



Product Info Sheet

M-301

General Description

ArmaKleen™ M-301 is an aggressive alkaline liquid cleaner designed specifically for cleaning difficult to remove contaminants from steel. It may also be used on brass and copper alloys provided the parts are rinsed immediately after cleaning. ArmaKleen M-301's design allows for its use in spray, ultrasonic and immersion parts washers. The non-emulsifying formula can be used effectively with oil skimming and coalescing systems to allow soil removal and extend cleaning bath life.

ArmaKleen M-301 is the cleaner to use when you need very high pH, have baked on carbon and similar tough soils, and you are cleaning ferrous metals like iron or steel.

ArmaKleen M-301 is not for use on aluminum. The high pH formulation will damage aluminum.

When left on metal surfaces, ArmaKleen M-301 provides temporary indoor rust protection during storage and between operations. The amount of rust protection is dependent on environmental conditions of the facility.

<i>Features</i>	<i>Benefits</i>
Cleaner/Rust Preventative	Cleans and protects steel and iron from rusting
Low foaming	Will not foam in spray applications
Versatile	Can be used in spray, ultrasonic and immersion parts washers
Oil splitting	Allows for easy removal of soils for extended cleaner life
No phosphates	Better for the environment
No VOC's	Meets EPA Emissions Test 24
Non-flammable	Increased worker safety
NSF Approved	Certified as an A-1 Cleaner

Operating Parameters

pH of Concentrate: 13.8
 pH of 10% by volume dilution: 13.2

Equipment Type	M-301 Concentration	Washer Temperature
Spray Washer	10%	130°F to 190°F
Ultrasonic Washer	10%	110°F to 190°F
Immersion Washer	10%	110°F to 190°F

Safety-Kleen Part Numbers

ArmaKleen™ Product (55 Gallon Drum) SK P/N: 6438
 ArmaKleen™ Product (5 Gallon Pail) SK P/N: 6338

Additives

ArmaKleen M-Defoamer HD SK P/N 6310 (Pints – 8 per case)
 ArmaKleen M-RP (for added rust protection) SK P/N 6342 (5-gallon pail)

Soil Compatibility

Heavy grease, oil, metalworking coolants, drawing, stamping compounds and rust preventatives

Substrate Compatibility

Steel, stainless steel, cast iron, copper, brass and other ferrous alloys

Compliance Information



Titration Information

SK P/N 4623 Total Alkalinity Titration Kit (order through branch SAP)

Procedure

1. Fill graduated cylinder with 5 mL of ArmaKleen M-301 cleaning solution. The bottom curve of the solution should touch the top of the indicated line.
2. Pour the measured amount of cleaning solution from the graduated cylinder into the Erlenmeyer titration flask. Rinse the cylinder with 5-8 mL of water and transfer it to the same flask.
3. Add 5 drops of Bromocresol Green-Methyl Red Indicator Solution (small dropper bottle) to the flask and mix to produce a blue color. Clean water may be added to dirty solutions to see the color change more clearly. Several more drops of indicator solution may also be added if the solution is excessively dirty.
4. Carefully add 1.0N Sulfuric Acid (square dropper bottle) one drop at a time to the flask, swirling the flask after each drop. Count the number of drops.
5. When the solution changes to a greenish brown or tan color you are near the end point. Continue adding and counting the number of drops until the solution turns to a peach or bright pink color and the addition of one more drop does not cause any further color change.
6. Use the titration table to find the cleaner concentration from the number of drops of acid used.
7. Wash the test solution down a sink with water. Rinse the graduated cylinder and mixing flask well before storing in the case.

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TITRATION TABLE																						
% CLEANER CONCENTRATION																						
Cleaner	mls	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	25
Sample		DROPS OF ACID REQUIRED FOR COLOR CHANGE																				
M-301	5	5	8	12	16	20	24	29	32	36	40	44	48	52	56	61	65	70	73	76	80	100

Precautions

DO NOT use this product on aluminum or other non-ferrous metals. These alloys will be damaged by contact with ArmaKleen M-301.

Foaming may occur in high pressure (above 60 psi) spray systems or at operating temperatures below 130°F.

IMPORTANT: The information presented in this product labeling and literature, while not guaranteed, is true and accurate to the best of our knowledge. No warranty, express or implied, is made regarding performance, stability or otherwise. Such information is not intended to be all-inclusive, and the manner and conditions of particular uses may involve other or additional preparatory, performance or safety considerations. While our technical personnel will be happy to respond to questions, safe, effective handling and use remains the responsibility of the user.