BLUE CARDINAL CHEMICAL

SAFETY DATA SHEET

Issue Date 09/25/2019 **Version** 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Ammoniated Glass Cleaner

Other means of identification

Product Code 5132

Details of the supplier of the safety data sheet

Company Name
Blue Cardinal Chemical, LLC
3670 Scarlet Oak Blvd.
St. Louis, MO 63122
800-325-3312

Emergency telephone number

Emergency Telephone CHEMTEL 1-800-255-3924

2. HAZARDS IDENTIFICATION

Classification

Flammable aerosol	Category 1

Label elements

Emergency Overview

DANGER

Hazard statements
Extremely flammable aerosol.

Appearance: Aerosol Spray **Physical state:** Liquid **Odor:** No data available

Precautionary Statements - Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Wear goggles/face shield.

Precautionary Statements - Response
Ingestion: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. Inhalation: Move to fresh air. Skin Contact: Wash skin thoroughly with soap and water. If skin irritation occurs: Get medical advice/attention. Eye contact: Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. If eye irritation persists: Get medical advice/attention.

Precautionary Statements - Storage
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Precautionary Statements - Disposal
Wash before disposal. Dispose to controlled facilities.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	WEIGHT - %	TRADE SECRET
Butane	106-97-8	1 - <5%	*
Ethanol, 2-butoxy-	111-76-2	1 - <5%	*
Propane	74-98-6	1 - <5%	*
Ethanol	64-17-5	0.1 - <1%	*
Sodium nitrite, Nitrous acid, sodium salt (1:1)	7632-00-0	0.1 - <1%	*

***The exact percentage (concentration) of composition has been withheld as a trade secret.**

4. FIRST AID MEASURES

First aid measures

Skin Contact Wash skin thoroughly with soap and water. If skin irritation occurs: Get medical advice/attention.

Eye Contact Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. If eye irritation persists: Get medical advice/attention.

Inhalation Move to fresh air.

Ingestion Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.

Most important symptoms and effect, both acute and delayed

Symptoms No data available.

Indication of any immediate medical attention and special treatment needed

Note to physicians No data available.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
Vapors may travel considerable distance to a source of ignition and flash back.

Protective equipment and precautions for firefighters
Use water spray to keep fire-exposed containers cool. Fight fire from a protected location. Move containers from fire area if you can do so without risk. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ventilate closed spaces before entering them. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep upwind.

Environmental precautions

Environmental precautions Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk.

Methods and material for containment and cleaning up

Methods for containment & cleaning up Stop the flow of material, if this is without risk. Absorb with sand or other inert absorbent.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use.

Conditions for safe storage, including any incompatibilities

Storage conditions Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Aerosol Level 1.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational Exposure Limits

CHEMICAL IDENTITY	TYPE	EXPOSURE LIMIT VALUES	SOURCE
Butane	REL	800 ppm 1,900 mg/m³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	STEL	1,000 ppm —	US. ACGIH Threshold Limit Values (03 2018)
	TWA	800 ppm 1,900 mg/m³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Ethanol, 2-butoxy-	TWA	20 ppm —	US. ACGIH Threshold Limit Values (2008)
	TWA	25 ppm 120 mg/m³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	REL	5 ppm 24 mg/m³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	PEL	50 ppm 240 mg/m³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

CHEMICAL IDENTITY	TYPE	EXPOSURE LIMIT VALUES	SOURCE
Propane	REL	1,000 ppm 1,800 mg/m³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	PEL	1,000 ppm 1,800 mg/m³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	1,000 ppm 1,800 mg/m³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Ethanol	REL	1,000 ppm 1,900 mg/m³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	PEL	1,000 ppm 1,900 mg/m³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	1,000 ppm 1,900 mg/m³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	1,000 ppm —	US. ACGIH Threshold Limit Values (2009)
Ammonium hydroxide ((NH4)(OH))	STEL	35 ppm —	US. ACGIH Threshold Limit Values (2008)
	TWA	25 ppm —	US. ACGIH Threshold Limit Values (2008)
	STEL	35 ppm 27 mg/m³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	35 ppm 27 mg/m³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	REL	25 ppm 18 mg/m³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	PEL	50 ppm 35 mg/m³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
2-Propanol, 2-methyl-	STEL	150 ppm 450 mg/m³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	TWA	100 ppm 300 mg/m³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	PEL	100 ppm 300 mg/m³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	100 ppm —	US. ACGIH Threshold Limit Values (2008)
	STEL	150 ppm 450 mg/m³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	REL	100 ppm 300 mg/m³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)

CHEMICAL IDENTITY	EXPOSURE LIMIT VALUES	SOURCE
Ethanol, 2-butoxy- (Butoxyacetic acid (BAA), with hydrolysis: Sampling time: End of shift.)	200 mg/g (Creatinine in urine)	ACGIH BEL (03 2013)

Appropriate engineering controls

Engineering Controls No data available.

Individual protection measures, such as personal protective equipment

General information Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Wear goggles/face shield.

Skin and body protection No data available.

Respiratory protection In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.

General Hygiene When using do not smoke. Observe good industrial hygiene practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Aerosol Spray
Color	No data available
Odor	No data available
Odor Threshold	No data available

Property	**Values**
pH	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash Point	-104.44 °C
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Flammability limit - upper (%)	No data available
Flammability limit - lower (%)	No data available
Explosive limit - upper (%)	No data available
Explosive limit - lower (%)	No data available
Vapor pressure	3,447.3786 – 4,826.3301 hPa (20 °C)
Vapor density	No data available
Density	No data available
Relative density	No data available
Solubility in water	No data available
Solubility (other)	No data available
Partition coefficient (n-octanol/water)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available

10. STABILITY AND REACTIVITY

Reactivity
No data available.

Chemical Stability
Material is stable under normal conditions.

Possibility Of Hazardous Reactions
No data available.

Conditions To Avoid
Avoid heat or contamination.

Incompatible Materials
No data available.

Hazardous Decomposition Products
No data available.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Skin Contact	No data available.
Eye Contact	No data available.
Inhalation	No data available.
Ingestion	No data available.

Information on toxicological effects

Symptoms No data available.

Acute toxicity

Oral (Product)	ATEmix: 37,600.14 mg/kg
Dermal (Product)	ATEmix: 37,600.14 mg/kg
Inhalation (Product)	ATEmix: 709.22 mg/l ATEmix: 177.3 mg/l

Repeated dose toxicity

Product No data available.

Specified substance(s)

Butane	LOAEL (Rat(Female, Male), Inhalation, >= 28 d): 12,000 ppm(m) Inhalation Experimental result, Key study NOAEL (Rat(Female, Male), Inhalation, >= 28 d): 4,000 ppm(m) Inhalation Experimental result, Key study
Ethanol, 2-butoxy-	LOAEL (Rat(Female, Male), Inhalation, >= 28 d): 12,000 ppm(m) Inhalation Experimental result, Key study NOAEL (Rat(Female, Male), Inhalation, >= 28 d): 4,000 ppm(m) Inhalation Experimental result, Key study
Propane	NOAEL (Rat(Female, Male), Inhalation, >= 28 d): 4,000 ppm(m) Inhalation Experimental result, Key study LOAEL (Rat(Female, Male), Inhalation, >= 28 d): 12,000 ppm(m) Inhalation Experimental result, Key study
Ethanol	NOAEL (Rat(Male), Oral, 7 - 14 Weeks): 10 %(m) Oral Experimental result, Key study
Sodium nitrite, Nitrous acid, sodium salt (1:1)	NOAEL (Rat(Male), Oral, 2 yr): 10 mg/kg Oral Experimental result, Supporting study LOAEL (Rat(Male), Oral, 14 Weeks): 115 mg/kg Oral Experimental result, Weight of Evidence study

Skin Corrosion/Irritation

Product No data available.

Specified substance(s)

Ethanol, 2-butoxy-	in vivo (Rabbit): Irritating Experimental result, Key study
Ethanol	in vivo (Rabbit): Not irritant Experimental result, Key study
Sodium nitrite, Nitrous acid, sodium salt (1:1)	in vivo (Rabbit): Not irritant Experimental result, Weight of Evidence study

Serious Eye Damage/Eye Irritation

Product No data available.

Specified substance(s)

Ethanol, 2-butoxy-	Rabbit, 24 - 72 hrs: Irritating
Ethanol	Rabbit, 1 - 24 hrs: Not irritating

Respiratory or Skin Sensitization

Product No data available.

Specified substance(s)

Ethanol, 2-butoxy-	Skin sensitization:, in vivo (Guinea pig): Non sensitising
Ethanol	Skin sensitization:, in vivo (Guinea pig): Non sensitising

Carcinogenicity No data available.

Germ Cell Mutagenicity No data available.

Reproductive toxicity No data available.

STOT - Single Exposure No data available.

STOT - Repeated Exposure No data available.

Aspiration Hazard No data available.

Other effects No data available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Acute hazards to the aquatic environment

Fish

Product No data available.

Specified substance(s)

Butane	LC 50 (Various, 96 h): 147.54 mg/l QSAR QSAR, Key study
Ethanol, 2-butoxy-	LC 50 (Oncorhynchus mykiss, 96 h): 1,474 mg/l Experimental result, Key study
Propane	LC 50 (Various, 96 h): 147.54 mg/l QSAR QSAR, Key study
Ethanol	LC 50 (Pimephales promelas, 96 h): 15.3 g/l Experimental result, Key study
Sodium nitrite, Nitrous acid, sodium salt (1:1)	LC 50 (Oncorhynchus mykiss, 96 h): 0.54 - 26.3 mg/l Experimental result, Key study

Aquatic Invertebrates

Product No data available.

Specified substance(s)

Butane	LC 50 (Daphnia sp., 48 h): 69.43 mg/l QSAR
Ethanol, 2-butoxy-	QSAR, Key study
Propane	EC 50 (Daphnia magna, 48 h): 1,550 mg/l Experimental result, Key study
Ethanol	LC 50 (Ceriodaphnia dubia, 48 h): 5,012 mg/l Experimental result, Key study
Sodium nitrite, Nitrous acid, sodium salt (1:1)	EC 50 (Daphnia magna, 48 h): 15.4 mg/l Experimental result, Key study

Chronic hazards to the aquatic environment

Fish

Product No data available.

Specified substance(s)

Ethanol, 2-butoxy-	NOAEL (Danio rerio): > 100 mg/l Experimental result, Key study
Ethanol	NOAEL (Oryzias latipes): 7,900 mg/l Read-across from supporting substance (structural analogue or surrogate), Supporting study
Sodium nitrite, Nitrous acid, sodium salt (1:1)	NOAEL (Cyprinus carpio): 1.05 mg/l Experimental result, Key study

Aquatic Invertebrates

Product No data available.

Specified substance(s)

Ethanol, 2-butoxy-	EC 50 (Daphnia magna): 297 mg/l Experimental result, Key study EC 10 (Daphnia magna): 134 mg/l Experimental result, Key study
Ethanol	LC 50 (Daphnia magna): 454 mg/l Experimental result, Key study NOAEL (Daphnia magna): 9.6 mg/l Experimental result, Key study
Sodium nitrite, Nitrous acid, sodium salt (1:1)	NOAEL (Penaeus monodon): 2 mg/l Experimental result, Key study EC 50 (Penaeus monodon): 114.9 mg/l Experimental result, Key study LC 50 (Penaeus monodon): > 95.6 mg/l Experimental result, Key study

Toxicity to Aquatic Plants

Product No data available.

Persistence and Degradability

Biodegradation

Product No data available.

Specified substance(s)

Butane	100 % (385.5 h) Detected in water. Experimental result, Key study
Ethanol, 2-butoxy-	90.4 % Detected in water. Experimental result, Key study
Propane	100 % (385.5 h) Detected in water. Experimental result, Key study 50 % (3.19 d) Detected in water. QSAR, Weight of Evidence study
Ethanol	95 % Detected in water. Experimental result, Key study

BOD/COD Ratio

Product No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product No data available.

Specified substance(s)

Ethanol	Cyprinus carpio, Bioconcentration Factor (BCF): 4.5 Aquatic sediment Read-across from supporting substance (structural analogue or surrogate), Supporting study

Partition Coefficient n-octanol / water (log Kow)

Product No data available.

Mobility in soil No data available.

Known or predicted distribution to environmental compartments

Butane	No data available.
Ethanol, 2-butoxy-	No data available.
Propane	No data available.

Known or predicted distribution to environmental compartments

Ethanol	No data available.
Sodium nitrite, Nitrous acid, sodium salt (1:1)	No data available.

Other adverse effects No data available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of Wastes Wash before disposal. Dispose to controlled facilities.

14. TRANSPORT INFORMATION

The basic description below is specific to the container size. This information is provided for at a glance DOT information. Please refer to the container and/or shipping papers for the appropriate shipping description before tendering this material for shipment. For additional information, please contact the distributor listed in section 1 of this SDS.

DOT

UN/ID No.	*UN 1950*
Proper Shipping Name	*Aerosols, flammable*
Hazard Class	*2.1*
Packing Group	*II*
Environmental Hazards	*No*
Marine Pollutant	*No*
Special Precautions for User	*Not regulated.*

IMDG

UN/ID No.	*UN 1950*
Proper Shipping Name	*Aerosols, flammable*
Hazard Class	*2*
Packing Group	*–*
Environmental Hazards	*No*
Marine Pollutant	*No*
Special Precautions for User	*Not regulated.*

IATA

UN/ID No.	*UN 1950*
Proper Shipping Name	*Aerosols, flammable*
Hazard Class	*2.1*
Packing Group	*–*
Environmental Hazards	*No*
Marine Pollutant	*No*
Special Precautions for User	*Not regulated.*

15. REGULATORY INFORMATION

US Federal Regulations

Restrictions on use: Not known.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4)

Chemical Identity	Reportable Quantity
Butane	lbs. 100
Propane	lbs. 100
Ethanol	lbs. 100
Sodium nitrite, Nitrous acid, sodium salt (1:1)	lbs. 100
Ammonium hydroxide ((NH4)(OH))	lbs. 1000
2-Propanol, 2-methyl-	lbs. 100

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Fire Hazard
Flammable aerosol

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

Chemical Identity	Reportable Quantity
Butane	lbs. 100
Ethanol, 2-butoxy-	
Propane	lbs. 100
Ethanol	lbs. 100
Sodium nitrite, Nitrous acid, sodium salt (1:1)	lbs. 100
Ammonium hydroxide ((NH4)(OH))	lbs. 1000
2-Propanol, 2-methyl-	lbs. 100

SARA 311/312 Hazardous Chemical

Chemical Identity	Reportable Quantity
Butane	10000 lbs
Ethanol, 2-butoxy-	10000 lbs
Propane	10000 lbs
Ethanol	10000 lbs
Sodium nitrite, Nitrous acid, sodium salt (1:1)	10000 lbs
Ammonium hydroxide ((NH4)(OH))	10000 lbs
2-Propanol, 2-methyl-	10000 lbs

SARA 313 (TRI Reporting)

Chemical Identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
Ethanol, 2-butoxy-	N230 lbs.	N230 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

US State Regulations

US. California Proposition 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

1,6-Octadiene, 7-methyl-3-methylene-	Carcinogenic. 03 2015

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity

Butane
Ethanol, 2-butoxy-
Propane
Ethanol

US. Massachusetts RTK - Substance List

No ingredient regulated by MA Right-to-Know Law present.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity
Butane
Ethanol, 2-butoxy-
Propane

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

International Regulations

Montreal protocol
Not applicable

Stockholm convention
Not applicable

Rotterdam convention
Not applicable

Kyoto protocol
Not applicable

Inventory Status

Australia AICS	On or in compliance with the inventory
Canada DSL Inventory List	On or in compliance with the inventory
EINECS, ELINCS or NLP	Not in compliance with the inventory.
Japan (ENCS) List	Not in compliance with the inventory.
China Inv. Existing Chemical Substances	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI)	Not in compliance with the inventory.
Canada NDSL Inventory	Not in compliance with the inventory.
Philippines PICCS	On or in compliance with the inventory
US TSCA Inventory	On or in compliance with the inventory
New Zealand Inventory of Chemicals	On or in compliance with the inventory
Japan ISHL Listing	Not in compliance with the inventory.
Japan Pharmacopoeia Listing	Not in compliance with the inventory.
Mexico INSQ	Not in compliance with the inventory.
Ontario Inventory	On or in compliance with the inventory
Taiwan Chemical Substance Inventory	On or in compliance with the inventory

16. OTHER INFORMATION

Issue Date 09/25/2019
Revision Date
Revision Note

N/A = Not Applicable; N/D = Not Determined

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet