Section 1, Identification

PRODUCT: Buffer pH 4.01, Buffer pH 6.86, Buffer pH 9.18,

PART NUMBERS:
M1100EU, pH Buffer 4.01, pH 6.86, pH 9.18, each in 500 mL (Buffer Kit)
M1263VM, pH Buffer 4.01 in 3.8 L M1200HQ pH Buffer 4.01 in 20 L
M1263VN pH Buffer 6.86 in 3.8 L M1200HR pH Buffer 6.86 in 20 L
M1263VP pH Buffer 9.18 in 3.8 L M1200HS, pH Buffer 9.18, in 20 L

recommended use pH reference standard.
restrictions on use for laboratory use

Section 2, Hazard(s) identification

Based on available data, the classification criteria are not met (not hazardous).
label elements none required; PPE icons, gloves and apron, as in Section 8.
hazards not otherwise classified none known

Section 3, Composition/information on ingredients

<table>
<thead>
<tr>
<th>Buffer</th>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>Water</td>
<td>7732-18-5</td>
<td>99 +</td>
</tr>
<tr>
<td>pH 4.01</td>
<td>Potassium Acid Phthalate</td>
<td>877-24-7</td>
<td>1</td>
</tr>
<tr>
<td>pH 6.86</td>
<td>Monopotassium Phosphate</td>
<td>7778-77-0</td>
<td>0.3</td>
</tr>
<tr>
<td>pH 6.86</td>
<td>Disodium Phosphate</td>
<td>7758-75-4</td>
<td>0.3</td>
</tr>
<tr>
<td>pH 9.18</td>
<td>Sodium Borate</td>
<td>1309-96-4</td>
<td>0.4</td>
</tr>
</tbody>
</table>
pH Buffers
Safety Data Sheet

<table>
<thead>
<tr>
<th>Buffer</th>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH 4.01</td>
<td>Red #40</td>
<td>68583-95-9</td>
<td>0.0005</td>
</tr>
<tr>
<td>pH 9.18</td>
<td>Yellow #6</td>
<td>2983-94-0</td>
<td>0.0005</td>
</tr>
<tr>
<td>pH 6.86</td>
<td>Blue #1</td>
<td>3844-45-9</td>
<td>0.0003</td>
</tr>
<tr>
<td>All</td>
<td>Proprietary preservative</td>
<td>N/A</td>
<td>0.00008</td>
</tr>
</tbody>
</table>

Section 4, First-aid measures
Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.
Potential Chronic Health Effects:
Repeated or prolonged exposure is not known to aggravate any medical condition.
Eye Contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention if irritation persists.
Skin Contact: Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
Inhalation: Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.
Ingestion: Do not induce vomiting. Obtain medical attention.
Most important symptoms/effects: None reasonably foreseen.
Notes to Physician: Treat symptomatically

Section 5, Fire-fighting measures
Suitable Extinguishing Media: Substance is nonflammable; use appropriate means to extinguish surrounding fire. Unsuitable Extinguishing Media: N/A
Flash Point, Auto ignition Temperature, Explosion Limits: Not applicable
Sensitivity to Mechanical Impact, Sensitivity to Static Discharge t applicable
Specific Hazards/Hazardous Combustion Products: Thermal decomposition can lead to release of irritating gases and vapors.

Section 6, Accidental release measures
Personal Precautions: Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.
Environmental Precautions: Should not be released into the environment. See Methods for Containment and Cleanup: Soak up with inert absorbent material.
Keep in suitable, closed containers pending a waste disposal evaluation.

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Section 7, Handling and storage
Handling: Avoid contact with skin and eyes.
Storage: Keep container tightly closed in a cool, well-ventilated place.
Storage Code: Green - general chemical storage

Section 8, Exposure controls/personal protection
Skin and body protection: Wear appropriate protective gloves and clothing to prevent skin exposure.
Hygiene Measures Practice good industrial hygiene and safety measures.
Personal Protective Equipment (PPE): impervious gloves, apron or lab coat.

Section 9, Physical and chemical properties
Formula: See Section 3
Vapor Pressure: No data available
Molecular Weight: No data available
Evaporation Rate (BuAc=1): No data available
Appearance: red, pH 4; yellow-orange, pH 6.86; violet, pH 9.18
Vapor Density (Air=1): No data available
Odor: None
Specific Gravity: Approx. 1
Solubility in Water: Soluble; Viscosity: as water
pH: as listed in section 3
Melting Point: Estimated 0° C
Auto ignition Temp, Decomp. Temp, Flash Point, Flammable Limits: N/A
Boiling Point: 100° C

Section 10, Stability and reactivity
Reactive Hazard: None known.
Stability: Stable. Keep container closed when not in use.
Conditions to Avoid: Excess heat, air exposure, or freezing.
Incompatible Materials None known
Hazardous Decomposition Products: Excess heat or flames can lead to release of irritating gases and vapors
Hazardous Polymerization: does not occur.
Hazardous Reactions: None under normal use.
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Section 11, Toxicological information

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Acid Phthalate</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Eye irritant</td>
</tr>
<tr>
<td>Monopotassium Phosphate</td>
<td>Not listed</td>
<td>Not listed</td>
<td>N/A</td>
</tr>
<tr>
<td>Disodium Phosphate</td>
<td>Not listed</td>
<td>Not listed</td>
<td>N/A</td>
</tr>
<tr>
<td>Sodium Borate</td>
<td>Not listed</td>
<td>Not listed</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Toxicity to Animals:
Potassium Acid Phthalate: LD50 oral rat 3200 mg/kg
Monopotassium Phosphate: LD50 oral Rat, 3200 mg/kg; LD50 dermal, Rabbit > 4640 mg/kg
Sodium Borate: LD50 oral, rat, 2400 mg/kg; LD50 dermal, rabbit, >2000 mg/kg.

Chronic Effects for all buffers as made:
Mutagenicity, No evidence of a mutagenic effect.
Teratogenicity, No evidence of a teratogenic effect.
Sensitization, No evidence of a sensitization effect.
Reproductive, No evidence of negative reproductive effects.

Section 12, Ecological information

Overview: This material is not expected to be harmful to the ecology.
Mobility: This material is expected to have high mobility in soil. It absorbs weakly to most soil types.
Persistence: Dissolves in water
Bioaccumulation: Bioconcentration is not expected to occur.
Degradability: No data
Other Adverse Effects: No data

Section 13, Disposal considerations

Disposal Methods: Dispose in accordance with all applicable federal, state and local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.
Waste Disposal Code(s): Not determined

Section 14, Transport information

Ground, DOT Proper Shipping Name: Not regulated for transport by US DOT
Air, IATA Proper Shipping Name: Not regulated for air transport by IATA.

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Section 15, Regulatory information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>§ 313 Name</th>
<th>§ 304 RQ</th>
<th>CERCLA RQ</th>
<th>§ 302 TPQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Potassium Acid Phthalate</td>
<td>877-24-7</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Monopotassium Phosphate</td>
<td>7778-77-0</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Disodium Phosphate</td>
<td>7758-75-4</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Sodium Borate</td>
<td>1309-96-4</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Section 16, Other information

The information provided in this Safety Data Sheet represents a compilation of data drawn from various sources available to us. YCA makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the Safety Data Sheet.

Edition Date: 12/18/2015 Replaces: (New)