PHENOLPHTHALEIN SOLUTION 1%

***********MATERIAL SAFETY DATA SHEET***********

Phenolphthalein Solution 1%
45376

***SECTION 1- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION***

MSDS Name: Phenolphthalein Solution 1%

Catalog Numbers: S71429, S71976, S76970, SP62 1, SP62 500, SP621, SP62500

Synonyms: Phenolphthalein Indicator Solution

Company Identification: Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410
For Information call: 201-796-7100
EMERGENCY NUMBER: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300

*** Section 2 - COMPOSITION, INFORMATION ON INGREDIENTS***

<table>
<thead>
<tr>
<th>CAS #</th>
<th>CHEMICAL NAME</th>
<th>%</th>
<th>EINECS#</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-63-0</td>
<td>Isopropyl Alcohol</td>
<td>99</td>
<td>unlisted</td>
</tr>
<tr>
<td>77-09-8</td>
<td>Phenolphthalein</td>
<td>1.0</td>
<td>unlisted</td>
</tr>
</tbody>
</table>

*** Section 3 - HAZARDS IDENTIFICATION***

EMERGENCY OVERVIEW
Appearance: Colorless Liquid. Flash Point 55 dg. F
WARNING! COMBUSTIBLE LIQUID. CAUSES RESPIRATORY TRACT IRRITATION. MAY CAUSE SKIN IRRITATION. CAUSES EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE DIGESTIVE TRACT IRRITATION. MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. MAY BE ABSORBED THROUGH THE SKIN. MAY CAUSE KIDNEY DAMAGE. Target organs: Kidneys, Central Nervous System, None.

POTENTIAL HEALTH EFFECTS:

EYE:
May cause eye irritation. Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury.

SKIN:
May cause skin irritation. Prolonged and/or repeated contact may cause defatting of skin and dermatitis. May cause irritation with pain and stinging, especially if the skin is abraded.

INGESTION:
May cause irritation of the digestive tract. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause Central Nervous System depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause
collapse, unconsciousness, coma and possible death due to respiratory failure. Expected to be a low ingestion hazard.

INHALATION:
Inhalation of high concentrations may cause Central Nervous System effects characterized by headache, dizziness, unconsciousness and coma. May cause respiratory tract irritation. Inhalation of vapor may cause respiratory tract irritation. Low hazard for usual industrial handling.

CHRONIC:
Prolonged or repeated skin contact may cause defatting and dermatitis. May cause allergic skin reaction in some individuals.

***SECTION 4 - FIRST AID***

EYES:
Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid. Get medical aid immediately.

SKIN:
Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Flush skin with plenty of soap and water.

INGESTION:
If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately. Get medical aid if irritation or symptoms occur.

INHALATION:
Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

NOTES TO PHYSICIAN:
Treat symptomatically and supportively.

***SECTION 5 - FIRE FIGHTING MEASURES***

GENERAL INFORMATION:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors can travel to a source of ignition and flash back. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. This chemical poses an explosion hazard.

EXTINGUISHING MEDIA:
For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For small fires, use water spray, dry chemical, carbon dioxide or chemical foam. Use water spray to cool fire-exposed containers. Water may be ineffective.

AUTOIGNITION TEMPERATURE: 750 dg. F (398.89 dg. C)
FLASH POINT: 55 dg. F (12.78 dg. C)
NFPA RATING: Not published.
EXPLOSION LIMITS, LOWER: 2.0
UPPER: 12.7 @ 200

***SECTION 6 - ACCIDENTAL RELEASE MEASURES***
**GENERAL INFORMATION:** Use proper personal protective equipment as indicated in Section 8.

**SPILLS/LEAKS:**
Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container for disposal. Remove all sources of ignition.

***SECTION 7 - HANDLING AND STORAGE***

**HANDLING:**
Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, sparks or open flames. Keep container tightly closed. Avoid ingestion and inhalation.

**STORAGE:**
Keep away from heat, sparks, and flame. Keep away from sources of ignition. Keep container closed when not in use. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances.

***SECTION 8 - EXPOSURE***

**ENGINEERING CONTROLS:**
Good general ventilation should be sufficient to control airborne levels. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible limits.

**EXPOSURE LIMITS:**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH/NIOSH</th>
<th>OSHA</th>
<th>Final PEL's</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl Alcohol</td>
<td>400 ppm ; 983</td>
<td>400 ppm TWA; 980</td>
<td>400 ppm TWA; 980</td>
</tr>
<tr>
<td></td>
<td>Mg/m3; 500</td>
<td>mg/m3 TWA; 500</td>
<td>mg/m3 TWA; 1230</td>
</tr>
<tr>
<td>Phenolphthalein</td>
<td>None listed</td>
<td>None listed</td>
<td>None listed</td>
</tr>
</tbody>
</table>

**OSHA Vacated PEL’s:**

**ISOPROPYL ALCOHOL:**
400 ppm TWA; 980 mg/m3 TWA; 500 ppm STEL; 1225 mg/m3 STEL

**PHENOLPHTHALEIN:**
No OSHA VACATED PEL’s listed for this chemical.

**PERSONAL PROTECTIVE EQUIPMENT:**

**EYES:**
Wear safety glasses and chemical goggles if splashing is possible. Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA’s eye and face protection regulations in 29 CFR 1910.133.

**SKIN:**
Wear appropriate protective clothing to minimize contact with skin. Wear appropriate protective clothing to prevent skin exposure.

**RESPIRATORS:**
A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected. A respiratory protection program that meets OSHA’s 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator’s use. Follow the OSHA respirator regulations found in 29CFR 1010.134. Always use a NIOSH-approved respirator when necessary.

*** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES***

Physical State: Liquid
Appearance: Colorless liquid
Odor: Alcohol-like odor
pH: not available
Vapor Pressure: 40 mm Hg
Vapor Density: 2.1
Evaporation Rate: 2.88 (Butyl Acetate = 1)
Viscosity: Not available
Boiling Point: 83 dg C
Freezing Melting Point: -89 dg C
Decomposition Temperature: Not Available
Solubility: Soluble in water.
Specific Gravity/Density: 0.7855
Molecular Formula: Mixture
Molecular Weight: Not available.

***SECTION 10 - STABILITY AND REACTIVITY***

Chemical Stability:
Stable.
Conditions to avoid:
STABLE: incompatible materials, ignition sources, excess heat.
Incompatibilities with Other Materials:
Strong Oxidizing agents.

Hazardous Decomposition Products:
Carbon monoxide, carbon dioxide, acrid smoke and fumes.
Hazardous Polymerization:
Will not occur.

***SECTION 11 - TOXICOLOGICAL INFORMATION***

RTECS#:
CAS# 67-63-0: NT8050000
CAS# 77-09-8: SM8380000
LD50/LC50: Not available/Not available

Carcinogenicity:

Isopropyl Alcohol-
ACGIH: Suspected human carcinogen
California: carcinogen
NIOSH: occupational carcinogen
NTP: Suspect carcinogen
OSHA: Possible Select carcinogen.
IARC: Group 3 carcinogen.

Phenolphthalein:
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No data available.
Teratogenicity: No data available.
Reproductive Effects: No data available.
Neurotoxicity: No data available.
Mutagenicity: No data available.
Other Studies: No data available.

***SECTION 12 - ECOLOGICAL INFORMATION***

Ecotoxicity: Not available
Environmental Fate: Not available
Physical/Chemical: Not available
Other: Not available

***SECTION 13 - DISPOSAL CONSIDERATIONS***

Dispose of in a manner consistent with federal, state, and local regulations.
RCRA D-Series Maximum Concentration of Contaminates: Not Listed
RCRA D-Series Chronic Toxicity Reference Levels: Not listed
RCRA F-Series: Not listed
RCRA U-Series: Not listed
Not listed as a material banned from land disposal according to RCRA.

***SECTION 14 - TRANSPORTATION INFORMATION***

US DOT
Shipping Name: **NOT HAZARDOUS PER 49 CFR 173.4***
Hazard Class: 110
UN Number: UN0001
Packing Group:
IMO: No information available.
IATA: No information available.
RID/ADR: No information available.

CANADIAN TDG:
Shipping Name: FLAMMABLE LIQUID NOS (2-PROPanOL)
Hazard Class: 3
UN Number: UN1993
Other Information: FLASHPOINT 12C

***SECTION 15 - REGULATORY CONTROLS***

A. Federal

TSCA
CAS# 67-63-0 is listed on the TSCA inventory.
CAS# 77-09-8 is listed on the TSCA inventory.

HEALTH AND SAFETY REPORTING LIST
CAS# 67-63-0: Effective Date: December 15, 1986

Chemical Test Rules
CAS# 67-63-0: Testing required by: manufacturers; importers; processor
Section 12b
CAS# 67-63-0: export notification required - Section 4

TSCA SIGNIFICANT NEW USE RULE:
None of the chemicals in this material have a SNUR under TSCA.
CERCLA/SARA:
Section 302 (RQ): None of the chemicals in this material have an RQ
Section 302 (TPQ): None of the chemicals in this product have a TPQ.

SARA CODES:
CAS# 67-63-0: Acute, chronic, flammable.
CAS# 77-09-8: Acute

SECTION 313:
This chemical is not at high enough concentration to be reportable under Section 313.
No chemicals are reportable under Section 313.

CLEAN AIR ACT:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

CLEAN WATER ACT:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.

OSHA:
None of the chemicals in this product are considered as highly hazardous by OSHA.

B. State
Isopropyl Alcohol can be found on the following State right to know lists:
California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

Not present on State lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level:
None of the chemicals in this product are listed.

C. International

Canada
CAS# 67-63-0 is listed on Canada’s DSL/NDSL List.
CAS# 77-09-8 is listed on Canada’s DSL/NDSL List.
CAS# 67-63-0 is listed on Canada’s Ingredient Disclosure List.
CAS# 77-09-8 is not listed on Canada’s Ingredient Disclosure List.
European Labeling in Accordance with EC Directives.
Hazard Symbols: Not available.
Risk Phrases:
Safety Phrases:
Exposure Limits:
OEL-AUSTRALIA: TWA 400 ppm (980 mg/m3); STEL 500 ppm (1225 mg/m3).
OEL-BELGIUM: TWA 400 ppm (985 mg/m3); STEL 500 ppm (1230 mg/m3)
OEL-DENMARK: TWA 200 ppm (490 mg/m3); Skin.
OEL-FRANCE: STEL 400 ppm (980 mg/m3)
OEL-GERMANY: TWA 400 ppm (980 mg/m3)
OEL-JAPAN: STEL 400 ppm (980 mg/m3)
OEL-NETHERLANDS: TWA 400 ppm (980 mg/m3); Skin
OEL-THE PHILLIPINES: TWA 400 ppm (980 mg/m3)
OEL-RUSSIA: STEL 400 ppm (10 mg/m3)
OEL-SWEDEN: TWA 150 ppm (350 mg/m3); STEL 250 ppm (600 mg/m3)
OEL-SWITZERLAND: TWA 400 ppm (980 mg/m3); STEL 800 ppm.
OEL-TURKEY: TWA 200 ppm (500 mg/m3)
OEL-UNITED KINGDOM: TWA 400 ppm (980 mg/m3); STEL 500 ppm; Skin.
OEL in NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV.

***SECTION 16 - ADDITIONAL INFORMATION***

Additional Information:

MSDS Creation Date: 10/04/1995 Revision Date: 03/04/1996

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from it's use. User's should make their own investigations to determine the suitability of the information for their particular purpose. In no way shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, however so arising, even Fisher has been advised of the possibility of such damages.