



**ArmaKleen® M-400**

**MATERIAL SAFETY DATA SHEET FOR USA AND CANADA**

**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** ArmaKleen® M-400

**SYNONYM(S):** Not available.

**PRODUCT PART NUMBERS:** 6346, 6446

**PRODUCT USE:** Aqueous, concentrated cleaner that is diluted with water for cleaning a variety of materials in high-pressure spray and immersion machines. If this product is used in combination with other products, refer to the Material Safety Data Sheets for those products.

	<b>24-HOUR EMERGENCY PHONE NUMBERS</b>	
	<b>MEDICAL:</b>	<b>TRANSPORTATION (SPILL):</b>
These numbers are for emergency use only. If you desire non-emergency product information, please call a phone number listed below.	1-800-752-7869	1-800-468-1760 (USA)
	Extension 2	1-613-996-6666 (CANADA)
	or	(call collect)
	1-312-906-6194	

**MANUFACTURER:**  
The ArmaKleen Company  
469 North Harrison Street  
Princeton, NJ 08543  
USA  
(609) 683-5900

**SUPPLIER:**  
Safety-Kleen Systems, Inc.  
5400 Legacy Drive, Cluster II, Building 3  
Plano, TX 75024  
USA  
(972) 265-2000

**TECHNICAL INFORMATION:** 1-800-332-5424

**SAFETY-KLEEN MSDS FORM NUMBER:** 82866  
**THE ARMAKLEEN COMPANY MSDS NUMBER:** 857

**ISSUE:** October 24, 2002

**ORIGINAL ISSUE:** October 2000

**SUPERSEDES:** February 14, 2002

**PREPARED BY:** ArmaKleen MSDS Coordinator

**APPROVED BY:** The ArmaKleen Company

**ArmaKleen® M-400**  
**MATERIAL SAFETY DATA SHEET FOR USA AND CANADA**

**SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS**

WT%	NAME	SYNONYM	CAS NO.	OSHA PEL		ACGIH TLV®		LD <sup>a</sup>	LC <sup>b</sup>
				TWA	STEL	TWA	STEL		
7 to 13	Potassium Bicarbonate	Potassium acid carbonate	298-14-6	N. Av.	N. Av.	N. Av.	N. Av.	>5000	N. Av.
1 to 5	Potassium Carbonate	Potash	584-08-7	15mg/m <sup>3,c</sup>	N. Av.	10mg/m <sup>3,c</sup>	N. Av.	2000	>4.96mg/L
1 to 5	Phosphonic acid, sodium salt	N. Av.	2235-43-0	N. Av.	N. Av.	N. Av.	N. Av.	>17,800	N. Av.
1 to 5	D-gluconic acid	Sodium gluconate	527-07-1	N. Av.	N. Av.	15mg/m <sup>3,c</sup>	N. Av.	N. Av.	N. Av.
1 to 5	Carboxylic acid amine mixture	N. Av.	Mixture	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.
1 to 5	Propylene glycol ether	N. Av.	29911-28-2	N. Av.	N. Av.	N. Av.	N. Av.	>4400	N. Av.
0.1 to 1	Potassium Hydroxide	Caustic potash	1310-58-3	N. Av.	N. Av.	2mg/m <sup>3</sup> (ceiling)	N. Av.	273	N. Av.

N.Av. = Not Available

<sup>a</sup>Oral-Rat LD<sub>50</sub> (mg/kg)

<sup>b</sup>Inhalation LC<sub>50</sub>

<sup>c</sup>Particulates not otherwise classified

**SECTION 3: HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW**

**APPEARANCE**

Liquid, clear, yellow, and mild detergent odor.

**CAUTION!**

**HEALTH HAZARDS**

May irritate the respiratory tract (nose, throat, and lungs), eyes, and skin.

**POTENTIAL HEALTH EFFECTS**

**INHALATION**

**(BREATHING):**

High concentrations of vapor or mist may irritate the respiratory tract (nose, throat, and lungs).

**EYES:**

May cause moderate to severe irritation

**SKIN:**

May cause irritation. Not likely to be absorbed through the skin in harmful amounts

**INGESTION**

**(SWALLOWING):**

May cause digestive tract irritation.

**MEDICAL CONDITIONS**

**AGGRAVATED BY**

**EXPOSURE:**

Individuals with pre-existing respiratory tract (nose, throat, and lungs), eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

**ArmaKleen® M-400**

**MATERIAL SAFETY DATA SHEET FOR USA AND CANADA**

---

**CHRONIC EFFECTS:** Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis) and/or burns.

**CANCER INFORMATION:** No known carcinogenicity. For more information, see **SECTION 11: CARCINOGENICITY**.

**POTENTIAL ENVIRONMENTAL EFFECTS**

Not available. Also see **SECTION 12: ECOLOGICAL INFORMATION**.

**SECTION 4: FIRST AID MEASURES**

**INHALATION: (BREATHING)** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Someone should stay with victim. Get medical attention if breathing difficulty persists.

**EYES:** If irritation or redness from exposure to vapor develops, move away from exposure into fresh air and flush eyes with water for 5 minutes. Upon direct contact with liquid, immediately flush eyes with plenty of lukewarm water, holding eyelids apart, for 15 minutes. Get medical attention.

**SKIN:** Remove affected clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention if irritation or pain develops or persists.

**INGESTION: (SWALLOWING)** Immediately get medical attention. Call medical emergency telephone number (1-800-752-7869, extension 2 or 1-312-906-6194) for additional information. Give water to drink. DO NOT induce vomiting. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything to an unconscious person by mouth.

**NOTE TO PHYSICIANS:** Treat symptomatically and supportively. Avoid gastric lavage. Treatment may vary with condition of victim and specifics of incident. Call 1-800-752-7869, extension 2 or 1-312-906-6194 for additional information.

**SECTION 5: FIRE FIGHTING MEASURES**

**FLASH POINT:** None (ASTM D 56 – Standard Method by Tag Closed Tester)

**FLAMMABLE LIMITS IN AIR:** None

**AUTOIGNITION TEMPERATURE:** None

# ArmaKleen® M-400

## MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

### HAZARDOUS COMBUSTION PRODUCTS:

Product itself does not burn, but may decompose upon heating to produce carbon monoxide, carbon dioxide, and oxides of nitrogen and potassium.

### CONDITIONS OF FLAMMABILITY:

Product will not burn.

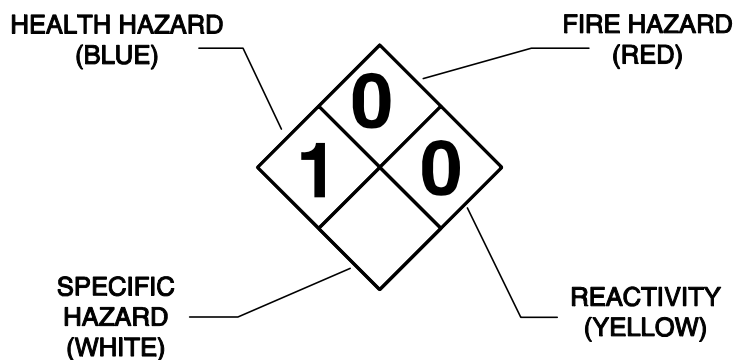
### EXTINGUISHING MEDIA:

Not applicable.

### NFPA 704

### HAZARD IDENTIFICATION:

This information is intended solely for the use by individuals trained in this system.



### FIRE FIGHTING INSTRUCTIONS:

Keep storage containers cool with water spray. A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

### FIRE AND EXPLOSION HAZARDS:

“Empty” containers may retain residue and can be hazardous. Not sensitive to mechanical impact or static discharge.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

Spilled product is slippery. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. Contain away from surface waters and sewers. Neutralize the spill with dilute acid to lower pH. Contain spill as a liquid for possible recovery or sorb with compatible sorbent material and shovel with a clean tool into a sealable container for disposal.

Additionally, for large spills: Dike far ahead of liquid spill for collection and later disposal.

There may be additional regulatory reporting requirements associated with spills, leaks, or releases of this product. Also see **SECTION 15: REGULATORY INFORMATION**.

**ArmaKleen® M-400**  
**MATERIAL SAFETY DATA SHEET FOR USA AND CANADA**

---

**SECTION 7: HANDLING AND STORAGE**

**HANDLING:** Do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing, and shoes.

**SHIPPING AND STORING:** Keep container tightly closed when not in use and during transport. Store containers in a cool, dry place. Empty product containers may retain product residue and can be hazardous. See **SECTION 14: TRANSPORT INFORMATION** for Packing Group information.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**ENGINEERING CONTROLS:** Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT**

**RESPIRATORY PROTECTION:** Use NIOSH-certified, combination N-, P-, or R- series particulate filter respiratory protective equipment when concentration of vapor or mist exceeds applicable exposure limits. Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

**EYE PROTECTION:** Where eye contact is likely, wear chemical goggles; contact lens use is not recommended.

**SKIN PROTECTION:** Where skin contact is likely, wear nitrile, neoprene, or equivalent protective gloves; use of polyvinyl alcohol (PVA), natural rubber, or equivalent gloves is not recommended.

To avoid skin contact where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, whole body suits, or other protective clothing.

**PERSONAL HYGIENE:** Use good personal hygiene. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco products. Clean affected clothing, shoes, and protective equipment before reuse. Discard affected clothing, shoes, or protective equipment if they cannot be thoroughly cleaned. Discard leather articles, such as shoes, saturated with the product.

**ArmaKleen® M-400**

**MATERIAL SAFETY DATA SHEET FOR USA AND CANADA**

---

**OTHER PROTECTIVE EQUIPMENT:** Where spills and splashes are likely, facilities storing or using this product should be equipped with an emergency eyewash and shower, both equipped with clean water, in the immediate work area.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**PHYSICAL STATE, APPEARANCE, AND ODOR:** Liquid, clear, yellow, and mild detergent odor.

**ODOR THRESHOLD:** Not available.

**MOLECULAR WEIGHT:** Not available.

**SPECIFIC GRAVITY:** 1.07 (water = 1)

**DENSITY:** 8.93 LB/US gal (1070 g/L)

**VAPOR DENSITY:** less than 1 (air = 1)

**VAPOR PRESSURE:** 17.5 mm Hg at 68°F (20°C) (approximately)

**BOILING POINT:** 212°F (100°C)

**FREEZING/MELTING POINT:** 32°F (0°C)

**pH:** 9.4

**EVAPORATION RATE:** Less than 1 (butyl acetate = 1)

**SOLUBILITY IN WATER:** Complete.

**FLASH POINT:** None (ASTM D56-Standard Method by Tag Closed Tester)

**FLAMMABLE LIMITS IN AIR:** None.

**AUTOIGNITION TEMPERATURE:** None.

**ArmaKleen® M-400**  
**MATERIAL SAFETY DATA SHEET FOR USA AND CANADA**

---

**SECTION 10: STABILITY AND REACTIVITY**

- STABILITY:** Stable under normal temperatures and pressures.
- INCOMPATIBILITY:** Avoid acids, oxidizing agents, and reducing agents.
- REACTIVITY:** Polymerization is not known to occur under normal temperatures and pressures. Not reactive with water.
- HAZARDOUS DECOMPOSITION PRODUCTS:** None under normal temperatures and pressures. See also **SECTION 5: HAZARDOUS COMBUSTION PRODUCTS.**

**SECTION 11: TOXICOLOGICAL INFORMATION**

- SENSITIZATION:** Based on best current information, there is no known human sensitization associated with this product.
- MUTAGENICITY:** Based on best current information, there is no known mutagenicity associated with this product.
- CARCINOGENICITY:** Based on best current information, there is no known carcinogenicity as regulated by OSHA; as categorized by ACGIH A1 or A2 substances; as categorized by IARC Group 1, Group 2A, or Group 2B agents; or as listed by NTP as either known carcinogens or substances for which there is limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals.
- REPRODUCTIVE TOXICITY:** Based on best current information, there is no known reproductive toxicity associated with this product.
- TERATOGENICITY:** Based on best current information, there is no known teratogenicity associated with this product.
- TOXICOLOGICALLY SYNERGISTIC PRODUCT(S):** Based on best current information, there are no known toxicologically synergistic products associated with this product.

**ArmaKleen® M-400**  
**MATERIAL SAFETY DATA SHEET FOR USA AND CANADA**

**SECTION 12: ECOLOGICAL INFORMATION**

**ECOTOXICITY:** No data available.

**OCTANOL/WATER  
PARTITION COEFFICIENT:** Not available.

**VOLATILE ORGANIC  
COMPOUNDS:** Contains 31.3 g/L VOC (as soaps and detergents)  
as per EPA Method 24

**SECTION 13: DISPOSAL CONSIDERATIONS**

**DISPOSAL:** Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-Kleen regarding recycling or proper disposal.

**USEPA HAZARDOUS  
WASTE CODE(S):** This product, if discarded is not expected to be a characteristic or listed hazardous waste. Processing, use, or contamination by the user may change the waste code(s) applicable to the disposal of this product.

**SECTION 14: TRANSPORT INFORMATION**

**DOT:** Not regulated.

**TDG:** Not classified.

**EMERGENCY RESPONSE  
GUIDE NUMBER:** Not applicable.  
Reference *North American Emergency Response Guidebook*

**SECTION 15: REGULATORY INFORMATION**

**USA REGULATIONS**

**SARA SECTIONS  
302 AND 304:** This product does not contain any "extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B.

**SARA SECTIONS  
311 AND 312:** This product poses the following health hazards as defined in 40 CFR Part 370 and is subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):  
Immediate (Acute) Health Hazard



**ArmaKleen® M-400**  
**MATERIAL SAFETY DATA SHEET FOR USA AND CANADA**

---

**SARA SECTION 313:** This product does not contain toxic chemicals subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

**CERCLA:** This product contains the following "hazardous substance" listed under the Comprehensive Environmental Response, compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4 with the following reportable quantity (RQ):

Material	CAS	RQ
Potassium hydroxide	1310-58-3	1000 LB (454 kg)

**TSCA:** All the components of this product are listed on, or exempted from the requirement to be listed on, the TSCA Inventory.

**CALIFORNIA:** This product does not contain detectable amounts of any chemical known to the State of California to cause cancer.

This product does not contain detectable amounts of any chemical known to the State of California to cause birth defects or other reproductive harm.

**CANADIAN REGULATIONS**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**WHMIS:** D2B

**CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA):**

All the components of this product are listed on the Canadian Domestic Substances List (DSL).

<b>SECTION 16: OTHER INFORMATION</b>
--------------------------------------

**REVISION INFORMATION:** Change Supplier address in section 1. Update VOC information in Section 12.

**LABEL/OTHER INFORMATION:** Not available.

---

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, The ArmaKleen Company assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either express or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet apply to the product as supplied to the user.

©2001 Printed in the USA.