SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product form: Mixture
Product name: Fehling's Solution B, Alkaline No. 2
Product code: LC14210

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture: For laboratory and manufacturing use only.

1.3. Details of the supplier of the safety data sheet
LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number
Emergency number: CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
GHS-US classification
Skin Corr. 1A H314
Eye Dam. 1 H318

2.2. Label elements
GHS-US labelling
Hazard pictograms (GHS-US):

Signal word (GHS-US): Danger
Hazard statements (GHS-US): H314 - Causes severe skin burns and eye damage
Precautionary statements (GHS-US):
P260 - Do not breathe mist, spray, vapours
P264 - Wash exposed skin thoroughly after handling
P280 - Wear eye protection, face protection, protective clothing, protective gloves
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303+P361+P333 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P303+P361+P360 - 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 comply with local, state and federal regulations

2.3. Other hazards
Other hazards not contributing to the classification: None.

2.4. Unknown acute toxicity (GHS-US)
No data available

SECTION 3: Composition/information on ingredients

3.1. Substance
Not applicable
### 3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>(CAS No) 7732-18-5</td>
<td>60.9</td>
<td>Not classified</td>
</tr>
<tr>
<td>Sodium Potassium Tartrate, Tetrahydrate</td>
<td>(CAS No) 6381-59-5</td>
<td>34.6</td>
<td>Not classified</td>
</tr>
<tr>
<td>Sodium Hydroxide</td>
<td>(CAS No) 1310-73-2</td>
<td>4.5</td>
<td>Acute Tox. 4 (Dermal), H312 Skin Corr. 1A, H314 Eye Dam. 1, H318 Aquatic Acute 3, H402</td>
</tr>
</tbody>
</table>

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- **First-aid measures general**: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- **First-aid measures after inhalation**: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
- **First-aid measures after skin contact**: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.
- **First-aid measures after eye contact**: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
- **First-aid measures after ingestion**: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

#### 4.2. Most important symptoms and effects, both acute and delayed

- **Symptoms/injuries**: Causes severe skin burns and eye damage.
- **Symptoms/injuries after inhalation**: Corrosion of the upper respiratory tract.
- **Symptoms/injuries after skin contact**: Caustic burns/corrosion of the skin. Blisters. Destruction of tissue.
- **Symptoms/injuries after eye contact**: Causes serious eye damage.
- **Symptoms/injuries upon intravenous administration**: Not available.
- **Chronic symptoms**: No specific information available.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Obtain medical assistance.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- **Unsuitable extinguishing media**: Do not use a heavy water stream.

#### 5.2. Special hazards arising from the substance or mixture

- **Fire hazard**: Not flammable.
- **Explosion hazard**: Not applicable.
- **Reactivity**: Thermal decomposition generates: Corrosive vapours.

#### 5.3. Advice for firefighters

- **Firefighting instructions**: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- **Protection during firefighting**: Do not enter fire area without proper protective equipment, including respiratory protection.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

- **General measures**: Dike and contain spill.

#### 6.1.1. For non-emergency personnel

- **Protective equipment**: Wear chemically protective gloves, lab coat or apron to prevent prolonged or repeated skin contact.
- **Emergency procedures**: Evacuate unnecessary personnel.
6.1.2. For emergency responders
Protective equipment : Equip cleanup crew with proper protection.
Emergency procedures : Ventilate area.

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Do not breathe mist, spray, vapours. Avoid contact during pregnancy/while nursing.
Hygiene measures : Wash exposed skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures : Comply with applicable regulations.
Storage conditions : Keep only in the original container in a cool, well ventilated place away from : incompatible materials. Keep container closed when not in use.
Incompatible products : metals. Strong acids.
Incompatible materials : Direct sunlight.
Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: (strong) acids. metal powders. metals.
Packaging materials : MATERIAL TO AVOID: aluminium, tin, zinc.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
<table>
<thead>
<tr>
<th>Sodium Hydroxide (1310-73-2)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USA ACGIH</td>
<td>ACGIH Ceiling (mg/m³)</td>
</tr>
<tr>
<td>USA OSHA</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
</tr>
</tbody>
</table>

8.2. Exposure controls
Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Personal protective equipment : Avoid all unnecessary exposure.
Hand protection : Wear protective gloves.
Eye protection : Chemical goggles or face shield.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : Wear appropriate mask.
Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state : Liquid
Colour : Colourless
Odour : Odourless
Odour threshold : No data available
pH : \( \geq 14 \)
Relative evaporation rate (butylacetate=1) : No data available
Melting point : No data available
Fehling's Solution B, Alkaline No. 2
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapour pressure : No data available
Relative vapour density at 20 °C : No data available
Relative density : No data available
Solubility : Soluble in water.
   Water: Solubility in water of component(s) of the mixture :
   • Sodium Hydroxide:  42 g/100ml
Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : Not applicable.
Oxidising properties : No data available.
Explosive limits : No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
Thermal decomposition generates : Corrosive vapours.

10.2. Chemical stability
Not established.

10.3. Possibility of hazardous reactions
Not established.

10.4. Conditions to avoid
Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials
Strong acids.

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified

<table>
<thead>
<tr>
<th>Sodium Hydroxide (1310-73-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 dermal rabbit</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water (7732-18-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>ATE US (oral)</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes severe skin burns and eye damage.
   pH: ≥ 14

Serious eye damage/irritation : Causes serious eye damage.
   pH: ≥ 14

Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified  
Based on available data, the classification criteria are not met
Carcinogenicity : Not classified
Reproductive toxicity : Not classified  
Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified  
Based on available data, the classification criteria are not met
Aspiration hazard : Not classified  
Based on available data, the classification criteria are not met
Potential adverse human health effects and symptoms
Symptoms/injuries after inhalation : Corrosion of the upper respiratory tract.
Symptoms/injuries after skin contact : Caustic burns/corrosion of the skin. Blisters. Destruction of tissue.
Symptoms/injuries after eye contact : Causes serious eye damage.
Symptoms/injuries upon intravenous administration : Not available.
Chronic symptoms : No specific information available.

### SECTION 12: Ecological information

#### 12.1. Toxicity

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 fishes 1</th>
<th>EC50 Daphnia 1</th>
<th>LC50 fish 2</th>
<th>TLM fish 1</th>
<th>TLM fish 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hydroxide</td>
<td>45.4 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss); Solution &gt;=50%)</td>
<td>40.4 mg/l (48 h; Ceriodaphnia sp.; Nominal concentration)</td>
<td>189 mg/l (48 h; Leuciscus idus)</td>
<td>99 mg/l (48 h; Lepomis macrochirus)</td>
<td>125 ppm (96 h; Gambusia affinis)</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Substance</th>
<th>Persistence and degradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fehling’s Solution B, Alkaline No. 2</td>
<td>Not established.</td>
</tr>
<tr>
<td>Sodium Hydroxide (1310-73-2)</td>
<td>Biodegradability: not applicable. No (test)data on mobility of the substance available.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Water (7732-18-5)</td>
<td>Not established.</td>
</tr>
</tbody>
</table>

#### 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Substance</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fehling’s Solution B, Alkaline No. 2</td>
<td>Not established.</td>
</tr>
<tr>
<td>Sodium Hydroxide (1310-73-2)</td>
<td>Bioaccumulation: not applicable.</td>
</tr>
<tr>
<td>Water (7732-18-5)</td>
<td>Not established.</td>
</tr>
</tbody>
</table>
Bioaccumulative potential: Not established.

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Effect on ozone layer: No additional information available
Effect on the global warming: No known ecological damage caused by this product.
Other information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT
Transport document description: UN1824 Sodium hydroxide solution, 8, II
UN-No.(DOT): 1824
DOT NA no.: UN1824
DOT Proper Shipping Name: Sodium hydroxide solution
Department of Transportation (DOT) Hazard Classes: 8 - Class 8 - Corrosive material 49 CFR 173.136
Hazard labels (DOT): 8 - Corrosive

Packing group (DOT): II - Medium Danger
1B2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.
N34 - Aluminum construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.
T7 - 4 178.274(d)(2) Normal............. 178.275(d)(3)
TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.

DOT Packaging Exceptions (49 CFR 173.xxx): 154
DOT Packaging Non Bulk (49 CFR 173.xxx): 202
DOT Packaging Bulk (49 CFR 173.xxx): 242
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27): 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75): 30 L
DOT Vessel Stowage Location: A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other: 52 - Stow “separated from” acids
### Additional information

Other information : No supplementary information available.

### ADR

Transport document description :

#### Transport by sea

No additional information available

#### Air transport

No additional information available

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Sodium Hydroxide (1310-73-2)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td></td>
</tr>
<tr>
<td>RQ (Reportable quantity, section 304 of EPA's List of Lists) :</td>
<td>1000 lb</td>
</tr>
<tr>
<td>SARA Section 311/312 Hazard Classes</td>
<td>Immediate (acute) health hazard</td>
</tr>
</tbody>
</table>

#### 15.2. International regulations

##### CANADA

**Fehling's Solution B, Alkaline No. 2**

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Class E - Corrosive Material</td>
<td></td>
</tr>
</tbody>
</table>

**Sodium Hydroxide (1310-73-2)**

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Class E - Corrosive Material</td>
<td></td>
</tr>
</tbody>
</table>

**Water (7732-18-5)**

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncontrolled product according to WHMIS classification criteria</td>
<td></td>
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</tbody>
</table>

**Sodium Potassium Tartrate, Tetrahydrate (6381-59-5)**

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncontrolled product according to WHMIS classification criteria</td>
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</tr>
</tbody>
</table>

#### EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

#### 15.2. National regulations

No additional information available

#### 15.3. US State regulations

### SECTION 16: Other information

| Indication of changes | : Revision - See : *.
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision date</td>
<td>: 10/14/2014</td>
</tr>
<tr>
<td>Other information</td>
<td>: None.</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16:

<table>
<thead>
<tr>
<th>Acute Tox. 4 (Dermal)</th>
<th>Acute toxicity (dermal), Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Acute 3</td>
<td>Hazardous to the aquatic environment — Acute Hazard, Category 3</td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>Serious eye damage/eye irritation, Category 1</td>
</tr>
<tr>
<td>Skin Corr. 1A</td>
<td>Skin corrosion/irritation, Category 1A</td>
</tr>
</tbody>
</table>
Fehling's Solution B, Alkaline No. 2
Safety Data Sheet

NFPA health hazard:
- H312: Harmful in contact with skin
- H314: Causes severe skin burns and eye damage
- H318: Causes serious eye damage
- H402: Harmful to aquatic life

NFPA health hazard:
- 3: Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard:
- 0: Materials that will not burn.

NFPA reactivity:
- 1: Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.

HMIS III Rating:
- Health: 3 - Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
- Flammability: 0 - Minimal Hazard
- Physical: 1 - Slight Hazard
- Personal Protection: C

SDS US (GHS HazCom 2012)

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