Urine Sediment Stain
Concentrated Stain for Urinary Sediment
For In Vitro Diagnostic Use Only

The microscopic examination of urine sediment is generally recognized to be a valuable diagnostic technique. The selective formula originally developed by Sternheimer and Malbin (S-M), stains blood cells, casts and other formed elements in urinary sediment in a distinctive fashion which permits rapid and accurate identification. Lide Laboratories’ HANSEL® Stain has, for many years, been the stain of choice for the diagnostic evaluation of urine eosinophils. Lide Laboratories’ Urine Sediment Stain combines the dyes used in the S-M stain and the same solvent and glycerin/water base used in HANSEL Stain. The buffered solvent and base combine to produce an effective vehicle that can carry the stains evenly at a low pH. The formation is considered to be a true solution, precipitates are not expected and filtration is therefore not required.

Directions for Use
1. Collect a freshly voided urine sample in a clean, sealed container. Specimens that cannot be examined immediately should be refrigerated, but not frozen.
2. Mix sample and pour in a centrifuge tube.
3. Centrifuge for 5 minutes at 1500 RPM.
4. Decant the supernatant without disturbing the sediment.
5. Add 2 drops of Urine Sediment Stain to the sediment in the tube.
6. Mix the stain and sediment (flick the bottom of the tube with a finger several times).
7. Transfer 1 drop of the stained sediment onto a microscope slide. A cover slip may be used.
8. Examine microscopically using low power for casts and various crystals and high power for RBCs and WBCs.

Report elements per field as per standard practices. See also Expected Values

Limits of the Test
Microscopic examination of urinary sediment is a semi-quantitative procedure.

User Quality Control
Quality control procedures as per accredited and applicable local, state and/or federal laboratory standards must be followed. See pertinent NCCLS or CLIA guidelines for appropriate QC practices.

Contains:
Buffered Methanol, Glycerin and Water, Crystal Violet (0.1%), Ammonium Oxalate (0.03%), Safranin O (0.25%)

Expected Values
The chemical and physical properties of various urinary sediments cause the stain to be taken up in varying proportions. Cellular elements including nuclei and cytoplasm also exhibit characteristic staining patterns allowing for differential identification. The chart below summarizes the differential staining characteristics of both Crystal Violet and Safranin O which are generally consistent and well documented for urine sediment.

<table>
<thead>
<tr>
<th>Common Element</th>
<th>Usual Distinguishing Color of Stained Element</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Blood Cells</td>
<td>Pink to purple</td>
<td></td>
</tr>
<tr>
<td>White Blood Cells</td>
<td>Nuclei – Purple</td>
<td>Cytoplasm – Purple Granules</td>
</tr>
<tr>
<td>S-M Positive Cells</td>
<td>Nuclei – Colorless to light blue</td>
<td>Cytoplasm – Pale blue to grey</td>
</tr>
<tr>
<td>Renal Tubular Epithelial Cells</td>
<td>Nuclei - Dark blue-purple</td>
<td>Cytoplasm – Light blue to purple</td>
</tr>
<tr>
<td>Bladder Tubular Epithelial Cells</td>
<td>Nuclei – Blue-purple</td>
<td>Cytoplasm – light purple</td>
</tr>
<tr>
<td>Squamous Epithelial Cells</td>
<td>Dark shade of orange-purple</td>
<td>Light purple or blue</td>
</tr>
<tr>
<td>Hyaline Casts</td>
<td>Pale pink or pale purple</td>
<td>Very uniform color</td>
</tr>
<tr>
<td>Coarse Granular Inclusion Casts</td>
<td>Fine dark purple granules in purple matrix</td>
<td></td>
</tr>
<tr>
<td>Fine Granular Inclusion Casts</td>
<td>Fine dark purple granules in pale pink/purple matrix</td>
<td></td>
</tr>
<tr>
<td>Waxy Casts</td>
<td>Pale pink or pale purple even in color</td>
<td>Darker than hyaline casts. Broken ends</td>
</tr>
<tr>
<td>Fat Inclusion Casts</td>
<td>Fat globules unstained in a pink matrix</td>
<td>Rare. Confirm with polarized light</td>
</tr>
<tr>
<td>Red Inclusion Casts</td>
<td>Pink to orange-red</td>
<td>Intact cells can be seen in matrix</td>
</tr>
<tr>
<td>Blood (Hemoglobin) Casts</td>
<td>Orange-red</td>
<td>No intact cells</td>
</tr>
<tr>
<td>Trichomonas</td>
<td>Light blue-green</td>
<td></td>
</tr>
<tr>
<td>Mucous</td>
<td>Pale pink or pale blue</td>
<td></td>
</tr>
<tr>
<td>Background</td>
<td>Pale pink to pale purple</td>
<td></td>
</tr>
</tbody>
</table>

CAUTIONS: FLAMMABLE liquid and vapor. Store at room temperature.
Avoid excessive heat and flames.
POISON: No not ingest. Avoid contact with skin.

Manufactured by: Lide Laboratories Inc. 401 4th AV SW New Prague, MN 56071
Telephone: 952-758-9760 www.lidelabs.com

HANSEL is a Federal registered trademark.
Material Safety Data Sheet

IDENTITY (As Used on Label and List)
Urine Sediment Stain

Section I - Identification
Manufacturer's Name: Lide Laboratories Inc.
Address (Number, Street, City, State, and ZIP Code): 401 4th AVE SW New Prague, MN 56071
Emergency Telephone Number: 952-758-9760 or contact a local medical facility
Date Prepared: 04/18/2012
Signature of Prepared (optional)

Section II - Hazardous Ingredients/Identity Information

Product: 95% Methanol (Synonyms: Carbinol, Methyl alcohol; Methyl hydroxide, Monohydromethane; Wood alcohol; Wood naptha; Wood spirits; Columbian spirits)
CAS RN: 67-56-1 PEL/TLV/TWA: 200 ppm
Other Ingredients 5%: Glycerin (Glycerol) CAS 56829, Safranim O (Basic Red 2) CAS 477736, Ammonium Oxalate CAS 1113388,
Glycerin (Glycerol) CAS 5681-5, Purified Water

Section III - Physical/Chemical Characteristics
Appearance and Odor: Blue in color as Urine Sediment Stain with slight alcoholic odor.

Section IV - Fire and Explosion Hazard Data
Flash Point (Method Used): 12.7 °C Flammable Limits LEL 6.7 UEL 35
Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Water may be ineffective. For large fires, use water spray, fog or alcohol-resistant foam. Do NOT use straight streams of water.
Special Fire Fighting Procedures: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire- extinguishing agents from contacting the material being burned. Flashback may occur. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of the water. Extinguish all nearby sources of ignition. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. Unusual Fire and Explosion Hazards: Methanol may burn with a flame that is invisible in the daylight. Mixtures of water and as little as 21% methanol are flammable. This includes this product.

Section V - Reactivity Data
Chemical Stability: Stable under normal temperatures and pressures.

Section VI - Health Hazard Data
Health Hazards (Acute and Chronic)
Danger! Flammable liquid and vapor.
Poison! Methanol may be fatal or cause blindness if swallowed. Vapor harmful. Harmful if swallowed, inhaled, or absorbed through the skin. Causes eye, skin, and respiratory tract irritation. May cause central nervous system depression. Cannot be made non-poisonous.
Emergency and First Aid Procedures
Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
Get immediate medical attention. Stain will stain eyes.
Ingestion: Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Skin: In case of contact, immediately wash skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Urine Sediment Stain will stain skin. Get medical attention if irritation persists after washing.
Notes to Physician: Effects may be delayed. Chronic potential health effects as methanol exist.
Additional toxicological, ecological and regulatory information pertaining to methanol is available upon request.
Antidote: Ethanol may inhibit methanol metabolism.

Steps to Be Taken in Case Material is Released or Spilled: Use proper personal protective equipment as indicated in Section VIII. Avoid direct contact with the product. Product will stain the skin. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor by dilution. Special Fire Fighting Procedures: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-extinguishing agents from contacting the material being burned. Flashback may occur. Do NOT use straight streams of water.

Transport Information: US DOT Shipping Name - Methanol Solution Hazard Class 3 UN1230 Packing Group II 30 mL shipped as “Small Quantity”
CHEMICAL STORAGE CODES: Storage Color Code RED (Flammable) HEALTH 3 FLAMMABILITY 3 REACTIVITY 1 PERSONAL PROTECTION 1

Section VII - Control Measures
Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. A fume hood and Class B extinguisher are recommended.
OSHA Vacated PELs: Methanol: 200 ppm TWA: 280 mg/m³ TWA
Personal Protective Equipment Uses: Wear chemical splash goggles. A face shield may be necessary. Skin: Wear butyl rubber gloves, apron, and/or clothing.
Clothing: Wear appropriate protective clothing to prevent skin exposure. Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Reproduced locally (04/2012) OSHA 174, Sept. 1985