

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: ArmaKleen™ 4 in 1 NF Solution

Product Code: Not available

Synonyms: Not available.

SDS No: 820484

Intended Use of the Product

Aqueous, alkaline cleaner that has been diluted with water for cleaning aluminum, magnesium, titanium, ferrous and non-ferrous alloys as well as plastic, glass, and composite materials. For professional use only. If this product is used in combination with other products, refer to the Safety Data Sheet for those products.

1.3. Name, Address, and Telephone of the Responsible Party

MANUFACTURER

Safety-Kleen Systems, Inc.
42 Longwater Drive
Norwell, MA 02061-9149 U.S.A.
Phone: 1-800-669-5740

www.safety-kleen.com

SUPPLIER (in the U.S.A.)

Safety-Kleen Systems, Inc.
42 Longwater Drive
Norwell, MA 02061-9149
U.S.A.

Phone: 1-800-669-5740

www.safety-kleen.com

SUPPLIER (in Canada)

Safety-Kleen Canada Inc.
25 Regan Road
Brampton, Ontario L7A 1B2
Canada

Phone: 1-800-669-5740

Emergency Telephone Number

Emergency Number : For Medical Emergency: 1-888-234-1828 (USA and Canada)

For Chemical Emergency: VelocityEHS (800)255-3924 (North America)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS-US/CA Classification

Not Classified

Label Elements

GHS-US/CA Labeling

No labeling applicable according to 29 CFR 1910.1200 and the Hazardous Products Regulations (HPR) SOR/2015-17.

Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

Unknown Acute Toxicity (GHS-US/CA)

No additional information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Synonyms	Product Identifier	% *	GHS Ingredient Classification
Water	water / AQUA	(CAS-No.) 7732-18-5	80 - 100	Not classified
Sodium n-octanoate	Sodium caprylate / Caprylic acid sodium salt / Octanoate, sodium / Octanoic acid, sodium salt / Sodium octanoate	(CAS-No.) 1984-06-1	0.1 - 1	Skin Irrit. 2, H315 Eye Irrit. 2, H319
Sodium silicate	Sodium silicates / SODIUM SILICATE / Silicic acid, sodium salt	(CAS-No.) 1344-09-8	0.1 - 1	Met. Corr. 1, H290 Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318
Alcohols, C6-10, ethoxylated propoxylated	Ethoxylated propoxylated C6-10 alcohols / Poly(ethylene propylene)glycol ethers of C6-10 alcohols / Ethoxylated propoxylated alcohols(C6-10) / Alcohols, C8-10, ethoxylated	(CAS-No.) 68987-81-5	0.1 - 1	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318

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Cyclohexylamine	propoxylated Aminocyclohexane / Cyclohexanamine / Hexahydroaniline / Hexahydrobenzenamine / Cyclohexan-1-ylamine	(CAS-No.) 108-91-8	< 0.01	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Skin Corr. 1, H314 Eye Dam. 1, H318 Repr. 2, H361
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Full text of H-statements: see section 16

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

SECTION 4: FIRST AID MEASURES

Description of First-aid Measures

General: First aid personnel should wear appropriate protective equipment during any rescue. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Immediately drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

Eye Contact: Rinse cautiously with water for at least 5 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

Most Important Symptoms and Effects Both Acute and Delayed

General: Not expected to present a significant hazard under anticipated conditions of normal use.

Inhalation: Prolonged exposure may cause irritation.

Skin Contact: Prolonged exposure may cause skin irritation.

Eye Contact: May cause slight irritation to eyes.

Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Water spray, fog, carbon dioxide (CO₂), alcohol-resistant foam, or dry chemical.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions are not expected to occur under normal conditions.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Carbon oxides (CO, CO₂). Nitrogen oxides. Sodium oxides. Hydrogen cyanide.

Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid contact with skin, eyes, or clothing. Avoid breathing (vapor, mist, spray).

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

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For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Spilled product is slippery. Do not walk through spilled product. Clean up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Precautions for Safe Handling: Avoid contact with skin, eyes and clothing. Avoid breathing vapors, mist, spray. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Do not store below 40°F (4.4°C).

Incompatible Materials: Strong acids, strong bases, strong oxidizers. Halogens.

Specific End Use(s)

Industrial Bio Based Cleaner. For professional use only.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

Cyclohexylamine (108-91-8)		
USA ACGIH	ACGIH OEL TWA [ppm]	10 ppm
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA NIOSH	NIOSH REL (TWA)	40 mg/m ³
USA NIOSH	NIOSH REL TWA [ppm]	10 ppm
Alberta	OEL TWA	41 mg/m ³
Alberta	OEL TWA [ppm]	10 ppm
British Columbia	OEL TWA [ppm]	10 ppm
Manitoba	OEL TWA [ppm]	10 ppm
New Brunswick	OEL TWA	41 mg/m ³
New Brunswick	OEL TWA [ppm]	10 ppm
Newfoundland & Labrador	OEL TWA [ppm]	10 ppm
Nova Scotia	OEL TWA [ppm]	10 ppm
Nunavut	OEL STEL [ppm]	15 ppm
Nunavut	OEL TWA [ppm]	10 ppm
Northwest Territories	OEL STEL [ppm]	15 ppm
Northwest Territories	OEL TWA [ppm]	10 ppm
Ontario	OEL TWA [ppm]	10 ppm
Prince Edward Island	OEL TWA [ppm]	10 ppm
Québec	VEMP (OEL TWA)	41 mg/m ³

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Québec	VEMP (OEL TWA) [ppm]	10 ppm
Saskatchewan	OEL STEL [ppm]	15 ppm
Saskatchewan	OEL TWA [ppm]	10 ppm
Yukon	OEL STEL	40 mg/m ³
Yukon	OEL STEL [ppm]	10 ppm
Yukon	OEL TWA	40 mg/m ³
Yukon	OEL TWA [ppm]	10 ppm

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment: Safety glasses with side-shields. Protective goggles or glasses. Gloves. Protective clothing.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear protective gloves.

Eye and Face Protection: Safety glasses with side-shields.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Clear to Pale yellow
Odor	: Mild
Odor Threshold	: No data available
pH	: 10.3 – 10.7
Evaporation Rate	: Similar to water
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: 212 °F (100 °C)
Flash Point	: No data available
Auto-ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability	: Not applicable
Lower Flammable Limit	: No data available
Upper Flammable Limit	: No data available
Vapor Pressure	: 17.5 mmHg @20°C; <0.1 mmHg@20°C (organic content)
Relative Vapor Density at 20°C	: No data available
Relative Density	: No data available
Density	: 1.002 g/ml
Specific Gravity	: 1.002
Solubility	: Water: Complete
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: Similar to Water
VOC content	: 2.3 g/l (EPA Method 24)

SECTION 10: STABILITY AND REACTIVITY

Reactivity:

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Hazardous reactions are not expected to occur under normal conditions.

Chemical Stability:

Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions:

Hazardous polymerization will not occur.

Conditions to Avoid:

Direct sunlight, extremely high or low temperatures, and incompatible materials.

Incompatible Materials:

Strong acids, strong bases, strong oxidizers. Halogens.

Hazardous Decomposition Products:

Thermal decomposition may produce: Carbon oxides (CO, CO₂). Nitrogen oxides. Sodium oxides. Hydrogen cyanide.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity (Oral): Not classified

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

LD50 and LC50 Data:

No additional information available

Skin Corrosion/Irritation: Not classified

pH: 10.3 – 10.7

Eye Damage/Irritation: Not classified

pH: 10.3 – 10.7

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Prolonged exposure may cause irritation.

Symptoms/Injuries After Skin Contact: Prolonged exposure may cause skin irritation.

Symptoms/Injuries After Eye Contact: May cause slight irritation to eyes.

Symptoms/Injuries After Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Cyclohexylamine (108-91-8)	
LD50 Oral Rat	11 mg/kg
LD50 Dermal Rabbit	277 mg/kg
LC50 Inhalation Rat	1000 ppm (Exposure time: 16 h)
Sodium silicate (1344-09-8)	
LD50 Oral Rat	1960 mg/kg
Alcohols, C6-10, ethoxylated propoxylated (68987-81-5)	
LD50 Oral Rat	810 – 1660 mg/kg (Read-across from 68603-25-8)
Cyclohexylamine (108-91-8)	
IARC Group	3

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Not classified.

Cyclohexylamine (108-91-8)	
LC50 Fish 1	44 – 90 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)

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LC50 Fish 2	470 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
Sodium silicate (1344-09-8)	
LC50 Fish 1	301 – 478 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)
LC50 Fish 2	3185 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [semi-static])

Persistence and Degradability

ARMAKLEEN™ 4 in 1 -NF Solution	
Persistence and Degradability	Not established.

Bioaccumulative Potential

ARMAKLEEN™ 4 in 1 -NF Solution	
Bioaccumulative Potential	Not established.
Cyclohexylamine (108-91-8)	
Partition coefficient n-octanol/water (Log Pow)	3.7 at 25 °C (at pH 6.8)
Sodium silicate (1344-09-8)	
BCF Fish 1	(no bioaccumulation expected)

Mobility in Soil

No additional information available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Ecology - Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

In Accordance with DOT

Not regulated for transport

In Accordance with IMDG

Not regulated for transport

In Accordance with IATA

Not regulated for transport

In Accordance with TDG

Not regulated for transport

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

ARMAKLEEN™ 4 in 1 -NF Solution	
SARA Section 311/312 Hazard Classes	Health hazard - Serious eye damage or eye irritation
Water (7732-18-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Sodium n-octanoate (1984-06-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Cyclohexylamine (108-91-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Listed on the United States SARA Section 302	
SARA Section 302 Threshold Planning Quantity (TPQ)	10000 lb
Sodium silicate (1344-09-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Alcohols, C6-10, ethoxylated propoxylated (68987-81-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	

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EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).
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US State Regulations

Cyclohexylamine (108-91-8)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Canadian Regulations

Water (7732-18-5)
Listed on the Canadian DSL (Domestic Substances List)
Sodium n-octanoate (1984-06-1)
Listed on the Canadian DSL (Domestic Substances List)
Cyclohexylamine (108-91-8)
Listed on the Canadian DSL (Domestic Substances List)
Sodium silicate (1344-09-8)
Listed on the Canadian DSL (Domestic Substances List)
Alcohols, C6-10, ethoxylated propoxylated (68987-81-5)
Listed on the Canadian NDSL (Non-Domestic Substances List)

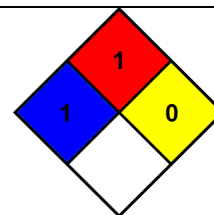
SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision	: 01/21/2024
Indication of Changes	: Update to logo and Manufacturer 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) SOR/2015-17.

GHS Full Text Phrases:

H226	Flammable liquid and vapor
H290	May be corrosive to metals
H302	Harmful if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H361	Suspected of damaging fertility or the unborn child

NFPA Health Hazard	: 1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA Fire Hazard	: 1 - Materials that must be preheated before ignition can occur.
NFPA Reactivity Hazard	: 0 - Material that in themselves are normally stable, even under fire conditions.



The information contained herein is correct to the best of our knowledge, information, and belief and is designed only as guidance for the handling, use, processing, storage, transportation, disposal, and release of the product. User assumes all risks incident to use of this product and shall determine the quality and suitability of the product for its use. Supplier offers no warranty, express or implied, whatsoever, including warranties of merchantability or fitness for a particular purpose or otherwise, and specifically disclaims any and all liability for incidental, consequential, or other damages arising out the use or misuse of the product. The information provided relates only to the specific material provided and may not be valid if used in combination with any other materials or process, unless specified herein.

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