



Be Right™

SAFETY DATA SHEET

Issue Date 08-Jul-2019

Revision Date 08-Jul-2019

Version 8.2

Page 1 / 16

1. IDENTIFICATION

Product identifier

Product Name Total Chlorine Buffer Solution

Other means of identification

Product Code(s) 2263504

Safety data sheet number M00470

UN/ID no UN1824

Recommended use of the chemical and restrictions on use

Recommended Use Buffer.

Uses advised against Consumer use.

Restrictions on use For Laboratory Use Only.

Details of the supplier of the safety data sheet

Manufacturer Address

Hach Company P.O.Box 389 Loveland, CO 80539 USA +1(970) 669-3050

Emergency telephone number

+1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|-----------------------------------|------------|
| Corrosive to metals | Category 1 |
| Skin corrosion/irritation | Category 1 |
| Serious eye damage/eye irritation | Category 1 |

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word

Danger

Product Code(s) 2263504
Issue Date 08-Jul-2019
Version 8.2

Product Name Total Chlorine Buffer Solution
Revision Date 08-Jul-2019
Page 2 / 16



Hazard statements

H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage

Precautionary statements

P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant
P234 - Keep only in original container
P390 - Absorb spillage to prevent material damage

Other Hazards Known

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture

Chemical Family Mixture.
Chemical nature Aqueous solution of inorganic salts.

Percent ranges are used where confidential product information is applicable.

| Chemical name | CAS No. | Percent Range | HMRIC # |
|--|------------|---------------|---------|
| Potassium iodide (KI) | 7681-11-0 | 5 - 10% | - |
| Sodium hydroxide | 1310-73-2 | 1 - 5% | - |
| Decyl phenoxybenzenedisulfonic acid, disodium salt | 36445-71-3 | <1% | - |
| Tetrasodium EDTA, dihydrate | 10378-23-1 | <1% | - |
| Benzenesulfonic acid, oxybis[decyl-, disodium salt | 70146-13-3 | <0.1% | - |
| Sodium sulfate | 7757-82-6 | <0.01% | - |

4. FIRST AID MEASURES

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

| | |
|---|--|
| Inhalation | Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention. |
| Eye contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention. |
| Ingestion | Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention. |
| Self-protection of the first aider | Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. |

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

5. FIRE-FIGHTING MEASURES

| | |
|---|--|
| Suitable Extinguishing Media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable Extinguishing Media | Caution: Use of water spray when fighting fire may be inefficient. |
| Specific hazards arising from the chemical | The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. |
| Hazardous combustion products | This material will not burn. |
| Special protective equipment for fire-fighters | Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. |

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Flammability class Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH |
|--|---|--|--|
| Potassium iodide (KI) CAS#: 7681-11-0 | TWA: 0.01 ppm inhalable fraction and vapor | NDF | NDF |
| Sodium hydroxide CAS#: 1310-73-2 | Ceiling: 2 mg/m ³ | TWA: 2 mg/m ³ (vacated) Ceiling: 2 mg/m ³ | IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³ |

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Product Code(s) 2263504
Issue Date 08-Jul-2019
Version 8.2

Product Name Total Chlorine Buffer Solution
Revision Date 08-Jul-2019
Page 5 / 16

Individual protection measures, such as personal protective equipment

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hand Protection Wear suitable gloves. Impervious gloves.

Eye/face protection Face protection shield.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

General Hygiene Considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

Environmental exposure controls Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.

Thermal hazards None under normal processing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | | | |
|-----------------------|--------|-----------------------|--------------------|
| Physical state | Liquid | | |
| Appearance | clear | Color | colorless amber |
| Odor | None | Odor threshold | Not applicable |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|--|--|-------------------------|
| Molecular weight | Not applicable | |
| pH | 11.9 | |
| Melting point/freezing point | ~ -13 °C / 8.6 °F | |
| Boiling point / boiling range | 106 °C / 222.8 °F | |
| Evaporation rate | 0.61 (water = 1) | |
| Vapor pressure | 22.427 mm Hg / 2.99 kPa at 25 °C / 77 °F | |
| Vapor density (air = 1) | 0.62 (air = 1) | |
| Specific gravity (water = 1 / air = 1) | 1.246 | |
| Partition Coefficient (n-octanol/water) | No data available | |
| Soil Organic Carbon-Water Partition Coefficient | No data available | |
| Autoignition temperature | No data available | |
| Decomposition temperature | No data available | |
| Dynamic viscosity | No data available | |
| Kinematic viscosity | No data available | |

Product Code(s) 2263504
Issue Date 08-Jul-2019
Version 8.2

Product Name Total Chlorine Buffer Solution
Revision Date 08-Jul-2019
Page 6 / 16

Solubility(ies)

Water solubility

| <u>Water solubility classification</u> | <u>Water solubility</u> | <u>Water Solubility Temperature</u> |
|--|-------------------------|-------------------------------------|
| Soluble | > 1000 mg/L | 25 °C / 77 °F |

Solubility in other solvents

| <u>Chemical Name</u> | <u>Solubility classification</u> | <u>Solubility</u> | <u>Solubility Temperature</u> |
|----------------------|----------------------------------|-------------------|-------------------------------|
| Acid | Soluble | > 1000 mg/L | 25 °C / 77 °F |

Other Information

Metal Corrosivity

Classified as corrosive to metal according to GHS criteria

Steel Corrosion Rate

0.25 mm/yr / 0.01 in/yr

Aluminum Corrosion Rate

754.63 mm/yr / 29.71 in/yr

Volatile Organic Compounds (VOC) Content

| Chemical name | CAS No. | Volatile organic compounds (VOC) content | CAA (Clean Air Act) |
|--|----------------|---|----------------------------|
| Potassium iodide (KI) | 7681-11-0 | Not applicable | - |
| Sodium hydroxide | 1310-73-2 | No data available | - |
| Decyl phenoxybenzenedisulfonic acid, disodium salt | 36445-71-3 | No data available | - |
| Tetrasodium EDTA, dihydrate | 10378-23-1 | Not applicable | - |
| Benzenesulfonic acid, oxybis[decyl-, disodium salt | 70146-13-3 | No data available | - |
| Sodium sulfate | 7757-82-6 | No data available | - |

Explosive properties

Upper explosion limit

Not applicable

Lower explosion limit

Not applicable

Flammable properties

Flash point

No data available

Flammability Limit in Air

Upper flammability limit

No data available

Lower flammability limit

No data available

Oxidizing properties

No data available.

Bulk density

Not applicable

10. STABILITY AND REACTIVITY

Reactivity

Not applicable.

Product Code(s) 2263504
Issue Date 08-Jul-2019
Version 8.2

Product Name Total Chlorine Buffer Solution
Revision Date 08-Jul-2019
Page 7 / 16

Chemical stability

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous polymerization

Hazardous polymerization does not occur.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Oxidizing agent. Acids. Bases.

Hazardous Decomposition Products

Sodium oxides. Potassium oxide. Carbon oxides. Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information

Inhalation

Corrosive by inhalation. Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.

Eye contact

Causes burns. Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact

Corrosive. Causes severe burns. Avoid contact with skin and clothing.

Ingestion

Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms

Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Acute toxicity

Based on available data, the classification criteria are not met

Product Acute Toxicity Data

No data available.

Ingredient Acute Toxicity Data

Test data reported below.

Oral Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---------------|---------------|---------------|---------------|-----------------------|--|
|---------------|---------------|---------------|---------------|-----------------------|--|

Product Code(s) 2263504
Issue Date 08-Jul-2019
Version 8.2

Product Name Total Chlorine Buffer Solution
Revision Date 08-Jul-2019
Page 8 / 16

| | | | | | |
|---|-------------------------|------------|---------------|---------------|--|
| Potassium iodide (KI) (5 - 10%) CAS#: 7681-11-0 | Rat LD ₅₀ | 2779 mg/kg | None reported | None reported | RTECS (Registry of Toxic Effects of Chemical Substances) |
| Decyl phenoxybenzenedisulfonic acid, disodium salt (<1%) CAS#: 36445-71-3 | Rat LD ₅₀ | 1000 mg/kg | None reported | None reported | EPA (United States Environmental Protection Agency) |
| Tetrasodium EDTA, dihydrate (<1%) CAS#: 10378-23-1 | Rat LD ₅₀ | 2700 mg/kg | None reported | None reported | IUCLID (The International Uniform Chemical Information Database) |

Dermal Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|----------------------------|---------------|---------------|-----------------------|---|
| Decyl phenoxybenzenedisulfonic acid, disodium salt (<1%) CAS#: 36445-71-3 | Rabbit LD ₅₀ | 2000 mg/kg | None reported | None reported | EPA (United States Environmental Protection Agency) |

Unknown Acute Toxicity

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

Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

| | |
|---|--------------------------|
| ATE_{mix} (oral) | 34,626.30 mg/kg |
| ATE_{mix} (dermal) | No information available |
| ATE_{mix} (inhalation-dust/mist) | No information available |
| ATE_{mix} (inhalation-vapor) | No information available |
| ATE_{mix} (inhalation-gas) | No information available |

Skin corrosion/irritation

Causes severe burns.

Product Skin Corrosion/Irritation Data

No data available.

Ingredient Skin Corrosion/Irritation Data

Test data reported below.

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|----------------------|---------|---------------|---------------|-------------------|--|
| Potassium iodide (KI) (5 - 10%) CAS#: 7681-11-0 | Standard Draize Test | Rabbit | None reported | None reported | Skin irritant | Vendor SDS |
| Sodium hydroxide (1 - 5%) CAS#: 1310-73-2 | Patch test | Human | 20 mg | 24 hours | Corrosive to skin | RTECS (Registry of Toxic Effects of Chemical Substances) |
| Decyl phenoxybenzenedisulfonic acid, disodium | None reported | Rabbit | None reported | None reported | Skin irritant | No information available |

Product Code(s) 2263504
Issue Date 08-Jul-2019
Version 8.2

Product Name Total Chlorine Buffer Solution
Revision Date 08-Jul-2019
Page 9 / 16

| | | | | | | |
|---|-------------------------|--------|--------|---------|--|---|
| salt (<1%) CAS#: 36445-71-3 | | | | | | |
| Sodium sulfate (<0.01%) CAS#: 7757-82-6 | Standard Draize Test | Rabbit | 500 mg | 4 hours | Not corrosive or irritating to skin | ECHA (The European Chemicals Agency) |

Serious eye damage/irritation

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Product Serious Eye Damage/Eye Irritation Data

No data available.

Ingredient Eye Damage/Eye Irritation Data

Test data reported below.

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|-------------------------|---------|---------------|---------------|--|--|
| Potassium iodide (KI) (5 - 10%) CAS#: 7681-11-0 | Standard Draize Test | Rabbit | None reported | 24 hours | Eye irritant | Vendor SDS |
| Sodium hydroxide (1 - 5%) CAS#: 1310-73-2 | Standard Draize Test | Rabbit | 0.05 mg | 24 hours | Corrosive to eyes | RTECS (Registry of Toxic Effects of Chemical Substances) |
| Decyl phenoxybenzenedisul fonic acid, disodium salt (<1%) CAS#: 36445-71-3 | None reported | Rabbit | None reported | None reported | Corrosive to eyes | No information available |
| Sodium sulfate (<0.01%) CAS#: 7757-82-6 | Standard Draize Test | Rabbit | 90 mg | 24 hours | Not corrosive or irritating to eyes | ECHA (The European Chemicals Agency) |

Respiratory or skin sensitization

Based on available data, the classification criteria are not met.

Product Sensitization Data

No data available.

Ingredient Sensitization Data

Test data reported below.

Skin Sensitization Exposure Route

| Chemical name | Test method | Species | Results | Key literature references and sources for data |
|---|---|------------|---------------------------------------|---|
| Potassium iodide (KI) (5 - 10%) CAS#: 7681-11-0 | Patch test | Human | Not confirmed to be a skin sensitizer | ERMA (New Zealand's Environmental Risk Management Authority) |
| Sodium sulfate (<0.01%) CAS#: 7757-82-6 | OECD Test No. 406: Skin Sensitization | Guinea pig | Not confirmed to be a skin sensitizer | HSDB (Hazardous Substances Data Bank) |

STOT - single exposure

Based on available data, the classification criteria are not met.

Product Specific Target Organ Toxicity Single Exposure Data

No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data

Test data reported below.

Oral Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|---------------------------|---------------|---------------|---|--|
| Potassium iodide (KI) (5 - 10%) CAS#: 7681-11-0 | Mouse LD _{Lo} | 1862 mg/kg | None reported | Lungs, Thorax, or Respiration Dyspnea | RTECS (Registry of Toxic Effects of Chemical Substances) |

STOT - repeated exposure

Based on available data, the classification criteria are not met.

Product Specific Target Organ Toxicity Repeat Dose Data

No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

Test data reported below.

Oral Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|---------------|---------------|---------------|-----------------------|--|
| Potassium iodide (KI) (5 - 10%) CAS#: 7681-11-0 | Rat NOAEL | 0.5 mg/kg | 90 days | None reported | ECHA (The European Chemicals Agency) |

Carcinogenicity

Based on available data, the classification criteria are not met.

Product Carcinogenicity Data

No data available.

Ingredient Carcinogenicity Data

No data available.

| Chemical name | CAS No. | ACGIH | IARC | NTP | OSHA |
|--|------------|-------|------|-----|------|
| Potassium iodide (KI) | 7681-11-0 | - | - | - | - |
| Sodium hydroxide | 1310-73-2 | - | - | - | - |
| Decyl phenoxybenzenedisulfonic acid, disodium salt | 36445-71-3 | - | - | - | - |
| Tetrasodium EDTA, dihydrate | 10378-23-1 | - | - | - | - |
| Benzenesulfonic acid, oxybis[decyl-, disodium salt | 70146-13-3 | - | - | - | - |
| Sodium sulfate | 7757-82-6 | - | - | - | - |

Legend

| | |
|--|----------------|
| ACGIH (American Conference of Governmental Industrial Hygienists) | Does not apply |
| IARC (International Agency for Research on Cancer) | Does not apply |
| NTP (National Toxicology Program) | Does not apply |
| OSHA (Occupational Safety and Health Administration of the US Department of Labor) | Does not apply |

Germ cell mutagenicity

| | |
|-----------|--------------|
| EN / AGHS | Page 10 / 16 |
|-----------|--------------|

Based on available data, the classification criteria are not met.

Product Germ Cell Mutagenicity invitro Data

No data available.

Ingredient Germ Cell Mutagenicity invitro Data

Test data reported below.

| Chemical name | Test | Cell Strain | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|----------------------|-------------------|---------------|---------------|---------------------------------------|--|
| Potassium iodide (KI) (5 - 10%) CAS#: 7681-11-0 | Cytogenetic analysis | Rat ascites tumor | 500 mg/kg | None reported | Positive test result for mutagenicity | RTECS (Registry of Toxic Effects of Chemical Substances) |

Product Germ Cell Mutagenicity invivo Data

No data available.

Ingredient Germ Cell Mutagenicity invivo Data

No data available.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Product Reproductive Toxicity Data

No data available.

Ingredient Reproductive Toxicity Data

Test data reported below.

Oral Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|------------------------|---------------|---------------|---|--|
| Potassium iodide (KI) (5 - 10%) CAS#: 7681-11-0 | Human TD _{Lo} | 2700 mg/kg | 39 weeks | Specific Developmental Abnormalities Endocrine System | RTECS (Registry of Toxic Effects of Chemical Substances) |
| Sodium sulfate (<0.01%) CAS#: 7757-82-6 | Mouse TD _{Lo} | 14000 mg/kg | 4 days | Effects on Newborn Other neonatal measures or effects | RTECS (Registry of Toxic Effects of Chemical Substances) |

Aspiration hazard

Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Based on available data, the classification criteria are not met.

Unknown aquatic toxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Product Ecological Data

Aquatic Acute Toxicity

No data available.

Aquatic Chronic Toxicity

No data available.

Product Code(s) 2263504
Issue Date 08-Jul-2019
Version 8.2

Product Name Total Chlorine Buffer Solution
Revision Date 08-Jul-2019
Page 12 / 16

Ingredient Ecological Data

Aquatic Acute Toxicity

Test data reported below.

Fish

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|---|----------------------|----------------------------|----------------------|----------------------|--|
| Sodium hydroxide (1 - 5%) CAS#: 1310-73-2 | 96 hours | <i>Oncorhynchus mykiss</i> | LC ₅₀ | 45.4 mg/L | IUCLID (The International Uniform Chemical Information Database) |
| Decyl phenoxybenzenedisulfonic acid, disodium salt (<1%) CAS#: 36445-71-3 | 96 hours | None reported | LC ₅₀ | 3 mg/L | No information available |
| Sodium sulfate (<0.01%) CAS#: 7757-82-6 | 96 hours | None reported | LC ₅₀ | 56 mg/L | IUCLID (The International Uniform Chemical Information Database) |

Crustacea

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|---|----------------------|----------------------|----------------------|----------------------|--|
| Sodium hydroxide (1 - 5%) CAS#: 1310-73-2 | 48 Hours | <i>Daphnia sp.</i> | EC ₅₀ | 40.4 mg/L | IUCLID (The International Uniform Chemical Information Database) |
| Sodium sulfate (<0.01%) CAS#: 7757-82-6 | 48 Hours | <i>Daphnia magna</i> | EC ₅₀ | 3150 mg/L | IUCLID (The International Uniform Chemical Information Database) |

Aquatic Chronic Toxicity

No data available.

Persistence and degradability

Product Biodegradability Data

No data available.

Bioaccumulation

Product Bioaccumulation Data

No data available.

Partition Coefficient (n-octanol/water)

No data available

Mobility

Soil Organic Carbon-Water Partition Coefficient

No data available

Other adverse effects

Contains a substance with an endocrine-disrupting potential.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Product Code(s) 2263504
Issue Date 08-Jul-2019
Version 8.2

Product Name Total Chlorine Buffer Solution
Revision Date 08-Jul-2019
Page 13 / 16

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

US EPA Waste Number D002

Special instructions for disposal Work in an approved fume hood. Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system.

14. TRANSPORT INFORMATION

DOT

UN/ID no UN1824
Proper shipping name SODIUM HYDROXIDE SOLUTION
Hazard Class 8
Packing Group II
Description UN1824, SODIUM HYDROXIDE SOLUTION, 8, II
Emergency Response Guide Number 154

TDG

UN/ID no UN1824
Proper shipping name SODIUM HYDROXIDE SOLUTION
Hazard Class 8
Packing Group II
Description UN1824, SODIUM HYDROXIDE SOLUTION, 8, II

IATA

UN/ID no UN1824
Proper shipping name Sodium hydroxide solution
Hazard Class 8
Packing Group II
ERG Code 8L
Description UN1824, Sodium hydroxide solution, 8, II

IMDG

UN/ID no UN1824
Proper shipping name SODIUM HYDROXIDE SOLUTION
Hazard Class 8
Packing Group II
EmS-No F-A, S-B
Description UN1824, SODIUM HYDROXIDE SOLUTION, 8, II

Note: No special precautions necessary.

Additional information

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies. If the item is part of a reagent set or kit the classification would change to the following: UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories

TSCA Complies

Product Code(s) 2263504
Issue Date 08-Jul-2019
Version 8.2

Product Name Total Chlorine Buffer Solution
Revision Date 08-Jul-2019
Page 14 / 16

DSL/NDSL Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS Complies
ENCS Does not comply
IECSC Complies
KECL Complies
PICCS Complies
TCSI Complies
AICS Complies
NZIoC Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard Yes
Chronic Health Hazard Yes
Fire hazard No
Sudden release of pressure hazard No
Reactive Hazard No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

| Chemical name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|-------------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Sodium hydroxide 1310-73-2 | 1000 lb | - | - | X |

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

| Chemical name | Hazardous Substances RQs | CERCLA/SARA RQ | Reportable Quantity (RQ) |
|-------------------------------|--------------------------|----------------|---|
| Sodium hydroxide 1310-73-2 | 1000 lb | - | RQ 1000 lb final RQ RQ 454 kg final RQ |

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

Product Code(s) 2263504
 Issue Date 08-Jul-2019
 Version 8.2

Product Name Total Chlorine Buffer Solution
 Revision Date 08-Jul-2019
 Page 15 / 16

IMERC: Not applicable

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|-------------------------------|------------|---------------|--------------|
| Sodium hydroxide 1310-73-2 | X | X | X |
| Sodium sulfate 7757-82-6 | - | X | X |

U.S. EPA Label Information

| Chemical name | FIFRA | FDA |
|--|----------|-----------------|
| Potassium iodide (KI) | 180.0940 | 21 CFR 184.1634 |
| Sodium hydroxide | 180.0910 | 21 CFR 184.1763 |
| Decyl phenoxybenzenedisulfonic acid, disodium salt | 180.0910 | - |
| Benzenesulfonic acid, oxybis[decyl-, disodium salt | 180.0910 | - |
| Sodium sulfate | - | 21 CFR 186.1797 |

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

None

Additional information

Global Automotive Declarable Substance List (GADSL)

Not applicable

NFPA and HMIS Classifications

| | | | | |
|-------------|---------------------------|-------------------------|-----------------------------|---|
| NFPA | Health hazards - 3 | Flammability - 0 | Instability - 0 | Physical and chemical properties - |
| HMIS | Health hazards - 3 | Flammability - 0 | Physical hazards - 0 | Personal protection - X |

Key or legend to abbreviations and acronyms used in the safety data sheet

NIOSH IDLH *Immediately Dangerous to Life or Health*
 ACGIH ACGIH (American Conference of Governmental Industrial Hygienists)
 NDF *no data*

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | | |
|-----|---------------------------------|---------|---|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| MAC | Maximum Allowable Concentration | Ceiling | Ceiling Limit Value |
| X | Listed | Vacated | These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these |

Product Code(s) 2263504
Issue Date 08-Jul-2019
Version 8.2

Product Name Total Chlorine Buffer Solution
Revision Date 08-Jul-2019
Page 16 / 16

"liberated" exposure limits in their state regulations.

| | | | |
|------|---------------------------|------|-----------------------|
| SKN* | Skin designation | SKN+ | Skin sensitization |
| RSP+ | Respiratory sensitization | ** | Hazard Designation |
| C | Carcinogen | R | Reproductive toxicant |
| M | mutagen | | |

Prepared By Hach Product Compliance Department

Issue Date 08-Jul-2019

Revision Date 08-Jul-2019

Revision Note None

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

HACH COMPANY©2019

End of Safety Data Sheet