1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Component Name: Dako Hematoxylin

Applicable Product(s): AR480 // Artisan™ Jones’ Basement Membrane H&E Stain Kit

Company Identification: Dako North America, Inc., 6392 Via Real, Carpinteria, California, 93013, United States. Tel. +805/566-6655, FAX +805/566-6688

24-Hour Emergency Contact: CHEMTREC +800/424-9300 (U.S.A. and Canada only) +703/527-3887 (all other countries)

2. COMPOSITION/INFORMATION ON INGREDIENTS

% / Chemical Name: CAS# / EINECS#: Hazard Classification:
* / Acetic acid 64-19-7 / 200-580-7 C: R10-35
* / Aluminum sulfate 7784-31-8 / 233-135-0 Xi: R41
* / Propylene glycol 57-55-6 / NA None identified
* / Hematoxylin, Certified 517-28-2 / 208-237-3 Xi: R36/37/38
* / Sodium iodate 7681-55-2 / 231-672-5 T: R8-22-42/43-61
>1 / Water 7732-18-5 / 231-791-2 None Identified

(*Dako Hematoxylin is a proprietary product of American Master*Tech Scientific, INC. (Phone: (209) 368-4031))

NOTE: The Hazard Classification listed in this section refers to the chemical at a pure concentration. It has been determined that the remaining ingredient(s) of this component/product are NOT CLASSIFIED AS HAZARDOUS CHEMICALS due to their physical and/or chemical nature and/or concentration in solution, in accordance with California and Federal OSHA regulations (Federal Register 29CFR 1910.1200), and The Chemicals (Hazard Information and Packaging for Supply) Regulations (European Community).

3. HAZARDS IDENTIFICATION

Physical and Chemical Hazards: None identified.

Skin Contact: May cause irritation, with drying, itching and redness.

Eye Contact: May irritate eyes, with redness, stinging, excessive tearing, and discomfort.

Inhalation: Not an expected route of exposure.

Ingestion: May cause gastrointestinal discomfort.

Environment: None identified.

4. NATIONAL FIRE PROTECTION AGENCY (NFPA) RATING

Fire Hazard / Flash Points: Non-Flammable

Health Hazard: Slightly Hazardous

Reactivity: Normally Stable

Specific Hazard: None identified
### 5. EMERGENCY FIRST-AID MEASURES

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin:</td>
<td>Remove victim to nearest source of water. Remove contaminated clothing, blot excess chemical from skin and wash affected area under lukewarm water using a mild soap. Rinse for at least 20 minutes and blot dry. Seek immediate medical attention.</td>
</tr>
<tr>
<td>Eye:</td>
<td>Remove victim to nearest source of water, blot excess chemical from face and gently rinse affected eye(s) with clean, lukewarm water for at least 20 minutes. In order to cleanse as much of the eye as possible, be sure to wash under eyelids. If worn, have victim remove contacts. Seek medical attention. If eyes are painful or sensitive to light, protect with a clean, loosely tied handkerchief or towel. Maintain physical and verbal contact with victim.</td>
</tr>
<tr>
<td>Inhalation:</td>
<td>Remove victim to well-ventilated area. If victim is coughing or short of breath, loosen tight fitting clothing, have victim lie down and keep warm and calm. Oxygen may be given. Seek medical attention. If simply overwhelmed, loosen tight clothing, lie victim down, monitor pulse and keep warm and calm.</td>
</tr>
<tr>
<td>Ingestion:</td>
<td>Remove victim to well-ventilated area. Seek immediate medical attention. If face is blue or breathing is labored, lay victim on back, open and clear airway and give oxygen. Keep victim warm and calm. If unconscious, lay victim on side, loosen tight clothing, give oxygen and monitor vital signs. If conscious, give water and have victim rinse mouth. If vomiting, have victim sitting up and leaning forward.</td>
</tr>
</tbody>
</table>

### 6. FIRE-FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point / Explosion Information:</td>
<td>N/A (Non-flammable) / LEL: N/A UEL: N/A</td>
</tr>
<tr>
<td>Precautions During Fire:</td>
<td>Avoid inhalation of toxic fumes. If possible, safely move container away from fire area.</td>
</tr>
<tr>
<td>Suitable Extinguishing Media:</td>
<td>Dry chemical, Carbon dioxide, alcohol-resistant foam or water.</td>
</tr>
<tr>
<td>Special Exposure Hazards:</td>
<td>Combustion or decomposition of material may produce hazardous and/or irritating fumes. Hazardous polymerization will not occur.</td>
</tr>
<tr>
<td>Special Protective Equipment for Firefighters:</td>
<td>Wear self-contained breathing apparatus and protective clothing to prevent contact with eyes and skin.</td>
</tr>
</tbody>
</table>

### 7. ACCIDENTAL RELEASE MEASURES

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Precautions:</td>
<td>Personal protective equipment and clothing is recommended during all cleanup procedures. Eliminate all ignition sources, stop or control leak. Refer to Section 8 for additional information on exposure controls and personal protective equipment.</td>
</tr>
<tr>
<td>Environmental Precautions:</td>
<td>Do not allow into any body of water.</td>
</tr>
<tr>
<td>Methods for Cleanup:</td>
<td>Avoid physical contact during removal. An approved respirator is recommended when irritant or nuisance vapors are produced. Absorb on earth, sand or vermiculite, and place in a closed container and hold for waste disposal. Absorbent pads or paper towels may be used for small spills of less than 1 liter. Ventilate area and wash spill site after material pickup is complete. Refer to Section 13 for complete disposal information.</td>
</tr>
</tbody>
</table>

### 8. HANDLING AND STORAGE

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep containers tightly closed. Store in a dry and well-ventilated location at room temperature in a location protected from light. Keep out of reach of children.</td>
<td></td>
</tr>
</tbody>
</table>
### 9. EXPOSURE CONTROLS / PERSONAL PROTECTION

| Permissible Exposure Limit (OSHA TWA/TLV/STEL): | Acetic acid: 10 ppm (25 mg/m\(^3\)) (TWA)  
| | 15 ppm (37 mg/m\(^3\)) (STEL)  
| | Aluminum sulfate: 2 mg/m\(^3\) (TWA)  
| | Propylene glycol: None identified.  
| | Hematoxylin, Certified: None identified.  
| | Sodium iodate: None identified.  

**Precautionary Measures During Use:** Avoid physical contact and prolonged or repeated exposures. A chemical fume hood is highly recommended. Do not breathe vapors if produced. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Mechanical exhaust is required.

**Inhalation:** Respiratory protection is highly recommended if irritating vapors are produced during routine usage of this product. Though it is not likely, if TWA or other exposure limits are exceeded during the usage of this material, attempt to reduce exposure levels to within an acceptable range. If this is not possible, use a NIOSH/MSHA-Approved respirator. Follow NIOSH/MSHA and equipment manufacturer’s recommendations to determine appropriate equipment choice. Chemicals without established limits must also be considered when determining respiratory protection protocols.

**Skin:** Use chemically resistant gloves (e.g. nitrile), lab coat with sleeves or rubber apron. Be aware that over time, the liquid may penetrate the gloves. Frequent change is advisable. Some glove types may not be compatible for use with this component. Other types of gloves can be recommended by the glove supplier.

**Eye:** Splash-proof chemical safety goggles or face shield.

**Other:** Eye wash or safety shower.

**Environmental Exposure Controls:** Not available.

### 10. PHYSICAL AND CHEMICAL PROPERTIES

| Appearance: Dark purple opaque liquid | Autoflammability: N/A |
| Odor: Mild | Oxidizing Properties: N/A |
| pH (as supplied): N/A | Vapor Pressure (kPa): N/A |
| Boiling Point/Boiling Range: N/A | Relative Density (gm/mL @ 20ºC): N/A |
| Melting Point/Melting Range: N/A | Water Solubility: Soluble |
| Flammability (liquid): NON-FLAMMABLE | Alcohol or Glycerol Solubility: N/A |
| % Volatiles by Volume: N/A | Evaporation Rate: <1 |

### 11. STABILITY AND REACTIVITY

**Stability:** Stable when used appropriately.

**Conditions to Avoid:** Exposure to light.

**Materials to Avoid:** Bases, oxidizers.

**Hazardous Decomposition Products:** Carbon monoxide, Carbon dioxide.
12. TOXICOLOGICAL INFORMATION (dangerous-to-health effects)

<table>
<thead>
<tr>
<th>Substance</th>
<th>Animal</th>
<th>LC₅₀/LD₅₀</th>
<th>Target Organ(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>Orl-rat</td>
<td>3310 mg/kg</td>
<td>Teeth, Kidneys</td>
</tr>
<tr>
<td></td>
<td>Skn-rbt</td>
<td>1060 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ivn-mus</td>
<td>526 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ihl-mus</td>
<td>5620 ppm</td>
<td></td>
</tr>
<tr>
<td>Aluminum sulfate</td>
<td>Orl-rat</td>
<td>2750 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Propylene glycol</td>
<td>No information available</td>
<td>Normal routes of occupational exposure.</td>
<td></td>
</tr>
<tr>
<td>Hematoxylin, Certified</td>
<td>Suspected Carcinogen</td>
<td>No information available</td>
<td>Blood.</td>
</tr>
<tr>
<td>Sodium iodate</td>
<td>Orl-mus</td>
<td>505 gm/kg</td>
<td>Thyroid, Blood, Bone Marrow</td>
</tr>
<tr>
<td></td>
<td>Ipr-mus</td>
<td>119 gm/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ivn-mus</td>
<td>108 gm/kg</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated at product concentrations.

13. ECOLOGICAL INFORMATION

- Mobility: No information available.
- Degradability: No information available.
- Accumulation: No information available.
- Ecotoxicity: No information available.
- Degradability: No information available.
- Other Hazardous Effects: No information available.

14. DISPOSAL CONSIDERATIONS

Waste Management Information (Disposal): When disposing of the unused contents, the preferred options are to send to a licensed reclaimer, or permitted incinerators. Any disposal practice must be in compliance with local, State, and Federal laws and regulations. Check with local and State regulations before discharging into sewers or public landfills. Do not dump into any body of water.

15. TRANSPORT INFORMATION

IATA Classification: NOT RESTRICTED. When shipped alone or with other non-hazardous materials, the text “NOT RESTRICTED” must be included in the description on the Air Waybill to indicate that this mixture is not subject to IATA regulations, and has been checked. (4.1.3.3 / IATA Dangerous Goods Regulations).

- Proper Shipping Name: N/A
- Hazard Class#: N/A
- Packing Group# / PI#: N/A
- ADR/RID: N/A
- UN#: N/A

16. REGULATORY INFORMATION / LABELING

Contains: Chemical identification not required on label.

R-and S-phrases: 

- R-phrases: “Safety Data Sheet available for professional user on request.”

Labeling Note: In accordance with EEC Directives 67/548/EEC and 88/379/EEC, this component/product is not subject to a hazard classification, but the labeling shown above must be applied.

Hazard symbol(s): NOT REQUIRED
16. REGULATORY INFORMATION / LABELING (con’t)

Restrictions on Use: The product is for laboratory use only. The product must not be handled by persons under 18 years of age.

Training Provisions: The product should be handled only by technically qualified individuals experienced in handling potentially hazardous chemicals. The content of this Material Safety Data Sheet should also be known before use.

OSHA Status: In accordance with the OSHA Hazard Communication Standard, at product concentrations, the chemical components listed on this Material Safety Data Sheet are classified as hazardous.

Toxic Substances Control Act (TSCA): This product complies with all TSCA inventory requirements.

California Proposition 65: The following statement is made in order to comply with the California State Drinking Water and Toxic Enforcement Act of 1986. This product does NOT contain chemicals on California’s listing of known or suspected carcinogens.


17. OTHER INFORMATION

Wording of Risk Phrases:
R8 Contact with combustible material may cause fire.
R10 Flammable.
R22 Harmful if swallowed.
R35 Causes severe burns.
R36/37/38 Irritating to eyes, respiratory system and skin.
R41 Risk of serious damage to eyes.
R42 May cause sensitization by inhalation.
R43 May cause sensitization by skin contact.
R61 May cause harm to the unborn child.

User Note: The information in this Material Safety Data Sheet was obtained from sources which we believe are reliable. However, the information is provided without any representation or warranty, express or implied, regarding its accuracy or correctness. Although certain hazards are described herein, we cannot state that these are the only hazards which exist. Final determination of suitability and safe usage of this product is the sole responsibility of the user who is obligated to review this data in the specific context of the intended use and determine applicability.

Use of Abbreviations: The terms “Not Available” and “Not Relevant” shall be designated by the text “N/A” for “Not Available” and “N/R” for “Not Relevant”.

Trade Secret Provision and Chemical Concentration Disclosure: In accordance with OSHA and European Union regulations (20 CFR 1910.1200i and 1999/45/EC), specific chemical identities may be withheld provided all required provisions of the regulation are met. Chemical concentrations may be disclosed as either a specific value or range, provided the range given is applicable to the hazards as identified by the MSDS.


Revision date: January 30, 2012
First version. This MSDS has been specifically updated to reflect current product formulations and hazard information. All MSDS’s generated before the revision date should be discarded.