



## Safety Data Sheet

Material Name: ARMAKLEEN™ BIO 24 SOLUTION

SDS ID: 820236

### Section 1 - PRODUCT AND COMPANY IDENTIFICATION

**Material Name**

ARMAKLEEN™ BIO 24 SOLUTION

**Product Code**

Not applicable.

**Product Use**

Cleaner, suitable for spray, immersion, or manual parts washer operations. ArmaKleen BIO 24 Solution is certified by California's South Coast Air Quality Management District (SCAQMD) as a Clean Air Solvent (CAS). Also see Section 9: Volatile Organic Compounds. If this product is used in combination with other products, refer to the Safety Data Sheet for those products.



*This product is a USDA Certified BioPreferred Product.  
Diluted for Use Product (5 and 10% solutions) meet Green Seal™ Standard GS-34 based on effective performance and protective limits on: VOCs, ozone depleting chemicals, and human & environmental toxicity. GreenSeal.org.*

**Restrictions on Use**

For professional use only.

**Details of the supplier of the safety data sheet**

**MANUFACTURER**

Safety-Kleen Systems, Inc.  
42 Longwater Drive  
Norwell, MA 02061-9149 U.S.A.  
Phone: 1-800-669-5740  
[www.safety-kleen.com](http://www.safety-kleen.com)

**SUPPLIER (in the U.S.A.)**

Safety-Kleen Systems, Inc.  
42 Longwater Drive  
Norwell, MA 02061-9149  
Phone: 1-800-669-5740  
[www.safety-kleen.com](http://www.safety-kleen.com)

**SUPPLIER (in Canada)**

Safety-Kleen Canada Inc.  
25 Regan Road  
Brampton, Ontario, Canada L7A 1B2  
Phone: 1-800-669-5740

**Emergency Telephone Number**

1-800-468-1760

**Issue Date**

January 21, 2025

**Supersedes Issue Date**

May 5, 2021

**Original Issue Date**

May 31, 2017

### Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with Schedule 1 of Canada's Hazardous Products Regulations (HPR) (SOR/2015-17) and paragraph (d) of 29 CFR 1910.1200 in the United States

None needed according to classification criteria

**GHS Label Elements**

Symbol(s)

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None needed according to classification criteria

## Signal Word

None needed according to classification criteria

## Hazard Statement(s)

None needed according to classification criteria.

## Precautionary Statement(s)

## Prevention

None needed according to classification criteria.

## Response

None needed according to classification criteria.

## Storage

None needed according to classification criteria. Do not store below 40°F (4.4°C)

## Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

## Other Hazards

Contact with heated product can cause serious thermal burns.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
7732-18-5	Water	>98
6132-04-3	Trisodium citrate dihydrate	0.5-0.6
1984-06-1	Sodium caprylate	0.4-0.5
68987-81-5	Poly ethoxylated alcohol	0.1-0.2
61791-26-2	Poly ethoxylated tallow amine	0.1-0.2

## Section 4 - FIRST AID MEASURES

### Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

### Skin

IF ON SKIN: Take off contaminated clothing and wash before reuse. Rinse skin with water/shower. Wash contaminated clothing before reuse. If skin irritation occurs: Call a POISON CENTER or doctor. For thermal burns cause by contact with hot product, remove affected clothing and shoes. Wash skin thoroughly with cool water. Apply cool-packs or ice.

### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

### Ingestion

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor if you feel unwell.

### Most Important Symptoms/Effects

#### Acute

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May cause irritation. Contact with heated product can cause severe burns to the eyes and skin and can result in permanent eye damage.

## Delayed

No information on significant adverse effects.

## Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

## Section 5 - FIRE FIGHTING MEASURES

### Extinguishing Media

#### Suitable Extinguishing Media

Use extinguishing agents appropriate for surrounding fire.

#### Unsuitable Extinguishing Media

Do not use high-pressure water streams.

### Special Hazards Arising from the Chemical

Heated material may cause thermal burns.

### Hazardous Combustion Products

Decomposition and combustion materials may be toxic. Burning may produce oxides of carbon.

### Advice for firefighters

Containers may rupture if heated or exposed to continual naked flame.

### Fire Fighting Measures

Move container from fire area if it can be done without risk. Keep storage containers cool with water spray. "Empty" containers may retain residue and can be dangerous. Product is not sensitive to mechanical impact or static discharge.

### Special Protective Equipment and Precautions for Firefighters

A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

## Section 6 - ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

### Methods and Materials for Containment and Cleaning Up

Spilled product is slippery. Do not touch or walk through spilled product. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. Contain spill away from surface water and sewers. 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.

## Section 7 - HANDLING AND STORAGE

### Precautions for Safe Handling

Keep away from naked flame. Do not breathe dust or vapors. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling.

### Conditions for Safe Storage, Including any Incompatibilities

None needed according to classification criteria. Do not store below 40°F (4.4°C). Keep container tightly closed when not in use and during transport. Store containers in a cool, dry place. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from naked flame. Empty product containers may retain product residue and can be dangerous.

### Incompatible Materials

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Strong oxidizing materials, acids, combustible materials, halocarbons, metals, halogens, peroxides, metal salts, bases, reducing agents.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### Component Exposure Limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

### ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

### Engineering Controls

Provide general ventilation. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls.

### Individual Protection Measures, such as Personal Protective Equipment

#### Eye/face protection

Wear safety glasses. Additional protection like goggles, face shields, or respirators may be needed dependent upon anticipated use and concentrations of mists or vapors. Eye wash fountain and emergency showers are recommended. Contact lens use is not recommended.

#### Respiratory Protection

A respiratory protection program which meets USA's OSHA General Industry Standard 29 CFR 1910.134 or Canada's CSA Standard Z94.4-M1982 requirements must be followed whenever workplace conditions warrant a respirator's use. Consult a qualified Industrial Hygienist or Safety Professional for respirator selection guidance.

#### Skin Protection/Glove Recommendations

Where skin contact is likely, wear gloves impervious to product; use of natural rubber (latex) or equivalent gloves is not recommended. To avoid prolonged or repeated contact where spills and splashes are likely, wear appropriate chemical-resistant face shield, boots, apron, whole body suits or other protective clothing. When product is heated and skin contact is likely, wear heat-resistant gloves, boots, and other protective clothing.

#### Protective Materials

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to regulatory requirements. The following PPE should be considered the minimum required: Safety glasses, gloves, lab coat or apron.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Pale yellow liquid	<b>Physical State</b>	Liquid
<b>Odor</b>	Mild odor	<b>Color</b>	Not available
<b>Odor Threshold</b>	Not available	<b>pH</b>	9.8-10
<b>Melting Point</b>	Not available	<b>Boiling Point</b>	212 °F (100 °C)
<b>Freezing point</b>	Not available	<b>Evaporation Rate</b>	Same as water
<b>Boiling Point Range</b>	Not available	<b>Flammability (solid, gas)</b>	Not available
<b>Autoignition</b>	Not available	<b>Flash Point</b>	None

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<b>Lower Explosive Limit</b>	Not available	<b>Decomposition temperature</b>	Not available
<b>Upper Explosive Limit</b>	Not available	<b>Vapor Pressure</b>	17.45 mmHg at 20 °C
<b>Vapor Density (air=1)</b>	Not available	<b>Specific Gravity (water=1)</b>	1.01
<b>Water Solubility</b>	Soluble	<b>Partition coefficient: n-octanol/water</b>	Not available
<b>Viscosity</b>	Same as water	<b>Solubility (Other)</b>	Not available
<b>Density</b>	1.01 g/mL	<b>Molecular Weight</b>	Not available
<b>Volatile Organic Compounds (As regulated)</b>	5% Solution: 0.64 WT%; 0.058 LB/US gal; 7 g/L 10% Solution: 1.1 WT%; 0.20 LB/US gal; 12 g/L Product Vapor Pressure @20°C = 17.5 mmHg ; VOC Content is less than 25 grams/liter: This solution is explicitly listed as either an “exempted” or a “Clean Air Solvent” by the South Coast Air Quality Management District (SCAQMD) because it does not contain reactive volatile organic compounds (VOCs) that can react with sunlight and nitrogen-dioxides to create ground-based ozone (smog). Consult with your state/local air pollution control agency and their rules/regulations for specific direction in your specific area. <a href="http://www.aqmd.gov">www.aqmd.gov</a>		

## Section 10 - STABILITY AND REACTIVITY

### Reactivity

No reactivity hazard is expected.

### Chemical Stability

Stable under normal temperatures and pressures.

### Possibility of Hazardous Reactions

Will not polymerize.

### Conditions to Avoid

Avoid naked flame and direct sunlight.

### Incompatible Materials

Strong oxidizing materials, Acids, combustible materials, halocarbons, metals, halogens, peroxides, metal salts, bases, reducing agents

### Hazardous decomposition products

None under normal temperatures and pressures. See also SECTION 5: HAZARDOUS COMBUSTION PRODUCTS.

## Section 11 - TOXICOLOGICAL INFORMATION

### Information on Likely Routes of Exposure

#### Inhalation

May cause irritation.

#### Skin Contact

May cause irritation. Contact with diluted heated product may cause serious thermal burns.

#### Eye Contact

May cause irritation

#### Ingestion

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May cause irritation, nausea, vomiting, stomach pain.

## Acute and Chronic Toxicity

### Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Water (7732-18-5)

Oral LD50 Rat >90 mL/kg

## Immediate Effects

May cause irritation.

## Delayed Effects

No information on significant adverse effects.

## Irritation/Corrosivity Data

May cause irritation. Contact with heated material may cause burns.

## Respiratory Sensitization

No information available for the product.

## Dermal Sensitization

No information available for the product.

## Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA

## Germ Cell Mutagenicity

No information available for the product.

## Tumorigenic Data

No information available for the product.

## Reproductive Toxicity

No information available for the product.

## Specific Target Organ Toxicity - Single Exposure

No target organs identified.

## Specific Target Organ Toxicity - Repeated Exposure

No target organs identified.

## Aspiration hazard

Not expected to be an aspiration hazard.

## 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.

## Additional Data

No additional information is available.

## Section 12 - ECOLOGICAL INFORMATION

### Component Analysis - Aquatic Toxicity

No information available for the product.

### Invertebrate Toxicity

No information available for the product.

### Persistence and Degradability

No information available for the product.

### Bioaccumulative Potential

No information available for the product.

### Mobility

No information available for the product.

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## Section 13 - DISPOSAL CONSIDERATIONS

**Disposal Methods**

Dispose of used and unused product 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 ArmaKleen regarding proper recycling or disposal.

## Section 14 - TRANSPORT INFORMATION

**US DOT Information:** Not regulated for transport.

**ICAO Information:** Not regulated for transport.

**IMDG Information:** Not regulated for transport.

**TDG Information:** Not regulated for transport.

International Bulk Chemical Code

This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

## Section 15 - REGULATORY INFORMATION

**U.S. Federal Regulations**

None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

**SARA Section 311/312 (40 CFR 370 Subparts B and C)**

**Acute Health: No Chronic Health: No Fire: No Pressure: No Reactivity: No**

**U.S. State Regulations**

None of this product's components are listed on the state lists from CA, MA, MN, NJ or PA

**Not listed under California Proposition 65**

**Canadian WHMIS Ingredient Disclosure List (IDL)**

The components of this product are either not listed on the IDL or present below the threshold limit listed on the IDL.

**WHMIS Classification**

Not Classified.

**Component Analysis - Inventory**

**Water (7732-18-5)**

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	No	Yes	No
KR - REACH CCA		MX	NZ	PH	TH-TECI	TW	VN (Draft)	
No		Yes	Yes	Yes	Yes	Yes	Yes	

**Trisodium citrate (68-04-2)**

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

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KR - REACH CCA	MX	NZ	PH	TH-TECI	TW	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

**Sodium caprylate (1984-06-1)**

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No
KR - REACH CCA		MX	NZ	PH	TH-TECI	TW	VN (Draft)	
No		No	Yes	Yes	No	Yes	Yes	

## Section 16 - OTHER INFORMATION

**Other Information**

This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR).

**NFPA Ratings**

Health: 1 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

**Summary of Changes**

Update to logo and Manufacturer information.

**Key / Legend**

ACGIH - American Conference of Governmental Industrial Hygienists; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania\*; CAS - Chemical Abstracts Service; CFR - Code of Federal Regulations (US); CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CPR - Controlled Products Regulations; DOT - Department of Transportation; DSL - Domestic Substances List; EPA - Environmental Protection Agency; F - Fahrenheit; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NDSL - Non-Domestic Substance List (Canada); NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; RCRA - Resource Conservation and Recovery Act; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; WHMIS - Workplace Hazardous Materials Information System (Canada).

**Other Information**

**Disclaimer:**

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, ArmaKleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or of any



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other nature are made hereunder with respect to the information or the product to which the information refers. The data contained on this sheet apply to the product as supplied to the user.