SAFETY DATA SHEET

1. Identification
Product identifier: Coder Ink Conditioner
Other means of identification: None.
Recommended use: Printing.
Recommended restrictions: None known.
Manufacturer/Importer/Supplier/Distributor information
Company name: Diagraph MSP
Address: 5307 Meadowland Parkway
Marion IL 62959
Telephone: 1-800-521-3047
E-mail: msds@diagraphmsp.com
Contact person: Customer Service
Emergency phone number: Emergency telephone 800-535-5053 (US only)
+1-352-323-3500 international

2. Hazard(s) identification
Physical hazards: Flammable liquids
Category 2
Health hazards:
- Serious eye damage/eye irritation
Category 2A
- Specific target organ toxicity, single exposure
Category 3 respiratory tract irritation
- Specific target organ toxicity, single exposure
Category 3 narcotic effects
OSHA defined hazards: Not classified.
Label elements
Signal word: Warning
Hazard statement: Flammable liquid and vapor. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.
Precautionary statement
Prevention: Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection/face protection.
Response: If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media to extinguish.
Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

3. Composition/information on ingredients
Mixtures
<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>80-89</td>
</tr>
</tbody>
</table>
Composition comments

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation
Move injured person into fresh air and keep person calm under observation. If necessary, seek hospital and take along these instructions.

Skin contact
Take off contaminated clothing and wash before reuse. Wash off with warm water and soap. Get medical attention if irritation develops and persists.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Irritation of nose and throat. Coughing.

Most important symptoms/effects, acute and delayed

In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

Indication of immediate medical attention and special treatment needed

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

5. Fire-fighting measures

Suitable extinguishing media
Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
The product is flammable, and heating may generate vapors which may form explosive vapor/air mixtures. Vapors are heavier than air and may travel along the ground to some distant source of ignition and flash back.

Special protective equipment and precautions for firefighters
Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. See Section 8 of the SDS for Personal Protective Equipment.

Methods and materials for containment and cleaning up
Extinguish all flames in the vicinity.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions
Avoid discharge into drains, water courses or onto the ground unless authorized by permit.
7. Handling and storage

Precautions for safe handling
Do not smoke and do not spray near an open flame or other sources of ignition. Vapors are heavier than air and may travel along the floor and in the bottom of containers. Vapors may be ignited by a spark, a hot surface or an ember. The product is flammable, and heating may generate vapors which may form explosive vapor/air mixtures. All equipment used when handling the product must be grounded. Local exhaust is recommended. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Follow rules for flammable liquids. Do not store near heat sources or expose to high temperatures. Keep away from heat, sparks and open flame. Store in a closed container away from incompatible materials. Store between 35°F (2°C) and 120°F (49°C).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol (CAS 67-63-0)</td>
<td>PEL</td>
<td>980 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>400 ppm</td>
</tr>
<tr>
<td>Ethanol (CAS 64-17-5)</td>
<td>PEL</td>
<td>1900 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1000 ppm</td>
</tr>
<tr>
<td>n-Propyl Acetate (CAS 109-60-4)</td>
<td>PEL</td>
<td>840 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200 ppm</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol (CAS 67-63-0)</td>
<td>STEL</td>
<td>400 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>200 ppm</td>
</tr>
<tr>
<td>Ethanol (CAS 64-17-5)</td>
<td>STEL</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>n-Propyl Acetate (CAS 109-60-4)</td>
<td>STEL</td>
<td>250 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>200 ppm</td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
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<tr>
<td>2-Propanol (CAS 67-63-0)</td>
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<tr>
<td></td>
<td>TWA</td>
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<td>500 ppm</td>
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<tr>
<td>Ethanol (CAS 64-17-5)</td>
<td>TWA</td>
<td>1900 mg/m3</td>
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<tr>
<td></td>
<td></td>
<td>1000 ppm</td>
</tr>
<tr>
<td>n-Propyl Acetate (CAS 109-60-4)</td>
<td>STEL</td>
<td>1050 mg/m3</td>
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<tr>
<td></td>
<td>TWA</td>
<td>840 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200 ppm</td>
</tr>
</tbody>
</table>

Biological limit values
No biological exposure limits noted for the ingredient(s).

ACGIH Biological Exposure Indices

<table>
<thead>
<tr>
<th>Components</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol (CAS 67-63-0)</td>
<td>40 mg/l</td>
<td>Acetone</td>
<td>Urine</td>
<td>*</td>
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</table>

* - For sampling details, please see the source document.

Appropriate engineering controls
Observe Occupational Exposure Limits and minimize the risk of inhalation. Explosion-proof general and local exhaust ventilation. Provide easy access to water supply or an emergency shower.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear approved safety goggles.
Skin protection

For prolonged or repeated skin contact use suitable protective gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Other

Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Colorless liquid.

Physical state

Liquid.

Form

Liquid.

Color

Colorless.

Odor

Characteristic.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

172.4 °F (78 °C)

Flash point

55.4 °F (13.0 °C)

Evaporation rate

Not available.

Flammability (solid, gas)

Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

2 % v/v

Flammability limit - upper (%)

15 % v/v

Explosive limit - lower (%)

Not available.

Explosive limit - upper (%)

Not available.

Vapor pressure

59 hPa at 20°C

Vapor density

Not available.

Relative density

Not available.

Solubility(ies)

Solubility (water)

Moderately soluble in water.

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature

797 °F (425 °C)

Decomposition temperature

Not available.

Viscosity

Not available.

Other information

Density

0.79 g/cm³ at 20°C

10. Stability and reactivity

Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability

Material is stable under normal conditions.
Hazardous polymerization does not occur.

Possibility of hazardous reactions

Conditions to avoid
Contact with incompatible materials. Keep away from heat, sparks and open flame.

Incompatible materials

Hazardous decomposition products
Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation
May cause irritation to the respiratory system. May cause drowsiness and dizziness.

Skin contact
Prolonged skin contact may cause temporary irritation.

Eye contact
Causes serious eye irritation.

Ingestion
May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.

Information on toxicological effects

Acute toxicity
May cause respiratory irritation. Narcotic effects.

Components | Species | Test Results
-----------|---------|-------------
Ethanol (CAS 64-17-5) | 
Acute | 
Inhalation | 
LC50 | Rat | 30000 mg/m3

Skin corrosion/irritation
Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation
Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization
Not a respiratory sensitizer.

Skin sensitization
This product is not expected to cause skin sensitization.

Germ cell mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

Reproductive toxicity
This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure
May cause respiratory irritation. May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure
Not classified.

Aspiration hazard
No data available.

Chronic effects
Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. The product contains organic solvents which may be absorbed into the body by skin contact and cause permanent damage to the nervous system, including the brain.

12. Ecological information

Ecotoxicity
The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability
No data available.

Bioaccumulative potential
Not available.

Partition coefficient n-octanol / water (log Kow)

<table>
<thead>
<tr>
<th>Compound</th>
<th>log Kow</th>
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<tbody>
<tr>
<td>2-Propanol (CAS 67-63-0)</td>
<td>0.05</td>
</tr>
<tr>
<td>Ethanol (CAS 64-17-5)</td>
<td>-0.31</td>
</tr>
<tr>
<td>n-Propyl Acetate (CAS 109-60-4)</td>
<td>1.23</td>
</tr>
</tbody>
</table>

Mobility in soil
This product is water soluble and may disperse in soil.
Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. Disposal considerations

Disposal instructions: Dispose in accordance with all applicable regulations.

Hazardous waste code: D001: Waste Flammable material with a flash point <140 °F

Waste from residues / unused products: Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN1170</th>
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<tr>
<td>UN proper shipping name</td>
<td>Ethanol solutions</td>
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<tr>
<td>Transport hazard class(es)</td>
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<tr>
<td>Class</td>
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<tr>
<td>Subsidiary risk</td>
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<tr>
<td>Label(s)</td>
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<td>Packing group</td>
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<tr>
<td>Environmental hazards</td>
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</tr>
<tr>
<td>Marine pollutant</td>
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<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
<tr>
<td>Special provisions</td>
<td>24, IB2, T4, TP1</td>
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<td>Packaging exceptions</td>
<td>4b, 150</td>
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<td>Packaging non bulk</td>
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<tr>
<td>Packaging bulk</td>
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IATA

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<td>Class</td>
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</tr>
<tr>
<td>Subsidiary risk</td>
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<tr>
<td>Packing group</td>
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<td>Environmental hazards</td>
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<tr>
<td>ERG Code</td>
<td>3L</td>
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<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
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</table>

IMDG

<table>
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<tr>
<th>UN number</th>
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<tbody>
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<td>UN proper shipping name</td>
<td>ETHANOL SOLUTION</td>
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<tr>
<td>Transport hazard class(es)</td>
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<tr>
<td>Class</td>
<td>3</td>
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<tr>
<td>Subsidiary risk</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>No</td>
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<tr>
<td>EmS</td>
<td>F-E, S-D</td>
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<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

15. Regulatory information

US federal regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)
Ethanol (CAS 64-17-5) LISTED
n-Propyl Acetate (CAS 109-60-4) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance
Not listed.
SARA 311/312 Hazardous chemical
Yes
SARA 313 (TRI reporting)
Not regulated.

Other federal regulations
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.
Safe Drinking Water Act (SDWA)
Not regulated.

US state regulations
US. Massachusetts RTK - Substance List
2-Propanol (CAS 67-63-0)
Ethanol (CAS 64-17-5)
n-Propyl Acetate (CAS 109-60-4)
US. New Jersey Worker and Community Right-to-Know Act
2-Propanol (CAS 67-63-0)
Ethanol (CAS 64-17-5)
n-Propyl Acetate (CAS 109-60-4)
US. Pennsylvania Worker and Community Right-to-Know Law
2-Propanol (CAS 67-63-0)
Ethanol (CAS 64-17-5)
n-Propyl Acetate (CAS 109-60-4)
US. Rhode Island RTK
2-Propanol (CAS 67-63-0)
US. California Proposition 65
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 21-July-2015
Revision date -
Version # 01

Further information
HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
Health: 2
Flammability: 3
Physical hazard: 0


NFPA ratings

Disclaimer

Diagraph MSP, an ITW Company cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.