1. PRODUCT IDENTIFICATION

PRODUCT NAME: #100 Red Ink
PRODUCT COLOR: Red
RECOMMENDED USE: Coding & Marking

Manufacturer/Supplier:
Diagraph MSP
5307 Meadowland Parkway
Marion IL 62959
Phone: 1-800-521-3047
Email: msds@diagraphmsp.com
Contact: Customer Service

Emergency Telephone Number:
TRANSPORTATION: INFOTRAC: 800-535-5053 (US only)
+1-352-323-3500 international

2. HAZARDS IDENTIFICATION

Emergency Overview:

GHS Classification:

<table>
<thead>
<tr>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable liquids</td>
</tr>
<tr>
<td>Acute toxicity - Oral</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
</tr>
</tbody>
</table>

GHS label elements, including precautionary statements

- Pictogram
- Signal Word: Danger

Hazard Statements
H226   Flammable liquid and vapor
H302   Harmful if swallowed
H313+H333 May be harmful in contact with skin or if inhaled
H315   Causes skin irritation
H318   Causes serious eye damage
H335   May cause respiratory irritation
H336   May cause drowsiness or dizziness

Precautionary Statements
P210  Keep away from heat/sparks/open flames/hot surfaces. — No smoking
P242  Use only non-sparking tools
P261  Avoid breathing dust/fume/gas/mist/vapors/spray
P270  Do not eat, drink or smoke when using this product
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302+P352 IF ON SKIN: Wash with plenty of soap and water
P303+P361+P351 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.
  Rinse continuously with water for several minutes.
P305+P351+P338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact
  lenses, if present and easy to do. Continue rinsing
P308+P313 IF exposed or concerned: Get medical advice/attention.
P310  Immediately call a POISON CENTER or doctor/physician
P330  Rinse mouth
P332+P313 If skin irritation occurs: Get medical advice/attention
P403+233 Store in a well-ventilated place. Keep container tightly closed
P501  Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION AND INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Butyl Alcohol</td>
<td>71-36-3</td>
<td>20-40</td>
</tr>
<tr>
<td>1-Methoxy-2-propanol</td>
<td>107-98-2</td>
<td>10-20</td>
</tr>
<tr>
<td>Ethyl Alcohol</td>
<td>64-17-5</td>
<td>5-25</td>
</tr>
<tr>
<td>2-Propanol</td>
<td>67-63-0</td>
<td>2-15</td>
</tr>
<tr>
<td>Propyl Acetate</td>
<td>109-60-4</td>
<td>0-5</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures

Ingestion: If swallowed, do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Eyes: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Skin: Remove contaminated clothing. Wash off with soap and plenty of water. Consult a physician.

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Most important symptoms and effects

**Symptoms**
- Eye contact may result in redness, pain, blurred vision, burning sensation. Skin contact may result in irritation, defatting or dermatitis.
- Inhalation may cause drowsiness or dizziness. Inhalation may cause respiratory tract irritation. Ingestion may cause nausea, vomiting, dizziness and headache.

Indication of any immediate medical attention and special treatment needed

**Notes to Physician**
- Treat symptomatically

### 5. FIREFIGHTING MEASURES

**Suitable extinguishing media:**
- Water fog, Multipurpose foam, Dry chemical, CO₂

**Unsuitable extinguishing media:**
- Do not use a solid water stream as it may scatter and spread fire.

**Specific hazards in case of fire:**
- Fight as volatile liquid fire
- Flashback fires may occur
- Vapors are dense and may travel to remote ignition source

**Hazardous combustion products:**
- Carbon oxides, Nitrogen oxides, organic combustion products which may be toxic and/or irritating

**Protective equipment and precautions for fire fighters:**
- As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:**
- Wear chemical goggles, gloves, boots and protective clothing. Wear respirator if necessary. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition and heat.

**Environmental precaution:**
- Prevent additional discharge of material. Prevent material from entering sewers or water courses.

**Methods and materials for containment and cleaning up:**
- Absorb small spills with sand, filter-aid, vermiculite or other inert absorbent material, then place in a chemical waste container. For large spills, contain with sand or earth dikes. Dispose of waste in accordance with applicable government regulations.
7. HANDLING AND STORAGE

Precautions for safe handling:
Avoid contact with eyes. Wash face, hands, and any exposed skin thoroughly after handling. Do not eat, drink of smoke when using this product. Wear protective gloves/protective clothing and eye/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Unscrew all caps slowly. Do not unscrew entirely until all pressure has been completely released. Keep away from heat/sparks/open flames/hot surfaces. Emptied containers may retain residues. Precautions apply to emptied containers.

Conditions for safe storage, including incompatibilities:
Keep container tightly closed and store in a cool, dry and well-ventilated place. Keep storage temperature between 4-32 °C (40-90 °F). Incompatible with strong oxidizing agents, strong acids, strong bases, alkali metals and halogens.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Guidelines:

<table>
<thead>
<tr>
<th>Chemical Name and CAS#</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
</table>
| n-Butyl Alcohol 71-36-3 | TWA: 20 ppm  
TWA: 300 mg/m³ | TWA: 100 ppm  
TWA: 100 ppm  
STEL: 150 ppm  
STEL: 360 mg/m³  
STEL: 150 ppm  
STEL: 540 mg/m³ | IDLH: 1400 ppm  
Ceiling: 50 ppm  
Ceiling: 150 mg/m³ skin |
| 1-Methoxy-2-propanol 107-98-2 | STEL: 150 ppm  
TWA: 100 ppm | TWA: 100 ppm  
TWA: 360 mg/m³  
STEL: 150 ppm  
STEL: 540 mg/m³ | TWA: 100 ppm  
TWA: 360 mg/m³  
STEL: 150 ppm  
STEL: 540 mg/m³ |
| Ethyl Alcohol 64-17-5 | TWA: 1000 ppm  
TWA: 1900 mg/m³ | TWA: 1000 ppm  
TWA: 1900 mg/m³ | IDLH: 3300 ppm  
TWA: 1000 ppm  
TWA: 1900 mg/m³ |
| 2-Propanol 67-63-0 | STEL: 400 ppm  
TWA: 200 ppm | TWA: 400 ppm  
TWA: 980 mg/m³  
STEL: 500 ppm  
STEL: 1225 mg/m³ | IDLH: 2000 ppm  
TWA: 400 ppm  
TWA: 980 mg/m³  
STEL: 500 ppm  
STEL: 1225 mg/m³ |
| Propyl Acetate 109-60-4 | TWA: 200 ppm  
TWA: 840 mg/m³  
STEL: 250 ppm  
STEL: 1025 mg/m³ | TWA: 400 ppm  
TWA: 980 mg/m³  
STEL: 500 ppm  
STEL: 1225 mg/m³ | IDLH: 1700 ppm  
TWA: 200 ppm  
TWA: 840 mg/m³  
STEL: 250 ppm  
STEL: 1050 mg/m³ |

Appropriate engineering controls
Apply technical measures to comply with the occupational exposure limits. Local exhaust and mechanical ventilations are recommended to be used as engineering controls.

Individual protection measures, such as personal protective equipment:

**Eye/Face protection:** Safety glasses with side shields or chemical goggles must be worn.

**Skin/Body protection:** Wear protective gloves. Wear suitable protective clothing and footwear appropriate for the risk of exposure.

**Respiratory protection:** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.
General hygiene: Handle in accordance with good industrial hygiene and safety practice.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks-Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state:</td>
<td>Liquid</td>
<td></td>
</tr>
<tr>
<td>Odor:</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>Odor threshold:</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>pH:</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point:</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Boiling point/Boiling range:</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Flash point:</td>
<td>23.3 °C / 74 °F</td>
<td>Tag Closed Cup</td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>&lt;1</td>
<td>butyl acetate = 1</td>
</tr>
<tr>
<td>Flammability (solid, gas):</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Upper/lower flammability limits:</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure:</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Vapor density:</td>
<td>&gt;1</td>
<td>air = 1</td>
</tr>
<tr>
<td>Specific gravity:</td>
<td>0.9 - 0.98</td>
<td>water = 1</td>
</tr>
<tr>
<td>Water solubility:</td>
<td>Partially soluble</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents:</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient:</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Auto-ignition Temperature:</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature:</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Viscosity:</td>
<td>8-20 cps</td>
<td></td>
</tr>
<tr>
<td>VOC Content (%):</td>
<td>90 %</td>
<td></td>
</tr>
<tr>
<td>VOC Content:</td>
<td>6.7 – 7.3 lbs/gal</td>
<td></td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity:
Not reactive under normal conditions.

Chemical Stability:
Stable under recommended storage conditions.

Possibility of hazardous reactions:
None under normal processing.

Conditions to avoid:
Keep out of reach of children. Keep away from heat, sparks and open flame. Keep away from contact with incompatible materials.

Incompatible materials:
Strong oxidizing agents, strong acids, strong bases, alkali metals, halogens

Hazardous decomposition products:
Carbon oxides, nitrogen oxides, thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact: Causes serious eye damage
Skin contact: Causes skin irritation

Inhalation: May cause respiratory irritation. May cause drowsiness or dizziness.

Ingestion: Harmful if swallowed

Component Information:

<table>
<thead>
<tr>
<th>Chemical Name and CAS#</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Butyl Alcohol 71-36-3</td>
<td>= 790 mg/kg (Rat)</td>
<td>= 5,620 mg/kg (Rabbit)</td>
<td>&gt;17.9 mg/l (Rat) 4h</td>
</tr>
<tr>
<td>1-Methoxy-2-propanol 107-98-2</td>
<td>= 4,016 mg/kg (Rat)</td>
<td>&gt;2,000 mg/kg (Rabbit)</td>
<td>= 25.8 mg/l (Rat) 5h</td>
</tr>
<tr>
<td>Ethyl Alcohol 64-17-5</td>
<td>= 2,000 mg/kg (Rat)</td>
<td>&gt;2,000 mg/l (Rabbit)</td>
<td>&gt;20 mg/l (Mouse) 4h</td>
</tr>
<tr>
<td>2-Propanol 67-63-0</td>
<td>= 5,045 mg/kg (Rat)</td>
<td>= 12,800 mg/kg (Rabbit)</td>
<td>= 16,000 mg/m³ (Rat) 8h</td>
</tr>
<tr>
<td>Propyl Acetate 109-60-4</td>
<td>= 9,370 mg/kg (Rat)</td>
<td>= 17,740 mg/kg (Rabbit)</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Information on physical, chemical and toxicological effects:

Symptoms

Please see section 4 of this SDS for symptoms

Delayed and immediate effects as well as chronic effects from short and long-term exposure:

Carcinogenicity:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol 67-63-0</td>
<td>Group 3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2B – Limited evidence of carcinogenicity

Group 3 IARC components are "not classifiable as human carcinogens"

NTP (National Toxicology Program)

Known - Known Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Numerical measures of toxicity:

Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Component Information

<table>
<thead>
<tr>
<th>Chemical Name and CAS#</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Butyl Alcohol 71-36-3</td>
<td>EC50 - Desmodesmus subspicatus - 500 mg/L - 72h</td>
<td>LC50 - Pimephales promelas - 1840 mg/L - 96 h</td>
<td>EC50 - Daphnia magna – 1983 mg/L - 48 h</td>
<td></td>
</tr>
<tr>
<td>1-Methoxy-2-propanol 107-98-2</td>
<td>LC50 - Pimephales promelas - 20,800 mg/L – 96h</td>
<td></td>
<td>EC50 - Daphnia magna – 23,300 mg/L – 48h</td>
<td></td>
</tr>
<tr>
<td>Ethyl Alcohol 64-17-5</td>
<td>LC50 - Pimephales promelas – 15,300 mg/L – 96h</td>
<td>EC50 = 34634 mg/L 30 min EC50 = 35470 mg/L 5 min</td>
<td>EC50 - Daphnia magna - 9268 - 14221 mg/L – 48h</td>
<td></td>
</tr>
<tr>
<td>2-Propanol 67-63-0</td>
<td>EC50 - Desmodesmus subspicatus - 2000 mg/L – 72h</td>
<td>LC50 - Pimephales promelas – 9,640 mg/L – 96h</td>
<td>EC50 - Daphnia magna – 5,102 mg/L – 96h</td>
<td></td>
</tr>
<tr>
<td>Propyl Acetate 109-60-4</td>
<td></td>
<td></td>
<td>EC50 - Daphnia magna - 318 mg/L – 24h</td>
<td></td>
</tr>
</tbody>
</table>

Persistence/Degradability:
Not determined

Bioaccumulation:
Not determined

Mobility:
Not determined

Other Adverse Effects:
No data available

13. DISPOSAL CONSIDERATIONS

Disposal of Wastes:
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging:
Dispose of as unused product in accordance with applicable regional, national and local laws and regulations.

SECTION 14 – TRANSPORTATION INFORMATION

DOT
- UN number: 1210
- Proper shipping name: PRINTING INK
- Hazard class: 3
- Packing group: III
- ERG#: 129

IATA
- UN number: 1210
- Proper shipping name: PRINTING INK
- Hazard class: 3
- Packing group: III

IMDG
- UN number: 1210
SAFETY DATA SHEET

Proper shipping name: PRINTING INK
Hazard class: 3
Packing group: III
Marine pollutant: No

SECTION 15 – REGULATORY INFORMATION

TSCA STATUS: All Components listed

OTHER REGULATORY:

<table>
<thead>
<tr>
<th>Ingredient(s)</th>
<th>SARA 302</th>
<th>SARA 311/312</th>
<th>SARA 313</th>
<th>RECRA</th>
<th>CERCLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Butyl Alcohol</td>
<td>No</td>
<td>F, A, C</td>
<td>Yes</td>
<td>U031</td>
<td>No</td>
</tr>
<tr>
<td>1-Methoxy-2-propanol</td>
<td>No</td>
<td>F, A, C</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Ethyl Alcohol</td>
<td>No</td>
<td>F, C</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2-Propanol</td>
<td>No</td>
<td>F, A, C</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Propyl Acetate</td>
<td>No</td>
<td>F, A</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

SARA 311/312 Codes:
- R = Reactive Hazard
- P = Pressure Hazard
- F = Fire Hazard
- A = Immediate/Acute
- C = Delayed/Chronic

California Prop. 65 Components: Chemicals known to the state of California to cause birth defects or other reproductive harm:
This product does not contain any chemicals known to the state of California to cause cancer, birth defects or any other reproductive harm.

SECTION 16 – OTHER INFORMATION

HMIS:

Health: 2
Chronic Health Hazard: *
Flammability: 3
Reactivity: 0

Revision Date: 08-May-2015
Replaces: 19-Jan-2015
Revision Note: Update. Correction to Oral toxicity classification in Section 2 and update to other information in Section 2 & 11 due to new SDS from suppliers.

Prepared by: Don Wright

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