**Material Safety Data Sheet**

**Section 1. Chemical Product and Company Identification**

<table>
<thead>
<tr>
<th>NFPA</th>
<th>HMIS</th>
<th>Personal Protective Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Common Name/ Trade Name</th>
<th>P.A.N. Indicator 0.1% in Methanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>SPECTRUM LABORATORY PRODUCTS INC.</td>
</tr>
<tr>
<td></td>
<td>14422 S. SAN PEDRO STREET</td>
</tr>
<tr>
<td></td>
<td>GARDENA, CA 90248</td>
</tr>
<tr>
<td>Commercial Name(s)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Synonym</td>
<td>PAN Indicator 1% (w/v) Solution in Methanol</td>
</tr>
<tr>
<td>Chemical Name</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Chemical Family</td>
<td>Alcohol. (Solvent.)</td>
</tr>
<tr>
<td>Chemical Formula</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Catalog Number(s)</td>
<td>P-358</td>
</tr>
<tr>
<td>CAS#</td>
<td>Mixture.</td>
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<tr>
<td>RTECS</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>TSCA</td>
<td>TSCA 8(b) inventory: P.A.N; Methyl alcohol</td>
</tr>
<tr>
<td>CI#</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

**Section 2. Composition and Information on Ingredients**

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
<th>CEIL (mg/m³)</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) P.A.N</td>
<td>85-85-8</td>
<td>10</td>
<td></td>
<td></td>
<td>0.1</td>
</tr>
<tr>
<td>2) Methyl alcohol</td>
<td>67-56-1</td>
<td>200</td>
<td>250</td>
<td></td>
<td>99.9</td>
</tr>
</tbody>
</table>

**Toxicological Data on Ingredients**

- **Methyl alcohol:**
  - **ORAL (LD50):** Acute: 5628 mg/kg [Rat.].
  - **DERMAL (LD50):** Acute: 15800 mg/kg [Rabbit].
  - **VAPOR (LC50):** Acute: 64000 ppm 4 hours [Rat.].

**Section 3. Hazards Identification**

**Potential Acute Health Effects**

Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator). Severe over-exposure can result in death.

*Continued on Next Page*
**Section 4. First Aid Measures**

**Eye Contact**
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention.

**Skin Contact**
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Serious Skin Contact**
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation**
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Serious Inhalation**
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

**Ingestion**
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

**Serious Ingestion**
Notes to Physician:
This product contains Methanol.
1. Support vital functions, correct for dehydration and shock, and manage fluid balance.
2. The currently recommended medical management of Methanol poisoning includes the following methods:
   a. Emptying the stomach by gastric lavage. It is useful if initiated within < 1 of ingestion.
   b. Correct metabolic acidosis with intravenous administration of sodium bicarbonate, adjusting the administration rate according to repeated and frequent measurement of acid/base status.
   c. Administer ethanol (orally or by IV (intravenously)) or Fomepizole (4-methylpyrazole or Antizol) therapy by IV as an antidote to inhibit the formation of toxic metabolites. Adjunct therapy with Leucorvin followed by Folate can also be initialized. Please note that if Ethanol therapy is used, monitor blood glucose, especially in children. Ethanol can cause hypoglycemia.
   d. If patients are diagnosed and treated early in the course with the above methods, hemodialysis may be avoided if fomepizole or ethanol therapy is effective and has corrected the metabolic acidosis, and no renal failure is present. However, once severe acidosis and renal failure occurred, however, hemodialysis is necessary. Hemodialysis is effective in removing Methyl alcohol and toxic metabolites, and correcting metabolic acidosis.

**Section 5. Fire and Explosion Data**

**Flammability of the Product**
Flammable.

**Auto-Ignition Temperature**
The lowest known value is 464°C (867.2°F) (Methyl alcohol).

**Flash Points**
The lowest known value is CLOSED CUP: 12°C (53.6°F). OPEN CUP: 16°C (60.8°F). (Methyl alcohol)

**Flammable Limits**
The greatest known range is LOWER: 6% UPPER: 36.5% (Methyl alcohol)

**Products of Combustion**
These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...).

**Fire Hazards in Presence of Various Substances**
Highly flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.
P.A.N. Indicator 0.1% in Methanol

**Explosion Hazards in Presence of Various Substances**

- Risks of explosion of the product in presence of mechanical impact: Not available.
- Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions**

- Flammable liquid, soluble or dispersed in water.
- SMALL FIRE: Use DRY chemical powder.
- LARGE FIRE: Use alcohol foam, water spray or fog.

**Special Remarks on Fire Hazards**

- Explosive in the form of vapor when exposed to heat or flame. Vapor may travel considerable distance to source of ignition and flash back. When heated to decomposition, it emits acrid smoke and irritating fumes. **CAUTION:** MAY BURN WITH NEAR INVISIBLE FLAME (Methyl alcohol)

**Special Remarks on Explosion Hazards**

- Forms an explosive mixture with air due to its low flash point.
- Explosive when mixed with Choroform + sodium methoxide and diethyl zinc. It boils violently and explodes. (Methyl alcohol)

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**Section 6. Accidental Release Measures**

**Small Spill**

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

**Large Spill**

- Flammable liquid. Poisonous liquid.
- Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

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**Section 7. Handling and Storage**

**Precautions**

- Keep locked up. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals, acids.

**Storage**

- Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

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**Section 8. Exposure Controls/Personal Protection**

**Engineering Controls**

- Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Personal Protection**

- Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Gloves.

**Personal Protection in Case of a Large Spill**

- Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits**

- **P.A.N**
  - TWA: 15 (mg/m³) from OSHA (PEL) [United States] Inhalation Total.
  - TWA: 10 (mg/m³) from ACGIH (TLV) [United States] Inhalation Total.

- **Methyl alcohol**
  - TWA: 200 from OSHA (PEL) [United States]
  - TWA: 200 STEL: 250 (ppm) from ACGIH (TLV) [United States] [1999]
  - STEL: 250 from NIOSH [United States]
  - TWA: 200 STEL: 250 (ppm) from NIOSH SKIN
  - TWA: 200 STEL: 250 (ppm) [Canada]

Consult local authorities for acceptable exposure limits.

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Continued on Next Page
## Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state and appearance</td>
<td>Liquid.</td>
</tr>
<tr>
<td>Odor</td>
<td>Alcohol like. Pungent.</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Taste</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH (1% soln/water)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Color</td>
<td>Clear. Orange.</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>The lowest known value is 64.5°C (148.1°F) (Methyl alcohol).</td>
</tr>
<tr>
<td>Melting Point</td>
<td>May start to solidify at -97.8°C (-144°F) based on data for: Methyl alcohol</td>
</tr>
<tr>
<td>Critical Temperature</td>
<td>The lowest known value is 240°C (464°F) (Methyl alcohol).</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>The only known value is 0.7915 (Water = 1) (Methyl alcohol).</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>The highest known value is 12.3 kPa (@ 20°C) (Methyl alcohol).</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>The highest known value is 1.11 (Air = 1) (Methyl alcohol).</td>
</tr>
<tr>
<td>Volatility</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>The highest known value is 100 ppm (Methyl alcohol)</td>
</tr>
<tr>
<td>Water/Oil Dist. Coeff.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Ionicity (in Water)</td>
<td>Non-Ionic.</td>
</tr>
<tr>
<td>Dispersion Properties</td>
<td>See solubility in water.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Easily soluble in cold water, hot water.</td>
</tr>
</tbody>
</table>

## Section 10. Stability and Reactivity Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>Instability Temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Conditions of Instability</td>
<td>Heat, ignition sources (flames, sparks, static), incompatible materials</td>
</tr>
<tr>
<td>Incompatibility with various substances</td>
<td>Reactive with oxidizing agents, metals, acids.</td>
</tr>
<tr>
<td>Corrosivity</td>
<td>Non-corrosive in presence of glass.</td>
</tr>
<tr>
<td>Special Remarks on Reactivity</td>
<td>Can react vigorously with oxidizers. Violent reaction with alkyl aluminum salts, acetyl bromide, chloroform + sodium methoxide, chromic anhydride, cyanuric chloride, lead perchlorate, phosphorous trioxide, nitric acid. Exothermic reaction with sodium hydroxide + chloroform. Incompatible with beryllium dihydride, metals (potassium and magnesium), oxidants (barium perchlorate, bromine, sodium hypochlorite, chlorine, hydrogen peroxide), potassium tert-butoxide, carbon tetrachloride, alkali metals, metals (aluminum, potassium magnesium, zinc), and dichloromethane. Rapid autocatalytic dissolution of aluminum, magnesium or zinc in 9:1 methanol + carbon tetrachloride - sufficiently vigorous to be rated as potentially hazardous. May attack some plastics, rubber, and coatings. (Methyl alcohol)</td>
</tr>
<tr>
<td>Special Remarks on Corrosivity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Polymerization</td>
<td>Will not occur.</td>
</tr>
</tbody>
</table>

Continued on Next Page
## Section 11. Toxicological Information

### Routes of Entry
- Absorbed through skin. Eye contact. Inhalation. Ingestion.

### Toxicity to Animals
- Acute oral toxicity (LD50): 5628 mg/kg [Rat.]. (Methyl alcohol).
- Acute dermal toxicity (LD50): 15800 mg/kg [Rabbit.]. (Methyl alcohol).

### Chronic Effects on Humans
- **MUTAGENIC EFFECTS:** Mutagenic for mammalian somatic cells. [Methyl alcohol]. Mutagenic for bacteria and/or yeast. [Methyl alcohol].
- **TERATOGENIC EFFECTS:** Classified POSSIBLE for human [Methyl alcohol].
- **DEVELOPMENTAL TOXICITY:** Classified Reproductive system/toxin/female, Reproductive system/toxin/male [POSSIBLE] [Methyl alcohol].
- Contains material which may cause damage to the following organs: blood, kidneys, liver, brain, peripheral nervous system, upper respiratory tract, skin, central nervous system (CNS), optic nerve.

### Other Toxic Effects on Humans
- Hazardous in case of skin contact (irritant), of ingestion, of inhalation.
- Slightly hazardous in case of skin contact (permeator).

### Special Remarks on Toxicity to Animals
- Not available.

### Special Remarks on Chronic Effects on Humans
- Passes through the placental barrier.
- May affect genetic material.
- May cause birth defects and adverse reproductive effects (paternal and maternal effects and fetotoxicity) based on animal studies. (Methyl alcohol)

### Special Remarks on Other Toxic Effects on Humans
- Acute Potential Health effects:
  - May cause eye and skin irritation. Methanol can be absorbed through the skin, producing systemic effects that include visual disturbances.
  - Inhalation: May cause respiratory tract irritation with coughing and wheezing. May affect behavior/central nervous system/peripheral nervous system, gastrointestinal tract, respiration, lungs, and blood, and heart/cardiovascular system (bradycardia, tachycardia). May also cause metabolic acidosis and severe visual effects which may include reduced reactivity/and or increased sensitivity to light, blurred, double/and or snowy vision, and blindness.
  - Ingestion: May be harmful and affect eyes (cause significant visual disturbances including blindness) if swallowed. May cause gastrointestinal tract irritation with abdominal pain, fatigue, nausea, vomiting, and diarrhea or constipation. May affect behavior/central nervous system/peripheral nervous system (general anesthetic, dizziness, delirium, confusion, restlessness, giddiness, back pain, headache, muscle weakness, somnolence, spastic paralysis, muscle contraction, ataxia, seizures, unconsciousness, coma), brain, blood (leukocytosis), metabolism, respiration (dyspnea, apnea, hyperventilation, pulmonary edema, coughing, respiratory failure), liver, urinary system (kidneys - renal failure, hematuria), endocrine system (spleen, pancreas (pancreatitis, hyperglycemia)), cardiovascular system (tachycardia, bradycardia, cardiac failure, hypotension). May also cause metabolic acidosis.
  - Narcotic.
  - Chronic Potential Effects:
    - Prolonged or repeated exposure by inhalation or ingestion will have effects similar to those of acute inhalation or ingestion.
    - Methanol is very slowly eliminated from the body. Because of this slow elimination, methanol should be regarded as a cumulative poison. Though a single exposure may cause no effect, daily exposures may result in the accumulation of harmful amounts.
    - Prolonged or repeated skin contact may cause defatting dermatitis with dryness and cracking.

### Section 12. Ecological Information

<table>
<thead>
<tr>
<th>Ecotoxicity</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOD5 and COD</td>
<td>Not available.</td>
</tr>
<tr>
<td>Products of Biodegradation</td>
<td>Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.</td>
</tr>
<tr>
<td>Toxicity of the Products of Biodegradation</td>
<td>The products of degradation are less toxic than the product itself.</td>
</tr>
</tbody>
</table>

*Continued on Next Page*
**P.A.N. Indicator 0.1% in Methanol**

**Special Remarks on the Products of Biodegradation**
Methanol in water is rapidly biodegraded and volatilized. Aquatic hydrolysis, oxidation, photoysis, adsorption to sediment, and bioconcentration are not significant fate processes. The half-life of methanol in surface water ranges from 24 hrs. to 168 hrs.

Based on its vapor pressure, methanol exists almost entirely in the vapor phase in the ambient atmosphere. It is degraded by reaction with photochemically produced hydroxyl radicals and has an estimated half-life of 17.8 days. Methanol is physically removed from air by rain due to its solubility. Methanol can react with NO2 in polluted to form methyl nitrate. The half-life of methanol in air ranges from 71 hrs. (3 days) to 713 hrs. (29.7 days) based on photooxidation half-life in air. (Methyl alcohol)

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**Section 13. Disposal Considerations**

**Waste Disposal**
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

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**Section 14. Transport Information**

**DOT Classification**
CLASS 3: Flammable liquid.

**Identification**
:Methanol solution (Methyl alcohol) UNNA: 1230  PG: II

**Special Provisions for Transport**
Not available.

**DOT (Pictograms)**

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**Section 15. Other Regulatory Information and Pictograms**

**Federal and State Regulations**
Connecticut hazardous material survey.: Methyl alcohol
Illinois toxic substances disclosure to employee act: Methyl alcohol
Illinois chemical safety act: Methyl alcohol
New York release reporting list: Methyl alcohol
Rhode Island RTK hazardous substances: Methyl alcohol
Pennsylvania RTK: Methyl alcohol
Minnesota: Methyl alcohol
Massachusetts RTK: Methyl alcohol
Massachusetts spill list: Methyl alcohol
New Jersey: Methyl alcohol
New Jersey spill list: Methyl alcohol
Louisiana spill reporting: Methyl alcohol
California Director’s List of Hazardous Substances: Methyl Alcohol
TSCA 8(b) inventory: P.A.N; Methyl alcohol
SARA 313 toxic chemical notification and release reporting: Methyl alcohol 99%
CERCLA: Hazardous substances.: Methyl alcohol: 5000 lbs. (2268 kg);

**California Proposition 65 Warnings**
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

**Other Regulations**

**Other Classifications**
WHMIS (Canada)
CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).
CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC)
**P.A.N. Indicator 0.1% in Methanol**

**R11-** Highly flammable.  
**R23/24/25-** Toxic by inhalation, in contact with skin and if swallowed.  

**S7-** Keep container tightly closed.  
**S16-** Keep away from sources of ignition - No smoking.  
**S36/37-** Wear suitable protective clothing and gloves.  
**S45-** In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

<table>
<thead>
<tr>
<th>HMIS (U.S.A.)</th>
<th>National Fire Protection Association (U.S.A.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Hazard</td>
<td>2</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>3</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
</tr>
<tr>
<td>Personal Protection</td>
<td>h</td>
</tr>
</tbody>
</table>

**WHMIS (Canada) (Pictograms)**

**DSCL (Europe) (Pictograms)**

**TDG (Canada) (Pictograms)**

**ADR (Europe) (Pictograms)**

**Protective Equipment**

- **Gloves.**
- **Lab coat.**
- **Vapor respirator.** Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.  
- **Splash goggles.**

*Continued on Next Page*
**Section 16. Other Information**

<table>
<thead>
<tr>
<th>MSDS Code</th>
<th>P358S</th>
</tr>
</thead>
<tbody>
<tr>
<td>References</td>
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</tr>
<tr>
<td>Other Special Considerations</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Verified by Sonia Owen.  

**Notice to Reader**

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user’s responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.