SAFETY DATA SHEET
Cat# K580-24, Lipid (Oil Red O) Staining Kit

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Lipid (Oil Red O) Staining Kit
PRODUCT CODES: Cat# K580-24
MANUFACTURER: BioVision, Inc.
DIVISION:
ADDRESS: 155 S. Milpitas Boulevard, Milpitas, CA 95035
EMERGENCY PHONE: 858-373-8066
CHEMTREC PHONE: 408-493-1800
OTHER CALLS: 408-493-1801
FAX PHONE: 408-493-1801

SECTION 2: HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Volume</th>
<th>Safety Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBS</td>
<td>Liquid</td>
<td>48 ml</td>
<td>No hazards</td>
</tr>
<tr>
<td>Formalin (10%)</td>
<td>Solution</td>
<td>24 ml</td>
<td>See below</td>
</tr>
<tr>
<td>Oil Red O</td>
<td>Solid</td>
<td>60 mg</td>
<td>No hazards</td>
</tr>
<tr>
<td>Hematoxylin</td>
<td>Solution</td>
<td>24 ml</td>
<td>See below</td>
</tr>
</tbody>
</table>

Formalin:
Emergency Overview
OSHA Hazards: Combustible liquid, Carcinogen, Target organ effect, Toxic by inhalation, Toxic by ingestion, Toxic by skin absorption, Skin sensitizer, Irritant, Corrosive
Target Organs: Eyes, Kidney, Liver, Heart, Central nervous system
GHS Classification:
- Flammable liquids (Category 4)
- Acute toxicity, Oral (Category 3)
- Acute toxicity, Inhalation (Category 3)
- Acute toxicity, Dermal (Category 3)
- Skin irritation (Category 2)
- Serious eye damage (Category 1)
- Skin sensitization (Category 1)
- Carcinogenicity (Category 2)
- Specific target organ toxicity – single exposure (Category 1)

GHS Label elements, including precautionary statements
Pictogram:
- Signal word: Danger
- Hazard statement(s): H227 Combustible liquid. 
  H301+331 Toxic if swallowed or if inhaled.
  H311 Toxic in contact with skin.
  H315 Causes skin irritation.
  H317 May cause an allergic skin reaction.
  H318 Causes serious eye damage.
  H351 Suspected of causing cancer.
  H370 Causes damages to organs.
- Precautionary statement(s): P210 Keep away from heat/sparks/open flames/hot surfaces – no smoking.
  P260 Do not breathe dust/fume/gas/mist/vapours/spray.
  P280 Wear protective gloves/protective clothing/eye protection/face protection.
  P284 Wear respiratory protection.
  P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
  P302+P352 IF ON SKIN: Wash with plenty of soap and water.
  P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P308+P313 IF exposed or concerned: Get medical advice/attention.

HMIS Classification
- Health hazard: 3
- Chronic health hazard: *
- Flammability: 2
- Physical hazards: 0

NFPA Rating
- Health Hazard: 3
- Fire: 2
- Reactivity Hazard: 0

Potential Health Effects
**SAFETY DATA SHEET**  
Cat# K580-24, Lipid (Oil Red O) Staining Kit  
SDS DATE: 15MAY2015

**Inhalation:** Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Causes respiratory tract irritation.

**Skin:** May be fatal if absorbed through skin. Causes skin burns.

**Eyes:** Causes eye burns.

**Ingestion:** Toxic if swallowed.

**Hematoxylin:**

Emergency Overview

OSHA Hazards: Toxic by ingestion, Irritant

GHS Classification:

- Acute toxicity, Oral (Category 2)
- Eye irritation (Category 2A)
- Skin irritation (Category 2)
- Specific target organ toxicity – single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictogram: none

Signal word: none

Hazard statement(s): none

Precautionary statement(s): none

HMIS Classification

- Health hazard: 2
- Flammability: 0
- Physical hazards: 0

NFPA Rating

- Health hazard: 2
- Fire: 0
- Reactivity Hazard: 0

Potential Health Effects

- Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.
- Skin: May be harmful if absorbed through skin. Causes skin irritation.
- Eyes: Causes eye irritation.
- Ingestion: Harmful if swallowed.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>EC-No.</th>
<th>Molecular Weight</th>
<th>Chemical Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formalin</td>
<td>50-00-0</td>
<td>200-001-8</td>
<td>30.03</td>
<td>CH₂O</td>
</tr>
<tr>
<td>Aluminium ammonium bis(sulphate)</td>
<td>7784-26-1</td>
<td>232-055-3</td>
<td>237.15</td>
<td>(NH₄)Al(SO₄)₂</td>
</tr>
<tr>
<td>Hematoxylin</td>
<td>517-28-2</td>
<td>208-237-3</td>
<td>302.27</td>
<td>C₁₆H₁₄O₆</td>
</tr>
</tbody>
</table>

**SECTION 4: FIRST AID MEASURES**

**General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance. Remove from dangerous area.

**If inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact:** Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

**If swallowed:** DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**5: FIRE-FIGHTING MEASURES**

**Condition of flammability:** Not flammable or combustible.

**Suitable extinguishing media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for fire fighters:** Wear self-contained breathing apparatus for firefighting if necessary.

**Hazardous combustion products:** Hazardous decomposition products formed under fire conditions— see section 10.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**Personal precautions:** Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Methods for cleaning up:** Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

**SECTION 7: HANDLING AND STORAGE**

**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition – no smoking. Take measures to prevent the build up of electrostatic charge.

**Conditions for safe storage**
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Recommended storage temperature: room temperature (~23 °C).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Formalin:**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formalin</td>
<td>50-00-0</td>
<td>C</td>
<td>0.3 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

**Remarks:**
- Eye & upper respiratory tract irritation. 
- Suspected human carcinogen. 
- Sensitizer.

- Substance listed: for more information see OSHA document 1910.1048
- Substance listed: for more information see OSHA document 1910.1048
- See 1910.1048

<table>
<thead>
<tr>
<th>TWA</th>
<th>0.016 ppm</th>
<th>USA. NIOSH Recommended Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.1 ppm</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
</tbody>
</table>

**Potential occupational carcinogen.**

**Hematoxylin:**

- Contains no substances with occupational exposure limit values.

**Personal protective equipment**

**Respiratory protection**
- Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**
- Handle with gloves. 
- Gloves must be inspected prior to use. 
- Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. 
- Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. 
- Wash and dry hands.

**Eye protection**
- Tightly fitting safety goggles. 
- Face shield (8-inch minimum). 
- Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**
- Complete suit protecting against chemicals. 
- The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**
- Handle in accordance with good industrial hygiene and safety practice. 
- Wash hands before breaks and at the end of workday.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Formalin</th>
<th>Hematoxylin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance:</td>
<td>Liquid</td>
<td>Liquid</td>
</tr>
<tr>
<td>pH</td>
<td>4.5-6</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility:</td>
<td>Completely miscible</td>
<td>No data available</td>
</tr>
<tr>
<td>Other Solubility:</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point (°C):</td>
<td>100 °C (212 °F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting Point (°C):</td>
<td>No data available</td>
<td>100 °C (212 °F)</td>
</tr>
<tr>
<td>Flash Point (°C):</td>
<td>85 °C (185 °F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Ignition Temperature (°C):</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Density:</td>
<td>1.080 g/cm³</td>
<td>No data available</td>
</tr>
</tbody>
</table>

SECTION 10: STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Formalin</th>
<th>Hematoxylin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability:</td>
<td>Stable under recommended storage conditions</td>
<td></td>
</tr>
<tr>
<td>Conditions to avoid:</td>
<td>Heat, flames, and sparks</td>
<td></td>
</tr>
<tr>
<td>Materials to avoid:</td>
<td>Strong bases, acids, oxidizing agents, alkali metals, strong oxidizing agents, amines, strong acids, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline</td>
<td></td>
</tr>
<tr>
<td>Hazardous decomposition products:</td>
<td>Carbon oxides</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 11: TOXICOCLOGICAL INFORMATION
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Formalin:
Acute toxicity: no data available
Skin corrosion/irritation: no data available
Serious eye damage/eye irritation: no data available
Respiratory or skin sensitization: no data available
Germ cell mutagenicity: no data available
Carcinogenicity:
IARC: 1 – Group 1: Carcinogenic to humans (Formaldehyde)
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: Known to be human carcinogen (Formaldehyde)
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available
Teratogenicity: no data available
Specific target organ toxicity – single exposure (GHS): no data available
Specific target organ toxicity – repeated exposure (GHS): no data available
Aspiration hazard: no data available

Potential Health Effects
Inhalation: Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Causes respiratory tract irritation.
Skin: May be fatal if absorbed through skin. Causes skin burns.
Eyes: Causes eye burns.
Ingestion: Toxic if swallowed.

Signs and Symptoms of Exposure: Exposure may cause nausea, dizziness, gastrointestinal disturbance, weakness, confusion, drowsiness, unconsciousness, and/or convulsions.
Synergistic effects: no data available

Additional information: RTECS: not available

Hematoxylin:
Acute toxicity: no data available
Skin corrosion/irritation: no data available
Serious eye damage/eye irritation: no data available
Respiratory or skin sensitization: no data available
Germ cell mutagenicity: no data available
Carcinogenicity:
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available
Teratogenicity: no data available
Specific target organ toxicity – single exposure (GHS): no data available
Specific target organ toxicity – repeated exposure (GHS): no data available

Potential Health Effects
Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.
Skin: May be harmful if absorbed through skin. Causes skin irritation.
Eyes: Causes eye irritation.
Ingestion: Harmful if swallowed.

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional information: RTECS: not available

SECTION 12: ECOLOGICAL INFORMATION
Persistence and degradability: no data available
Toxicity: no data available
Bioaccumulative potential: no data available
Mobility in soil: no data available
PBT and vPvB assessment: no data available
Other adverse effects: no data available

SECTION 13: DISPOSAL CONSIDERATIONS
Product: Observe all federal, state, and local environmental regulations.
Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION
SAFETY DATA SHEET
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Formalin:
DOT (US): UN-Number: 1993 Class: CBL Packing group: III; Proper shipping name: Combustible liquid, n.o.s. (Formalin); Reportable Quantity (RQ): 2500 lbs.; Marine pollutant: No; Poison Inhalation Hazard: No
IMDG: Not dangerous goods.
IATA: Not dangerous goods.

Hematoxylin:
DOT (US): Not dangerous goods.
IMDG: Not dangerous goods.
IATA: Not dangerous goods.

SECTION 15: REGULATORY INFORMATION

OSHA Hazards: Formalin: Combustible liquid, Carcinogen, Target organ effect, Toxic by inhalation, Toxic by ingestion, Toxic by skin absorption, Skin sensitizer, Irritant, Corrosive
Hematoxylin: Toxic by ingestion, Irritant

SARA 302 Components: The following components are subject to reporting levels established by SARA Title III, Section 302:
Formaldehyde, CAS-No. 50-00-0; Revision Date: 2007-07-01

SARA 313 Components: The following components are subject to reporting levels established by SARA Title III, Section 313:
Formaldehyde, CAS-No. 50-00-0; Revision Date: 2007-07-01

SARA 311/312 Hazards: Hematoxylin: Acute Health Hazard
Formalin: Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components: Formaldehyde, CAS-No. 50-00-0; Revision Date: 2007-07-01
Pennsylvania Right To Know Components: Formaldehyde, CAS-No. 50-00-0; Revision Date: 2007-07-01

New Jersey Right To Know Components: Formaldehyde, CAS-No. 50-00-0; Revision Date: 2007-07-01
Hematoxylin, CAS-No. 517-28-2

Aluminium ammonium bis(sulphate): CAS-No. 7784-26-1 Revision Date

California Prop. 65 Components: WARNING! This product contains a chemical known to the State of California to cause cancer.
Formaldehyde, CAS-No. 50-00-0; Revision Date: 2007-09-28

<table>
<thead>
<tr>
<th>EU regulations</th>
<th>Risk Phrases</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formalin</td>
<td>R23/24/25, R40, R43</td>
<td>S36/37</td>
</tr>
<tr>
<td>Hematoxylin</td>
<td>R25, R36/37/38</td>
<td>S24/25</td>
</tr>
</tbody>
</table>

SECTION 16: OTHER INFORMATION

DISCLAIMER:
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. BioVision, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.