

SECTION 1: Identification

| | |
|---|--|
| Product identifier | |
| Product name | Calcium Buffer |
| Product number | R-0653 |
| Recommended use and restrictions | 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 Phone: (410) 472-4340 Emergency phone: (800) 837-8548 |

SECTION 2: Hazard(s) Identification

| | | |
|------------------------------|---|------------|
| Physical hazards | Corrosive to metals | Category 1 |
| Health hazards | Acute toxicity, dermal | Category 4 |
| | Acute toxicity, oral | Category 3 |
| | Eye damage/irritation | Category 1 |
| | Skin corrosion/irritation | Category 2 |
| | Specific target organ toxicity- repeated exposure | Category 1 |
| Environmental hazards | Acute aquatic toxicity | Category 2 |

Label elements

Hazard pictograms



Signal word

Danger

Hazard statements

May be corrosive to metals. Harmful in contact with skin. Toxic if swallowed. Causes serious eye damage. Causes skin irritation. Causes damage to organs through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

Keep only in original container. Do not breathe dust/fumes/gas/mists/vapors/spray. Do not eat, drink, or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection if contact is likely to occur. Wash skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Keep only in original container. Avoid release into the environment.

Response

Absorb spillage to prevent material damage. Collect spillage. IF SWALLOWED: Immediately call a physician or poison control center. Rinse mouth. IF ON SKIN (OR HAIR): Immediately take off all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. Immediately call a physician or poison control center if you feel unwell. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a physician or poison control center. 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 EXPOSED OR CONCERNED: Get medical advice/attention if you feel unwell.

Storage

Store in corrosive-resistant container with corrosive-resistant inner liner. Store in a well-ventilated place. Keep tightly capped. Store out of direct sunlight between 36°F–85°F. Store locked up.

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 monoxide | 7732-18-5 | 80-100 |
| Sodium hydroxide | Caustic soda | 1310-73-2 | 1-5 |
| Sodium cyanide | Cyanogran; Cymag; Cyanide of sodium | 143-33-9 | 0.1-1 |

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical attention if breathing becomes difficult or if respiratory irritation develops. Immediately call a physician or poison control center. 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. Chemical burns must be treated by a physician.

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.

If swallowed

Immediately call a physician or poison control center. Rinse mouth. 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.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

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 Use extinguishing media appropriate for surrounding fire such as dry powder.

Unsuitable extinguishing media Do not use a heavy water stream or carbon dioxide-based media. Use of heavy stream of water may spread fire and carbon dioxide may yield hydrogen cyanide gas.

Specific hazards arising from the substance or mixture

Fire hazard Not flammable

Explosion hazard Not explosive

Reactivity May be corrosive to metals.

Hazardous combustion products Hydrogen cyanide gas, nitrogen oxides, sodium oxides. Other irritating fumes and smoke.

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 mist or vapor. 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

Convert cyanide to cyanate using sodium hypochlorite (bleach). Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. 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. Contaminated absorbent material may pose the same hazards as the spilled product. In the event of a 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

Personal precautions, protective equipment, and emergency procedures

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust or mist. 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

Store in corrosive-resistant container with a corrosive-resistant inner liner. Store in a well-ventilated place. Keep tightly capped. Store out of direct sunlight between 36°F–85°F. Store locked up. Store away from incompatible materials (refer to section 10 of the SDS).

SECTION 8: Exposure controls/personal protection

Occupational exposure limits

US ACGIH Threshold Limit Values

| Components | Type | Value |
|----------------------------------|---------|---------------------|
| Sodium hydroxide (CAS 1310-73-2) | Ceiling | 2 mg/m ³ |

US NIOSH: Pocket Guide to Chemical Hazards

| Components | Type | Value |
|----------------------------------|-----------------|------------------------------|
| Sodium cyanide (143-33-9) | Ceiling (10min) | 5 mg/m ³ |
| Sodium cyanide (143-33-9) | IDLH | 25 mg/m ³ (as CN) |
| Sodium hydroxide (CAS 1310-73-2) | Ceiling | 2 mg/m ³ |

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

| Components | Type | Value |
|----------------------------------|------|----------------------------|
| Sodium cyanide (143-33-9) | TWA | 5 mg/m ³ (skin) |
| Sodium hydroxide (CAS 1310-73-2) | TWA | 2 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 chemical safety 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.
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 |
| Odor | Odorless |
| Odor threshold | No data available |
| pH | 13.2 |
| Evaporation rate | No data available |

| | |
|---|----------------------------|
| Melting point | No data available |
| Freezing point | No data available |
| Initial boiling point (boiling range) | No data available |
| Flash point | No data available |
| Specific gravity | No data available |
| 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 |
| Solubility | Soluble in all proportions |
| Partition coefficient (n-octanol/water) | No data available |
| Viscosity | No data available |
| Explosive properties | No data available |
| Oxidizing properties | No data available |

SECTION 10: Stability and reactivity

| | |
|---|---|
| Reactivity | May be corrosive to metals. |
| 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 | Fluorine gas, magnesium, nitrates, nitric acid, and strong acids. |
| Hazardous decomposition products | No hazardous decomposition products under conditions of normal use. |

SECTION 11: Toxicological Information

Information on toxicological effects

Likely routes of exposure are skin/eye contact and ingestion.

| | |
|---|---|
| Most important symptoms/effects, acute and delayed | Direct skin contact may cause corrosive skin burns, deep ulcerations, and possibly permanent scarring. Exposure to high concentrations may result in symptoms similar to that following inhalation. Direct contact with eyes may be corrosive and may cause severe damage, including blindness. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Inhalation of mists can cause increased respiration and central nervous system depression. Symptoms may include dizziness, fainting, vomiting, convulsions. Inhalation could result in central nervous system depression. Exposure to high concentrations may result in tachycardia, coma, and suffocation. Ingestion may produce burning taste, upper airway, esophagus, and possibly the digestive tract. Symptoms are similar to that following inhalation. Prolonged or repeated overexposure may affect organs. |
| Acute toxicity | This product is classified as an acute toxicity hazard. See below for product and individual ingredient acute toxicity data. |

| Product | Species | Acute Toxicity Estimate (ATE) |
|------------------------------|----------------|--------------------------------------|
| Calcium Buffer (CAS Mixture) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD ₅₀ | Rabbit | 1066 mg/kg |
| <i>Inhalation</i> | | |
| LC ₅₀ | Rat | No data available |
| <i>Oral</i> | | |
| LD ₅₀ | Rat | 482 mg/kg |

| Components | Species | Acute Toxicity Data |
|---|---|---------------------|
| Sodium cyanide (143-33-9) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD ₅₀ | Rabbit | 10.4 mg/kg |
| <i>Inhalation</i> | | |
| LC ₅₀ | Rat | No data available |
| <i>Oral</i> | | |
| LD ₅₀ | Rat | 4.7 mg/kg |
| Skin corrosion/irritation | Causes skin irritation. | |
| 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 regulated | | |
| OSHA 13 Carcinogens List | | |
| Not regulated | | |
| US National Toxicology Program (NTP) Report on Carcinogens | | |
| Not regulated | | |
| Reproductive toxicity | No data available | |
| Specific target organ toxicity (single exposure) | No data available | |
| Specific target organ toxicity (repeated exposure) | Causes damage to organs through prolonged or repeated exposure. | |
| Aspiration hazard | No data available | |

SECTION 12: Ecological information

| | | |
|--------------------------------------|--|--|
| Ecotoxicity | Toxic to aquatic life. | |
| Sodium cyanide | | |
| Tillapia mossambica | 96hr LC ₅₀ = 0.04 mg/L | |
| Daphnia magna | 96hr LC ₅₀ = 0.09 mg/L | |
| Nitzchia closterium | 72hr EC ₅₀ = 0.05 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 | 3289 |
| UN Proper shipping name | Toxic liquid, corrosive inorganic, n.o.s. (sodium cyanide and sodium hydroxide) |
| Reportable Quantity | 10 lbs, sodium cyanide; 1000lbs, sodium hydroxide |
| Class (Subsidiary risk) | 6.1 (8) |
| Label(s) | 6.1, 8 |

| | |
|-----------------------------|---------------------------|
| Packing group | II |
| Special provisions | IB2, T11, TP2, TP13, TP27 |
| Packaging exceptions | 153 |
| Packaging, non-bulk | 202 |

IATA

| | |
|--------------------------------|---|
| UN number | 3289 |
| UN Proper shipping name | Toxic liquid, corrosive inorganic, n.o.s. (sodium cyanide and sodium hydroxide) |
| Class (Subsidiary risk) | 6.1 (8) |
| Packing group | II |
| Special provisions | A137 |

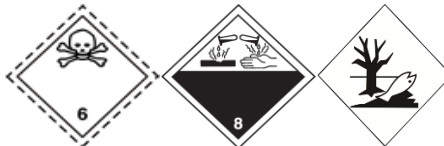
IMDG

| | |
|---|---|
| UN number | 3289 |
| UN Proper shipping name | Toxic liquid, corrosive inorganic, n.o.s. (sodium cyanide and sodium hydroxide) |
| Class (Subsidiary risk) | 6.1 (8) |
| Packing group | II |
| 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)

| <u>Chemical name</u> | <u>CAS number</u> | <u>Reportable Quantity</u> |
|----------------------|-------------------|----------------------------|
| Sodium cyanide | 143-33-9 | 10 lbs |
| Sodium hydroxide | 1310-73-2 | 1000 lbs |

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

| <u>Chemical name</u> | <u>CAS number</u> | <u>Reportable Quantity</u> |
|----------------------|-------------------|----------------------------|
| Sodium cyanide | 143-33-9 | 100 lbs |

SARA 304 Emergency Release Notification

| <u>Chemical name</u> | <u>CAS number</u> | <u>Reportable Quantity</u> |
|----------------------|-------------------|----------------------------|
| Sodium cyanide | 143-33-9 | 10 lbs |

SARA 311/312 Hazardous Chemical

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Sodium cyanide | 143-33-9 |
| Sodium hydroxide | 1310-73-2 |

SARA 313 (TRI reporting)

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Sodium cyanide | 143-33-9 |

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)**

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Sodium cyanide | 143-33-9 |

Clean Air Act (CAA) Section 112® 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)

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Sodium cyanide | 143-33-9 |

Safe Drinking Water Act (SDWA)

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Sodium cyanide | 143-33-9 |

US state regulations**California Safe Drinking Water and Toxic Enforcement Act of 1986 (California Proposition 65)**

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Sodium cyanide | 143-33-9 |

WARNING: This product can expose you to sodium cyanide (cyanide salt), which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

New Jersey Worker and Community Right-to-Know Act

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Sodium cyanide | 143-33-9 |
| Sodium hydroxide | 1310-73-2 |

Pennsylvania Worker and Community Right-to-Know Act

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Sodium cyanide | 143-33-9 |
| Sodium hydroxide | 1310-73-2 |

Rhode Island Right-to-Know Act

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Sodium cyanide | 143-33-9 |
| Sodium hydroxide | 1310-73-2 |

SECTION 16: Other information**NFPA Rating**

| | |
|---------------|-----|
| Health hazard | 2 |
| Fire hazard | 0 |
| Reactivity | 1 |
| Specific | N/A |

Disclaimer

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