Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
ARMAKLEEN™ BIO 24

Product Code
Not available.

Product Use
Cleaner. This product must be diluted prior to use. Diluted product is suitable for spray, immersion, or manual parts washer operation. 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 commercial use only.

MANUFACTURER
Church & Dwight
The ArmaKleen™ Company
469 North Harrison Street
Princeton, NJ 08543
Phone: (800) 332-5424
www.churchdwight.com

SUPPLIER
Safety-Kleen Systems, Inc.
2600 North Central Expressway
Suite 200
Richardson, TX 75080
Phone: 1-800-669-5740
www.safety-kleen.com

IMPORTER/DISTRIBUTOR
Safety-Kleen Canada Inc.
25 Regan Road
Brampton, Ontario, Canada L1A 1B2
Phone: 1-800-669-5740

Emergency Telephone Number
Medical: 1-888-234-1828 Chemical: 1-800-424-9300 (CHEMTREC)

Issue Date
May 31, 2017

Supersedes Issue Date
New Issue SDS

Original Issue Date
May 31, 2017

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with Schedule 1 of Hazardous Products Regulations (HPR)(SOR/2015-17) and paragraph (d) of 29 CFR 1910.1200.
Corrosive to Metals - Category 1
Safety Data Sheet

GHS Label Elements

Symbol(s)

Signal Word
Warning

Hazard Statement(s)
May be corrosive to metals.

Precautionary Statement(s)

Prevention
Keep only in original container.

Response
Absorb spillage to prevent material damage.

Storage
Store in corrosive resistant container with a resistant inner liner.

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

Other Hazards
None known.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS</th>
<th>Component Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>59-65</td>
</tr>
<tr>
<td>68-04-2</td>
<td>Trisodium citrate dihydrate</td>
<td>11-12.5</td>
</tr>
<tr>
<td>1984-06-1</td>
<td>Sodium caprylate</td>
<td>8.6-9.5</td>
</tr>
<tr>
<td>68439-45-2</td>
<td>Poly ethoxylated alcohol</td>
<td>3.3-3.7</td>
</tr>
<tr>
<td>61791-26-2</td>
<td>Poly ethoxylated tallow amine</td>
<td>3.1-3.5</td>
</tr>
</tbody>
</table>

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: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

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: Call a POISON CENTER or doctor/physician if you feel unwell.
Most Important Symptoms/Effects
Acute
May cause eye and skin irritation.

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
Carbon dioxide, regular foam, dry chemical, Water spray, water fog. Water or foam may cause frothing.

Unsuitable Extinguishing Media
Do not use high-pressure water streams.

Special Hazards Arising from the Chemical
Negligible fire hazard. Avoid friction, static electricity and sparks.

Hazardous Combustion Products
Decomposition and combustion materials may be toxic. Burning may produce Oxides of carbon, oxides of sodium, oxides of nitrogen, unidentified organic compounds.

Fire Fighting Measures
Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out.

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
Avoid exposure to drafts or currents of air, dusts, fumes, mists, smoke, or vapors. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling.

Methods and Materials for Containment and Cleaning Up
Remove all ignition sources. 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/PERSOAL PROTECTION. Isolate hazard area. 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, spark proof 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 specific federal regulatory reporting requirements associated with spills, leaks, or releases of this product. Also see SECTION 15: REGULATORY INFORMATION.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling
Keep away from heat, sparks and naked flames. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean tools and explosion-proof equipment. When transferring large volumes of product, metal containers, including trucks and tank cars, should be grounded and bonded. Use in a well ventilated area. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling.
Conditions for Safe Storage, Including any Incompatibilities
Store in corrosive resistant container with a resistant inner liner. Do not store below 40ºF. 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 flame, sparks, static electricity, or other sources of ignition. Empty product containers may retain product residue and can be dangerous.

Incompatible Materials
Metals, strong oxidizing materials, acids, combustible materials, halocarbons, halogens, peroxides, metal salts, bases, reducing agents.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component 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 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 applicable exposure limits.

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
No respiratory protection is normally required. Use NIOSH-certified P- or R- series particulate filter and organic vapor cartridges when concentration of vapor or mist exceeds applicable exposure limits. Protection provided by air purifying respirators is limited. Do not use N-rated respirators. 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.

Glove Recommendations
Wear appropriate chemical resistant gloves.

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear yellow liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild odor</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point Range</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Same as water</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>10.5</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>100 °C (212 °F )</td>
</tr>
<tr>
<td>Freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>None</td>
</tr>
</tbody>
</table>
Safety Data Sheet

Material Name: ArmaKleen™ BIO 24 Concentrate  
SDS ID: 820233

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Explosive Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Upper Explosive Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Density (air=1)</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific Gravity (water=1)</td>
<td>1.09</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Soluble</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Same as water</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility (Other)</td>
<td>Complete</td>
</tr>
<tr>
<td>Density</td>
<td>1.09 g/mL</td>
</tr>
<tr>
<td>Physical Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Not available</td>
</tr>
<tr>
<td>Volatile Organic Content</td>
<td>3.63 WT%; 0.33 LB/US gal; 40 g/L</td>
</tr>
<tr>
<td>Product Vapor Pressure @20°C</td>
<td>17.5 mmHg</td>
</tr>
<tr>
<td>Product does not contain</td>
<td>photochemically reactive solvents</td>
</tr>
<tr>
<td>Product does not contain</td>
<td>any volatile organic compounds as defined</td>
</tr>
<tr>
<td></td>
<td>per 40 CFR Part 51.100(s)</td>
</tr>
<tr>
<td>Diluted product is certified</td>
<td>California’s South Coast Air Quality</td>
</tr>
<tr>
<td></td>
<td>Management District (SCAQMD) as a Clean Air</td>
</tr>
<tr>
<td></td>
<td>Solvent (CAS)</td>
</tr>
</tbody>
</table>

Section 10 - STABILITY AND REACTIVITY

Reactivity
- Reacts: aluminum.

Chemical Stability
- Stable under normal temperatures and pressures.

Possibility of Hazardous Reactions
- Will not polymerize.

Conditions to Avoid
- Avoid heat, flames, sparks and other sources of ignition

Incompatible Materials
- Aluminum, metals, strong oxidizing materials, acids, combustible materials, halocarbons, halogens, peroxydes, 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
- Irritation

Skin Contact
- Irritation

Eye Contact
- Irritation

Ingestion
- 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

Product Toxicity Data
Acute Toxicity Estimate
No data available.

Immediate Effects
May cause eye and skin irritation.

Delayed Effects
No information on significant adverse effects.

Irritation/Corrosivity Data
Irritation.

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

<table>
<thead>
<tr>
<th>Component</th>
<th>LC50/LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trisodium citrate</td>
<td>68-04-2</td>
</tr>
<tr>
<td>Fish:</td>
<td>LC50 96 h Poecilia reticulata 18000 - 32000 mg/L</td>
</tr>
<tr>
<td>Invertebrate:</td>
<td>EC50 48 h Daphnia magna 5600 - 10000 mg/L IUCLID</td>
</tr>
</tbody>
</table>

Invertebrate Toxicity
No additional information is available.

Persistence and Degradability
No information available for the product.
Bioaccumulative Potential
No information available for the product.

Mobility
No information available for the product.

**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.

Component Waste Numbers
The U.S. EPA has not published waste numbers for this product's components

**Section 14 - TRANSPORT INFORMATION**

Component Marine Pollutants (IMDG)
Not a marine pollutant.

US DOT Information:
Shipping Name: CORROSIVE LIQUIDS, N.O.S. , (Contains: SODIUM CITRATE)
Hazard Class: 8
UN/NA #: UN1760
Packing Group: III
Required Label(s): 8

ICAO Information:
Shipping Name: CORROSIVE LIQUID, N.O.S. , (Contains: SODIUM CITRATE)
Hazard Class: 8
UN#: UN1760
Packing Group: III
Required Label(s): 8

IMDG Information:
Shipping Name: CORROSIVE LIQUID, N.O.S. , (Contains: SODIUM CITRATE)
Hazard Class: 8
UN#: UN1760
Packing Group: III
Required Label(s): 8

TDG Information:
Shipping Name: CORROSIVE LIQUID, N.O.S. , (Contains: SODIUM CITRATE)
Hazard Class: 8
UN#: UN1760
Packing Group: III
Required Label(s): 8

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 product's 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) 2016 reporting categories
Acute Health: No Chronic Health: No Fire: No Pressure: No Reactivity: No

SARA Section 311/312 (40 CFR 370 Subparts B and C) 2017 reporting categories
Corrosive to Metals

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

Component Analysis - Inventory(140,556),(856,857)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Water (7732-18-5)</td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Trisodium citrate (68-04-2)</td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sodium caprylate (1984-06-1)</td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Section 16 - OTHER INFORMATION

NFPA Ratings
Health: 1 Fire: 0 Reactivity: 1
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes
New Issue SDS

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
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 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.