1 Identification

- **Product identifier**
  - Trade name: Calcium Buffer Solution
  - Article number: 205-14-5

- **Details of the supplier of the safety data sheet**
  - Manufacturer/Supplier: OFI Testing Equipment Inc.
    11302 Steeplecrest Dr.
    Houston, TX 77065
    (877) 837-8683
  - Information department: techservices@ofite.com
  - Emergency telephone number:
    INFOTRAC USA - CANADA: 1-800-535-5053
    INTERNATIONAL: 1-352-323-3500

2 Hazard(s) identification

- **Classification of the substance or mixture**

  GHS05 Corrosion

  Skin Corr. 1A  H314  Causes severe skin burns and eye damage.

- **Label elements**
  - GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
  - Hazard pictograms

  GHS05

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  - Sodium Hydroxide

- **Hazard statements**
  - Causes severe skin burns and eye damage.

- **Precautionary statements**
  - If medical advice is needed, have product container or label at hand.
  - Keep out of reach of children.
  - Read label before use.
  - Do not breathe dust/fume/gas/mist/vapours/spray.
  - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - Specific treatment (see on this label).
  - Store locked up.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.
Trade name: Calcium Buffer Solution

3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.

- Dangerous components:

<table>
<thead>
<tr>
<th>Chemical Code</th>
<th>Chemical Name</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1310-73-2</td>
<td>Sodium Hydroxide</td>
<td>16.0%</td>
</tr>
</tbody>
</table>

- Table of Nonhazardous Ingredients

<table>
<thead>
<tr>
<th>Chemical Code</th>
<th>Chemical Name</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>7732-18-5</td>
<td>Water, Deionized, Distilled</td>
<td>84.0%</td>
</tr>
</tbody>
</table>

4 First-aid measures

- Description of first aid measures
- General information: Immediately remove any clothing soiled by the product.
- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing: Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- Information for doctor:
- Most important symptoms and effects, both acute and delayed: No further relevant information available.
- Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents:
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters
- Protective equipment: No special measures required.
6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.

· Environmental precautions:
  Dilute with plenty of water.
  Do not allow to enter sewers/surface or ground water.

· Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Use neutralizing agent.
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.

· Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

· Handling:
  · Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
  · Information about protection against explosions and fires: No special measures required.

· Conditions for safe storage, including any incompatibilities
  · Storage:
    · Requirements to be met by storerooms and receptacles: No special requirements.
    · Information about storage in one common storage facility: Not required.
    · Further information about storage conditions: Keep receptacle tightly sealed.
  · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

· Control parameters

<table>
<thead>
<tr>
<th>Components with limit values that require monitoring at the workplace:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1310-73-2 Sodium Hydroxide</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL</td>
<td>Long-term value: 2 mg/m³</td>
</tr>
<tr>
<td>REL</td>
<td>Ceiling limit value: 2 mg/m³</td>
</tr>
<tr>
<td>TLV</td>
<td>Ceiling limit value: 2 mg/m³</td>
</tr>
</tbody>
</table>

· Additional information: The lists that were valid during the creation were used as basis.

· Exposure controls

· Personal protective equipment:

· General protective and hygienic measures:
  Keep away from foodstuffs, beverages and feed.
  Immediately remove all soiled and contaminated clothing.
  Wash hands before breaks and at the end of work.
  Avoid contact with the eyes and skin.
· Breathing equipment:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:

Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties
· General Information
· Appearance:
  - Form: Liquid
  - Color: Colorless
  - Odor: Odorless
  - Odour threshold: Not determined.
· pH-value: Not determined.
· Change in condition
  - Melting point/Melting range: Undetermined.
  - Boiling point/Boiling range: 100 °C (212 °F)
· Flash point: Not applicable.
· Flammability (solid, gaseous): Not applicable.
· Ignition temperature:
  - Decomposition temperature: Not determined.
· Auto igniting: Product is not selfigniting.
· Danger of explosion: Product does not present an explosion hazard.
· Explosion limits:
  - Lower: Not determined.
Safety Data Sheet
acc. to OSHA HCS

Trade name: Calcium Buffer Solution

<table>
<thead>
<tr>
<th>Upper:</th>
<th>Not determined.</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Vapor pressure at 20 °C (68 °F):</td>
<td>23 hPa (17 mm Hg)</td>
</tr>
<tr>
<td>· Density at 20 °C (68 °F):</td>
<td>1.1921 g/cm³ (9.948 lbs/gal)</td>
</tr>
<tr>
<td>· Relative density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Vapour density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Evaporation rate</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Solubility in / Miscibility with Water:</td>
<td>Fully miscible.</td>
</tr>
<tr>
<td>· Partition coefficient (n-octanol/water):</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Viscosity:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Dynamic:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Kinematic:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Solvent content:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Organic solvents:</td>
<td>0.0 %</td>
</tr>
<tr>
<td>· Water:</td>
<td>84.0 %</td>
</tr>
<tr>
<td>· VOC content:</td>
<td>16.0 %</td>
</tr>
<tr>
<td>· Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

10 Stability and reactivity

· Reactivity
· Chemical stability
· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
· Possibility of hazardous reactions No dangerous reactions known.
· Conditions to avoid No further relevant information available.
· Incompatible materials: No further relevant information available.
· Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

· Information on toxicological effects
· Acute toxicity:

· LD/LC50 values that are relevant for classification:
1310-73-2 Sodium Hydroxide

| Oral LD50 | 2000 mg/kg (rat) |

· Primary irritant effect:
· on the skin: Strong caustic effect on skin and mucous membranes.
· on the eye: Strong caustic effect.
· Sensitization: No sensitizing effects known.
· Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

(Contd. of page 4)
12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
- Behavior in environmental systems:
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
- Additional ecological information:
  - General notes:
    Water hazard class 1 (Self-assessment): slightly hazardous for water
    Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
    Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation:
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.
- Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number
  - DOT, IMDG, IATA: UN1824
- UN proper shipping name
  - DOT: Sodium hydroxide solution
  - IMDG, IATA: SODIUM HYDROXIDE SOLUTION
## 38.0.30

### Transport hazard class(es)

- **DOT**

#### IMDG, IATA

- **Class**
  - 8 Corrosive substances.
- **Label**
  - 8

### Packing group

- **DOT, IMDG, IATA**
  - II

### Environmental hazards:

#### Marine pollutant:

- No

#### Special precautions for user

- **Warning**: Corrosive substances
  - 80

#### EMS Number:

- F-A,S-B

#### Segregation groups

- Alkalis

### Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

- Not applicable.

#### UN "Model Regulation"

- UN1824, Sodium hydroxide solution, 8, II

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## 15 Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

- **Sara**

#### Section 355 (extremely hazardous substances):

- None of the ingredients is listed.

#### Section 313 (Specific toxic chemical listings):

- None of the ingredients is listed.

#### TSCA (Toxic Substances Control Act):

- All ingredients are listed.

### Proposition 65

#### Chemicals known to cause cancer:

- None of the ingredients is listed.

#### Chemicals known to cause reproductive toxicity for females:

- None of the ingredients is listed.

#### Chemicals known to cause reproductive toxicity for males:

- None of the ingredients is listed.
38.0.30

· Chemicals known to cause developmental toxicity:
  None of the ingredients is listed.

· Carcinogenic categories

  · EPA (Environmental Protection Agency)
    None of the ingredients is listed.
  
  · TLV (Threshold Limit Value established by ACGIH)
    None of the ingredients is listed.
  
  · NIOSH-Ca (National Institute for Occupational Safety and Health)
    None of the ingredients is listed.
  
  · OSHA-Ca (Occupational Safety & Health Administration)
    None of the ingredients is listed.

· GHS label elements
  The product is classified and labeled according to the Globally Harmonized System (GHS).
  
· Hazard pictograms

  
  GHS05
  
· Signal word
  Danger
  
· Hazard-determining components of labeling:
  Sodium Hydroxide

· Hazard statements
  Causes severe skin burns and eye damage.

· Precautionary statements
  If medical advice is needed, have product container or label at hand.
  Keep out of reach of children.
  Read label before use.
  Do not breathe dust/fume/gas/mist/vapours/spray.
  IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  Specific treatment (see on this label).
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

· Chemical safety assessment:
  A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Date of preparation / last revision
  Creation date for SDS 05-08-14 LS
  05/08/2014 / -

· Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Routé (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
Trade name: Calcium Buffer Solution

EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

USA