SAFETY DATA SHEET

According to 29 CFR 1910.1200 Hazard Communication Standard 2012 (HazCom 2012)

Revision: 06/25/2021

SECTION 1: Identification

Product identifier

Product name	Hardness Buffer
Product number	R-0619; R-0619B; R-0619LB; R-0619B-PL; R-0619LB-PL
Recommended use and restrictions	Water analysis. To be used in accordance with manufacturer instructions or under the direct guidance of the manufacturer.
Manufacturer	Taylor Technologies, Inc. 31 Loveton Circle Sparks, MD 21152 Local: (410) 472-4340 – 8am – 5pm EST Toll-free: (800) 837-8548 – 8am – 5pm EST
Emergency phone number	
CHEMTREC, United States	1-800-424-9300 – 24-hour service
CHEMTREC, International	+1 703-741-5970 – 24-hour service

SECTION 2: Hazard(s) Identification

Physical hazards	Not applicable	
Health hazards	Acute toxicity, oral	Category 4
	Eye damage/irritation	Category 1
	Skin corrosion/irritation	Category 1C
Environmental hazards	Acute aquatic toxicity	Category 1

Label elements

Hazard pictograms

Signal word	Danger
Hazard statements	Harmful if swallowed. Causes severe skin burns and serious eye damage. Very toxic to aquatic life.

Precautionary statements

Prevention	Wash skin thoroughly after handling. Do not eat, drink, or smoke when using this product. Do not breathe dust or mists. Wear protective gloves/protective clothing/eye protection/face protection if contact is likely to occur. Avoid release into the environment.
Response	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a physician or poison control center. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a physician or poison control center if you feel unwell. IF ON SKIN (OR HAIR): Immediately take off all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a physician or poison control center. Collect spillage.
Storage	Store locked up. Keep tightly capped. Store out of direct sunlight between 36°F–85°F.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazards not otherwise classified	Not applicable

SECTION 3: Composition/Information on Ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	% w/w
Water	Dihydrogen oxide	7732-18-5	45-70
Ammonium hydroxide	Ammonia water	1336-21-6	20-30
Ammonium chloride	Salmiac	12125-02-9	5-10

Ammonium sulfide	Not applicable	12135-76-1	0.1-1
Non-hazardous components or below reportable levels	Not applicable	Not applicable	<3

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4: First-Aid Measures

If inhaled

Remove individual to fresh air. Seek medical advice/attention if breathing becomes difficult or if respiratory irritation develops. Give oxygen or artificial respiration if needed.

In case of skin contact

Immediately flush skin with plenty of water for at least 20 minutes. If clothing comes in contact with the product, the clothing should be removed and laundered before reuse. Seek medical advice/attention if irritation develops.

In case of eye contact

Immediately flush eyes with plenty of water for at least 20 minutes. Remove contact lenses if present and easy to do. Continue rinsing. If symptoms persist or in all cases of concern, seek medical advice/attention.

If swallowed

Rinse mouth. Give large quantities of water. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Immediately call a physician.

Most important symptoms and effects, both acute and delayed

Direct skin or eye contact may cause corrosive burns. Symptoms may include pain, redness or swelling. Scarring or permanent damage, including blindness, could result. Inhalation may cause severe respiratory irritation, such as coughing and wheezing. Inhalation could result in pulmonary edema, symptoms—chest pain, shortness of breath—may be delayed. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus, and possibly the digestive tract. Symptoms may include abdominal pain, vomiting, burns, perforations, and bleeding.

Refer to section 11 of the SDS for delayed and immediate effects and chronic effects from short- and long-term exposure.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

Ensure medical personnel are aware of the material(s) involved and take precautions to protect themselves.

SECTION 5: Firefighting Measures

Extinguishing media

Suitable extinguishing media	Water fog, foam, dry chemical powder, carbon dioxide (CO_2).
Unsuitable extinguishing media	Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Specific hazards arising from the substance or mixture

Fire hazard	Not flammable
Explosion hazard	Not explosive
Reactivity	Hazardous reactions will not occur under normal conditions.
Hazardous combustion products	Ammonia, hydrogen chloride, nitrogen oxides, sodium oxides, sulfur oxides. During fire, gases hazardous to health may be formed, including toxic hydrogen sulfide gas.

Advice for firefighters

Precautionary measures	Exercise caution when fighting any chemical fire; hazardous fumes will be present.
Firefighting equipment/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.
Other information	Refer to section 9 of the SDS for flammability properties.

SECTION 6: Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during cleanup. Do not breathe dust/fumes/gas/mists/vapors/spray. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protective equipment, refer to section 8 of the SDS.

Environmental precautions

Avoid discharge into drains, watercourses, or onto the ground.

Methods and material for containment and cleaning up

Ventilate the area. Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb in vermiculite, dry sand or earth, and place into containers. Prevent entry into waterways, sewers, basements, or confined areas. Following product recovery, flush area with water. Never return spills to original containers for reuse. Contaminated absorbent material may pose the same hazards as the spilled product. In the event of large spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Reference to other sections

For exposure controls and personal protection, refer to section 8 of the SDS. For waste disposal, refer to section 13 of the SDS.

SECTION 7: Handling and Storage

Precautions for safe handling

Do not breathe dust/fumes/gas/mists/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. For personal protective equipment, refer to section 8 of the SDS. Keep away from incompatibles. Observe good industrial hygiene practices. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

Keep tightly capped. Store out of direct sunlight between 36°F–85°F. Store away from incompatible materials (refer to section 10 of the SDS). Store locked up.

SECTION 8: Exposure Controls/Personal Protection

Occupational exposure limits

US ACGIH Threshold Limit Values

Components	Type	Value
Ammonia (7664-41-7)	TWA	25 ppm (18 mg/m^3)
Ammonia (7664-41-7)	STEL	35 ppm (27 mg/m^3)

US NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Ammonia (7664-41-7)	TWA	25 ppm (18 mg/m^3)
Ammonia (7664-41-7)	STEL	35 ppm (27 mg/m^3)
Ammonia (7664-41-7)	IDLH	300 ppm (210 mg/m^3)

US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Ammonia (7664-41-7)	TWA	50 ppm (35 mg/m^3)

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure controls

Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eyewash facilities and emergency shower must be available when handling this product.
Personal protective equipment	
Eye/face protection	Wear appropriate safety glasses with side shields (or goggles) if contact is likely to occur.
Skin protection	Wear appropriate chemical-resistant gloves and clothing if contact is likely to occur.
Body protection	Wear appropriate protective clothing if contact is likely to occur
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fumes at levels exceeding the exposure limits. Advice should be sought from respiratory protection suppliers.

SECTION 9: Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state	Liquid
Form	Liquid
Color	Clear, colorless to yellow
Odor	Pungent, sulfur/ammonia odor
Odor threshold	No data available
pH	10.5
Evaporation rate	No data available
Melting point/freezing point	No data available
Initial boiling point (boiling range)	No data available
Flash point	Not applicable
Auto-ignition temperature	No data available

Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Upper Flammability Limit	No data available
Lower Flammability Limit	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	0.96 g/mL at 72°F (22°C)
Solubility	Miscible
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	Not explosive
Oxidizing properties	Not oxidizing

SECTION 10: Stability and Reactivity

Reactivity	Hazardous reactions will not occur under normal conditions of use, storage, and transport.
Chemical stability	Stable under recommended handling and storage conditions (refer to section 7 of the SDS).
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Strong acids. Strong oxidizing agents. Halogens, nitrates, metals, and metal compounds.
Hazardous decomposition products	No hazardous decomposition products known.

SECTION 11: Toxicological Information

Information on likely routes of exposure

Inhalation	Avoid inhalation of this product. Use in a well-ventilated area. Substance can be absorbed into the body by inhalation of its aerosol or vapor.
Skin contact	Protect exposed skin from contact. Use caution to avoid splashes.
Eye contact	Avoid close eye contact; Use caution to avoid splashes. Wear eye protection.
Ingestion	Avoid accidental ingestion by observing good hygiene practices. Wash hands thoroughly after handling this product.
Symptoms related to the physical, chemical, and toxicological characteristics	This product may be harmful if swallowed. Corrosive skin/eye damage may occur. Refer to section 4 of the SDS for most important symptoms and effects.

Delayed and immediate effects and chronic effects from short- and long-term exposure

Acute toxicity

This product is classified as an acute toxicity hazard. Acute toxicity estimate (ATE) for the mixture has been calculated based on chapter 3 of GHS.

0% of the mixture consists of ingredient(s) with unknown acute oral toxicity.

Product acute toxicity estimate (ATE)

ATEmix (Oral)	1065 mg/kg
ATEmix (Dermal)	No data available
ATEmix (Inhalation)	No data available

Component(s)	Species	Acute toxicity data
Ammonium chloride (CAS 12125-02-9)		
LD50 (Oral)	Rat	1650 mg/kg (Source: NIOSH)
LD50 (Dermal)	Not applicable	No data available
LC50 (Inhalation)	Not applicable	No data available
Ammonium hydroxide (CAS 1336-21-6)		
LD50 (Oral)	Rat	350 mg/kg (Source: NIOSH)
LD50 (Dermal)	Not applicable	No data available
LC50 (Inhalation)	Not applicable	No data available
Ammonium sulfide (CAS 12135-76-1)		

LD50 (Oral)	Rat	168 mg/kg (Source: ProQuest)
LD50 (Dermal)	Not applicable	No data available
LC50 (Inhalation)	Not applicable	No data available

Skin corrosion/irritation Causes severe skin burns

Serious eye damage/eye irritation Causes serious eye damage

Respiratory sensitization No data available

Skin sensitization No data available

Germ cell mutagenicity No data available

Carcinogenicity

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096)

Not regulated

US National Toxicology Program (NTP) Report on Carcinogens

Not listed

Reproductive toxicity No data available

Specific target organ toxicity (single exposure) No data available

Specific target organ toxicity (repeated exposure) No data available

Aspiration hazard No data available

SECTION 12: Ecological Information

Ecotoxicity This product is classified as environmentally hazardous.

Ammonium chloride (CAS 12125-02-9)

Rainbow trout	96hr LC50 = 0.42 – 0.56 mg/L
American lobster	48hr EC50 = 0.237 – 0.288 mg/L

Ammonium hydroxide (CAS 1336-21-6)

Fathead minnow	96hr LC50 = 8.2 mg/L
Water flea	48hr EC50 = 0.66 mg/L

Ammonium sulfide (CAS 12135-76-1)

Carp	48hr LC50 = 4.4 – 5.9 mg/L

Persistence and degradability No data available

Bioaccumulative potential No data available

Mobility in soil No data available

Other adverse effects Large or frequent spills can have a harmful or damaging effect on the environment.

SECTION 13: Disposal Considerations

Collect and reclaim or dispose of in sealed containers at a licensed waste disposal site. Since emptied containers may retain product residue, follow label warnings even after container is emptied. This material and its container must be disposed of in a safe manner. Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport Information

DOT

UN number 2672

UN Proper shipping name Ammonia solution, 10-35%

Reportable Quantity 1000 lbs, Ammonium hydroxide

Class (Subsidiary risk) 8

Label(s) 8

Packing group III

Special provisions 336, IB3, IP8, T7, TP2

Packaging exceptions	154
Packaging, non-bulk	203

IATA

UN number	2672
UN Proper shipping name	Ammonia solution
Class (Subsidiary risk)	8
Packing group	III
Special provisions	A64, A803

IMDG

UN number	2672
UN Proper shipping name	Ammonia solution
Class (Subsidiary risk)	8
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Special provisions	None
EmS	F-A, S-B

Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	This substance/mixture is not intended to be transported in bulk.

DOT hazard pictograms

IATA/IMDG hazard pictograms

SECTION 15: Regulatory Information

US federal regulations

CERCLA Hazardous Substance (40 CFR 302.4)

Chemical name	CAS number	Reportable Quantity
Ammonium chloride	12125-02-9	5000 lbs
Ammonium hydroxide	1336-21-6	1000 lbs
Ammonium sulfide	12135-76-1	100 lbs

SARA 302 Extremely Hazardous Substance (40 CFR 355 Appendices A / B)

Not regulated

SARA 304 Emergency Release Notification

Not regulated

SARA 311/312 Hazardous Chemical

Chemical name	CAS number
Ammonium chloride	12125-02-9
Ammonium hydroxide	1336-21-6
Ammonium sulfide	12135-76-1

SARA 313 (TRI reporting)

Chemical name	CAS number
Ammonium hydroxide	1336-21-6

TSCA Section 8(b) Chemical Inventory

All components are on the U.S. EPA TSCA Inventory list.

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

Not regulated

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs)

Not regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated

Clean Water Act, Toxic and Priority Pollutants (40 CFR 401.15 and CFR 423, Appendix A)

Not regulated

Safe Drinking Water Act (SDWA)

Not regulated

US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (California Proposition 65)

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Massachusetts Right-to-Know Act

Chemical name	CAS number
Ammonium chloride	12125-02-9
Ammonium hydroxide	1336-21-6
Ammonium sulfide	12135-76-1

New Jersey Worker and Community Right-to-Know Act

Chemical name	CAS number
Ammonium chloride	12125-02-9
Ammonium hydroxide	1336-21-6
Ammonium sulfide	12135-76-1

Pennsylvania Worker and Community Right-to-Know Act

Chemical name	CAS number
Ammonium chloride	12125-02-9
Ammonium hydroxide	1336-21-6
Ammonium sulfide	12135-76-1

Rhode Island Right-to-Know Act

Chemical name	CAS number
Ammonium chloride	12125-02-9
Ammonium hydroxide	1336-21-6
Ammonium sulfide	12135-76-1

SECTION 16: Other Information

NFPA Rating

Health hazard	3
Fire hazard	0
Reactivity	0
Specific	N/A

Disclaimer

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This document embodies significant change(s) that may impact classification, safe handling, or health information for the associated product(s). The information contained herein should be reviewed in its entirety before handling material.