SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ApoGSH™ Glutathione Colorimetric Detection Kit

PRODUCT CODES: Cat# K261-100

MANUFACTURER: BioVision, Inc.
DIVISION: 
ADDRESS: 155 S. Milpitas Blvd. Milpitas, CA 95035

EMERGENCY PHONE: 858-373-8066
CHEMTREC PHONE: 
OTHER CALLS: 408-493-1800
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>Glutathione Reaction Buffer</td>
<td>Liquid</td>
<td>100 ml</td>
<td>No hazards</td>
</tr>
<tr>
<td>Glutathione Substrate (DTNB)</td>
<td>Contains DTNB</td>
<td>2 vials</td>
<td>See below</td>
</tr>
<tr>
<td>NADPH Generating Mix</td>
<td>--</td>
<td>2 vials</td>
<td>No hazard</td>
</tr>
<tr>
<td>Glutathione Reductase</td>
<td>--</td>
<td>2 vials</td>
<td>No hazard</td>
</tr>
<tr>
<td>Sulfosalicylic Acid (SSA, 1 gram)</td>
<td>Sulfosalicylic Acid</td>
<td>1 bottle</td>
<td>See below</td>
</tr>
<tr>
<td>GSH Standard (MW: 307)</td>
<td>--</td>
<td>2 x 1 mg</td>
<td>No hazards</td>
</tr>
</tbody>
</table>

DTNB:
Emergency Overview
OSHA Hazards: Irritant
GHS Classification:
Skin irritation (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity – single exposure (Category 3)

GHS Label elements, including precautionary statements
Pictogram:

Signal word: Warning
Hazard statement(s):
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
Precautionary statement(s):
P261 Avoid breathing dust/fumes/gas/mist/vapors/spray.
P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
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.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.

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: May be harmful if swallowed.

SulfoSalicylic Acid:
SAFETY DATA SHEET
Cat# K261-100, ApoGSH™ Glutathione Colorimetric Detection Kit

Emergency Overview
OSHA Hazards: Irritant
GHS Classification: Skin corrosion/ irritation (Category 1B)
Serious Eye Damage/ Eye Irritation (Category 1)

GHS Label elements, including precautionary statements
Pictogram:

Signal word: danger
Hazard statement(s): Harmful if swallowed
Causes severe skin burns and eye damage
Precautionary statement(s): Wear protective gloves/ protective clothing/ eye protection/ face protection
Do not breathe dust/ fume/ gas/ mist/ vapors/ spray
Wash face, hands and any exposed skin thoroughly after handling
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice/ attention.

HMIS Classification
Health hazard: 3
Flammability: 0
Physical hazards: 0

NFPA Rating
Health Hazard: 3
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: May be 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>5,5'-Dithiobis(2-nitrobenzoic acid) [DTNB]</td>
<td>69-78-3</td>
<td>200-714-4</td>
<td>396.35</td>
<td>C14H8N2O8S2</td>
</tr>
<tr>
<td>Sulfosalicylic Acid (SSA)</td>
<td>5965-83-3</td>
<td>202-555-6</td>
<td>254.21</td>
<td>C7H6O6S ∙ 2H2O</td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of 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. Consult a physician.
In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

SECTION 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 combustion products formed under fire conditions — no data available.

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. 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.

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.
SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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 a full-face supplied air respirator. 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>DTNB</th>
<th>SSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance:</td>
<td>Light yellow powder</td>
<td>Crystalline solid</td>
</tr>
<tr>
<td>pH:</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility:</td>
<td>No data available</td>
<td>Soluble</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>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting Point (°C):</td>
<td>240-250 °C (464-473 °F)</td>
<td>105-110 °C (221-230 °F)</td>
</tr>
<tr>
<td>Flash Point (°C):</td>
<td>No data available</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>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

SECTION 10: STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>DTNB</th>
<th>SSA</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>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Materials to avoid:</td>
<td>Strong oxidizing agents, strong bases</td>
<td>Strong oxidizing agents, strong bases</td>
</tr>
<tr>
<td>Hazardous decomposition products:</td>
<td>Carbon oxides, nitrogen oxides, sulfur oxides</td>
<td>Carbon oxides, sulfur oxides</td>
</tr>
</tbody>
</table>

SECTION 11: TOXICOLOGICAL INFORMATION

DTNB:
Acute toxicity: LD50 Intraperitoneal – mouse – 2,080 mg/kg
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: May be 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: DG9650000

SSA:
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): Inhalation – may cause respiratory irritation.
Specific target organ toxicity – repeated exposure (GHS): no data available
Aspiration hazard: 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: May be 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

Toxicity: Do not empty into drains. Do not flush into surface water or sanitary sewer system.
Persistence and degradability: no data available
Bioaccumulative potential: no data available
Mobility in soil: no data available
Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
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

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

SSA:
DOT: UN-No UN3265 Hazard Class 8 Packing Group II

Proper Shipping Name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Packing Group II

SECTION 15: REGULATORY INFORMATION

SARA 302 Components: SARA 302: No chemical in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title II, Section 313.
SARA 311/312 Hazards: DTNB, & SSA: Acute Health Hazard
Massachusetts Right To Know Components: No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right To Know Components: DTNB, CAS-No. 69-78-3
EU regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Risk Phrases</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTNB</td>
<td>R36/37/38</td>
<td>S22, S24/25, S36/37/39, S45</td>
</tr>
<tr>
<td>SSA</td>
<td>R36/37/38</td>
<td>S26, S36/37/39, S45</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.