Material Safety Data Sheet
Universal Indicator Solution (SI60/S80043)

Section 1 - Chemical Product and Company Identification

MSDS Name: Universal Indicator Solution (SI60/S80043)
Catalog Numbers: NC9515911, NC9684732, SI60-1, SI60-500
Synonyms: None
Company Identification:
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-63-0</td>
<td>Isopropyl alcohol</td>
<td>37.0</td>
<td>200-661-7</td>
</tr>
<tr>
<td>518-51-4</td>
<td>Phenolphthalein, sodium salt</td>
<td>&lt;1.0</td>
<td>208-254-6</td>
</tr>
<tr>
<td>845-10-3</td>
<td>Methyl Red, sodium salt</td>
<td>&lt;1.0</td>
<td>212-682-9</td>
</tr>
<tr>
<td>34722-90-2</td>
<td>Phenol,4,4'-(3h-2,1-benzoxathiol-3-ylidene)bis2-bromo--methy l-1-6-(1-methylethyl)-, s,s-dioxide,monos</td>
<td>&lt;1.0</td>
<td>252-169-7</td>
</tr>
<tr>
<td>67-56-1</td>
<td>Methyl alcohol</td>
<td>0.8</td>
<td>200-659-6</td>
</tr>
<tr>
<td>62625-21-2</td>
<td>Phenol,4,4'-(3h-2,1-benzoxathiol-3-ylidene)bis5 methyl-2-(1-m ethylethyl)-, s,s-dioxide, monosodium s</td>
<td>0.03</td>
<td>263-650-6</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>Balance</td>
<td>231-791-2</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear green liquid. Flash Point: 75 deg F.
Warning! May cause severe eye irritation and possible injury. Flammable liquid and vapor. Prolonged or repeated contact causes defatting of the skin with irritation, dryness, and cracking. May cause respiratory tract irritation. May form explosive peroxides. May cause kidney damage.
Target Organs: Kidneys, central nervous system.

Potential Health Effects
Eye: Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury. Vapors may cause eye irritation.
Skin: May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. May cause irritation with pain and stinging, especially if the skin is abraded.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause systemic toxicity with acidosis. 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.
Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Inhalation of vapor may cause respiratory tract irritation.
Chronic: Prolonged or repeated skin contact may cause defatting and dermatitis.
Section 4 - First Aid Measures

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

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

**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.

**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid immediately.

**Notes to Physician:** Urine acetone test may be helpful in diagnosis.

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 may form an explosive mixture with air. 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. Flammable liquid and vapor. May form explosive peroxides. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. May be ignited by heat, sparks, and flame.

**Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray.

**Flash Point:** 75e deg F (23.89 deg C)

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** 2.0%

**Upper:** 12%

**NFPA Rating:** (estimated) Health: 2; Flammability: 3; Instability: 0

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. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. 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. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

**Storage:** Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection
Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>200 ppm TWA; 400 ppm STEL</td>
<td>400 ppm TWA; 980 mg/m3 TWA 2000 ppm IDLH</td>
<td>400 ppm TWA; 980 mg/m3 TWA</td>
</tr>
<tr>
<td>Phenolphthalein, sodium salt</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Methyl Red, sodium salt</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Phenol,4,4'-(3h-2,1-benzoxathiol-3-ylidene)bis2-bromo--methyl l-6-(1-methylethyl)-, s,s-dioxide, monos</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Methyl alcohol</td>
<td>200 ppm TWA; 250 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous route</td>
<td>200 ppm TWA; 260 mg/m3 TWA 6000 ppm IDLH</td>
<td>200 ppm TWA; 260 mg/m3 TWA</td>
</tr>
<tr>
<td>Phenol,4,4'-(3h-2,1-benzoxathiol-3-ylidene)bis5-methyl2-(1-m ethylethyl)-, s,s-dioxide, monosodium s</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Water</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Isopropyl alcohol: 400 ppm TWA; 980 mg/m3 TWA Phenolphthalein, sodium salt: No OSHA Vacated PELs are listed for this chemical. Methyl Red, sodium salt: No OSHA Vacated PELs are listed for this chemical. Phenol,4,4'-(3h-2,1-benzoxathiol-3-ylidene)bis2-bromo--methyl l-6-(1-methylethyl)-, s,s-dioxide,monos: No OSHA Vacated PELs are listed for this chemical. Methyl alcohol: 200 ppm TWA; 260 mg/m3 TWA Phenol,4,4'-(3h-2,1-benzoxathiol-3-ylidene)bis5-methyl2-(1-m ethylethyl)-, s,s-dioxide, monosodium s: No OSHA Vacated PELs are listed for this chemical. Water: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical splash goggles.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear green
Odor: alcohol-like
pH: Approximately 7.5
Vapor Pressure: 25 mm Hg
Vapor Density: 1.3
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 80 deg C
Freezing/Melting Point: Not available.
Decomposition Temperature: Not available.
Solubility: Soluble in water.
Specific Gravity/Density: 0.93
Molecular Formula: Mixture
Molecular Weight: Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stable. This material may be sensitive to peroxide formation. Isopropanol is susceptible to
autoxidation and therefore should be classified as peroxidizable.

**Conditions to Avoid:** Ignition sources.

**Incompatibilities with Other Materials:** Acids (mineral, non-oxidizing, e.g. hydrochloric acid, hydrofluoric acid, muriatic acid, phosphoric acid), acids (mineral, oxidizing, e.g. chromic acid, hypochlorous acid, nitric acid, sulfuric acid), acids (organic, e.g. acetic acid, benzoic acid, formic acid, methanoic acid, oxalic acid), azo, diazo, and hydrazines (e.g. dimethyl hydrazine, hydrazine, methyl hydrazine), isocyanates (e.g. methyl isocyanate), metals (alkali and alkaline, e.g. cesium, potassium, sodium), nitrides (e.g. potassium nitride, sodium nitride), peroxides and hydroperoxides (organic, e.g. acetyl peroxide, benzoyl peroxide, butyl peroxide, methyl ethyl ketone peroxide), epoxides (e.g. butyl glycidyl ether), oxidizing agents (strong, e.g. bromine, hydrogen peroxide, nitrogen dioxide, potassium nitrate), reducing agents (strong, e.g. aluminum carbide, chlorosilane, hydrogen phosphide, lithium hydride), water reactive substances (e.g. acetic anyhdrde, alkyl aluminum chloride, calcium carbide, ethyl dichlorosilane).

**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide, acrid smoke and fumes.

**Hazardous Polymerization:** Has not been reported

### Section 11 - Toxicological Information

**RTECS#:**
- CAS# 67-63-0: NT8050000
- CAS# 518-51-4 unlisted.
- CAS# 845-10-3 unlisted.
- CAS# 34722-90-2 unlisted.
- CAS# 67-56-1: PC1400000
- CAS# 62625-21-2 unlisted.
- CAS# 7732-18-5: ZC0110000

#### LD50/LC50:

**CAS# 67-63-0:**
- Draize test, rabbit, eye: 100 mg Severe;
- Draize test, rabbit, eye: 10 mg Moderate;
- Draize test, rabbit, eye: 100 mg/24H Moderate;
- Draize test, rabbit, skin: 500 mg Mild;
- Inhalation, mouse: LC50 = 53000 mg/m3;
- Inhalation, rat: LC50 = 16000 ppm/8H;
- Inhalation, rat: LC50 = 72600 mg/m3;
- Oral, mouse: LD50 = 3600 mg/kg;
- Oral, mouse: LD50 = 3600 mg/kg;
- Oral, rabbit: LD50 = 6410 mg/kg;
- Oral, rat: LD50 = 5045 mg/kg;
- Oral, rat: LD50 = 5000 mg/kg;
- Skin, rabbit: LD50 = 12800

**CAS# 518-51-4:**

**CAS# 845-10-3:**

**CAS# 34722-90-2:**

**CAS# 67-56-1:**
- Draize test, rabbit, eye: 40 mg Moderate;
- Draize test, rabbit, eye: 100 mg/24H Moderate;
- Draize test, rabbit, skin: 20 mg/24H Moderate;
- Inhalation, rabbit: LC50 = 81000 mg/m3/14H;
- Inhalation, rat: LC50 = 64000 ppm/4H;
- Oral, mouse: LD50 = 7300 mg/kg;
- Oral, rabbit: LD50 = 14200 mg/kg;
- Oral, rat: LD50 = 5600 mg/kg;
- Skin, rabbit: LD50 = 15800 mg/kg;
CAS# 62625-21-2:

CAS# 7732-18-5:
  Oral, rat: LD50 = >90 mL/kg;

Carcinogenicity:
CAS# 67-63-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 518-51-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 845-10-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 34722-90-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 67-56-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 62625-21-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No data available.
Teratogenicity: No data available.
Reproductive Effects: No data available.
Mutagenicity: No data available.
Neurotoxicity: No data available.
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:**
CAS# 67-56-1: waste number U154 (Ignitable waste).

Section 14 - Transport Information

<table>
<thead>
<tr>
<th></th>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shipping Name:</strong></td>
<td>FLAMMABLE LIQUIDS, N.O.S.</td>
<td>No information available.</td>
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<tr>
<td><strong>Hazard Class:</strong></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>UN Number:</strong></td>
<td>UN1993</td>
<td></td>
</tr>
<tr>
<td><strong>Packing Group:</strong></td>
<td>III</td>
<td></td>
</tr>
</tbody>
</table>

Section 15 - Regulatory Information

**US FEDERAL**

**TSCA**
CAS# 67-63-0 is listed on the TSCA inventory.
CAS# 518-51-4 is listed on the TSCA inventory.
CAS# 845-10-3 is listed on the TSCA inventory.
CAS# 34722-90-2 is listed on the TSCA inventory.
CAS# 67-56-1 is listed on the TSCA inventory.
CAS# 62625-21-2 is listed on the TSCA inventory.
CAS# 7732-18-5 is listed on the TSCA inventory.

Health & Safety Reporting List
CAS# 67-63-0: Effective 12/15/86, Sunset 12/15/96

Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.

Section 12b
None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs
CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.

SARA Codes
CAS # 67-63-0: immediate, delayed, fire.
CAS # 67-56-1: immediate, fire.
CAS # 62625-21-2: immediate.

Section 313
This material contains Isopropyl alcohol (CAS# 67-63-0, 37.0%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:
CAS# 67-56-1 is listed as a hazardous air pollutant (HAP).

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.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

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

STATE
CAS# 67-63-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 518-51-4 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 845-10-3 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 34722-90-2 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 67-56-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 62625-21-2 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols:
Not available.

Risk Phrases:
R 10 Flammable.

Safety Phrases:
S 16 Keep away from sources of ignition - No smoking.
S 24/25 Avoid contact with skin and eyes.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 7 Keep container tightly closed.
WGK (Water Danger/Protection)
CAS# 67-63-0: 1
CAS# 518-51-4: 1
CAS# 845-10-3: No information available.
CAS# 34722-90-2: No information available.
CAS# 67-56-1: 1
CAS# 62625-21-2: No information available.
CAS# 7732-18-5: No information available.

Canada - DSL/NDSL
CAS# 67-63-0 is listed on Canada’s DSL List.
CAS# 518-51-4 is listed on Canada’s DSL List.
CAS# 845-10-3 is listed on Canada’s DSL List.
CAS# 34722-90-2 is listed on Canada’s DSL List.
CAS# 67-56-1 is listed on Canada's DSL List.
CAS# 62625-21-2 is listed on Canada's DSL List.
CAS# 7732-18-5 is listed on Canada’s DSL List.

Canada - WHMIS
This product has a WHMIS classification of B2, D2B.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the
MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List
CAS# 67-63-0 is listed on the Canadian Ingredient Disclosure List.
CAS# 67-56-1 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 7/23/1998
Revision #4 Date: 10/03/2005

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 its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no
event 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, howsoever arising, even if Fisher has been advised of the possibility of such damages.