICAL PROPERTY	TYPICAL VALUE / SPECIFICATION	TEST METHOD / STANDARD
APPEARANCE / COLOUR	Clear to pale amber liquid	Visual Inspection @ 25°C
ODOUR	Mild detergent odour	Organoleptic Evaluation
PH (NEAT / CONCENTRATE)	9.0 - 10.5	ASTM E70 Standard Test Method
PH (DILUTED @ 5% V/V)	8.5 - 9.2	ASTM E70 Standard Test Method
SPECIFIC GRAVITY (SG @ 20°C)	1.01 - 1.05 g/cm³	Pycnometer / Density Meter
SOLUBILITY IN WATER	Complete / 100% Miscible	Aqueous solution
FOAM CHARACTERISTIC	Controlled moderate foam	Ross-Miles Foam Test
FLASH POINT	Not Applicable (Water-based)	Closed Cup Method

2. Dilution & Operating Guidelines

2.1 RECOMMENDED DILUTION RATIOS

Alkemist Ultrasonic Cleaner is supplied as a concentrated liquid and should be diluted with clean soft water prior to tank operation:

APPLICATION SEVERITY	DILUTION RATIO (% V/V)	OPERATIONAL GUIDELINES & CLEANING NOTES
LIGHT DUTY / GLASSWARE	3% - 5% v/v (30 - 50 mL per Litre)	Ideal for delicate laboratory glassware, optical components, and light dust/fingerprint removal.

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GENERAL MAINTENANCE

5% - 10% v/v
(50 - 100 mL per Litre)

Recommended for routine jewelry cleaning, machined brass/aluminum parts, and general shop grime.

HEAVY DUTY / DEGREASING

10% - 20% v/v
(100 - 200 mL per Litre)

Engineered for heavy carbon deposits, burnt-on oils, thick greases, and industrial metal scale.

2.2 BATH TEMPERATURE & SONICATION PARAMETERS

Optimum Temperature

Operate ultrasonic bath between **40°C and 60°C (104°F - 140°F)**. Elevated temperature significantly enhances surfactant wetting and cavitation efficiency.

Sonication Time

Typical immersion and cavitation cycle ranges from **5 to 15 minutes** depending on soil load and component geometry.

3. Material Compatibility & Handling

3.1 SUBSTRATE COMPATIBILITY

Safe on: Stainless steel, carbon steel, titanium, copper, brass, glass, ceramics, precious jewelry (gold/platinum without soft gemstones), and most plastics.

Caution: Prolonged immersion of unpolished aluminum alloys in hot alkaline solutions should be pre-tested for surface discoloration.

3.2 RINSING & POST-TREATMENT

Following ultrasonic immersion, components should be thoroughly rinsed with clean demineralized or tap water to remove dislodged soils and detergent residues before drying.

3.3 STORAGE & SHELF LIFE

Store in original sealed containers in a cool, dry area away from direct sunlight between 5°C and 35°C. Shelf life is 24 months from the date of manufacture when stored correctly.

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