SECTION 1: IDENTIFICATION

Product Identifier: Micro-X Cartridge
Product Use: For the purpose of transferring ink onto porous substrates such as paper or paperboard products.

Chemical Family: Mixture
Supplier’s name and address: Diagraph MSP
5307 Meadowland Parkway
Marion IL 62959
Telephone 1-800-521-3047
E-mail msds@diagraphmsp.com
Contact person Customer Service
24 Hr. Emergency Telephone #: 800-535-5053 (US only)
+1-352-323-3500 international

SECTION 2: HAZARDS IDENTIFICATION

Classification:
- Acute aquatic toxicity Category 1
- Chronic aquatic toxicity Category 1
- Serious eye damage Category 1
- Acute toxicity, Oral Category 4
- Reproductive toxicity Category 1B
- Skin irritation Category 2
- Germ cell mutagenicity Category 2
- Specific organ toxicity – single exposure Category 3 Central nervous system
- Carcinogenicity Category 1B

Labeling: Symbols:

Signal Word: Danger

Hazard statements:
- H302 Harmful if swallowed
- H315 Causes skin irritation
- H318 Causes serious eye damage
- H336 May cause drowsiness or dizziness
- H341 Suspected of causing genetic defects
- H350 May cause cancer
- H360 May damage fertility or the unborn child
- H410 Very toxic to aquatic life with long lasting effects
Precautionary statements:
P261 Avoid breathing dust/fume/gas/vapors/spray
P264 Wash skin thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P273 Avoid release to the environment
P281 Wear personal protective equipment as required
P301+312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302+352 IF ON SKIN: Wash with plenty of soap and water
P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do and continue rinsing.
P332+313 If skin irritation occurs: Get medical attention/advice.
P391 Collect spillage
P501 Dispose of contents to an approved waste disposal plant.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS #</th>
<th>Wt. %</th>
<th>GHS Classification</th>
<th>Hazard Statements</th>
<th>Pictograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light paraffinic petroleum oil solvent extract</td>
<td>64742-05-8</td>
<td>15 – 25</td>
<td>Carcinogenicity (Cat. 1B)</td>
<td>H350</td>
<td>![ ]</td>
</tr>
<tr>
<td>Butyl benzyl phthalate</td>
<td>85-68-7</td>
<td>15 - 25</td>
<td>Reproductive toxicity (Cat. 1B)</td>
<td>H360</td>
<td>![ ] ![ ]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute aquatic toxicity (Cat. 1)</td>
<td>H400</td>
<td>![ ]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Chronic aquatic toxicity (Cat. 1)</td>
<td>H410</td>
<td>![ ]</td>
</tr>
<tr>
<td>Chrysoidine monochloride</td>
<td>532-82-1</td>
<td>0.2 – 0.5</td>
<td>Acute toxicity, Oral (Cat. 4)</td>
<td>H302</td>
<td>![ ] ![ ] ![ ]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin irritation (Cat. 2)</td>
<td>H315</td>
<td>![ ]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Serious eye damage (Cat. 1)</td>
<td>H318</td>
<td>![ ]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Germ cell mutagenicity (Cat. 2)</td>
<td>H341</td>
<td>![ ]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute aquatic toxicity (Cat. 1)</td>
<td>H400</td>
<td>![ ]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Chronic aquatic toxicity (Cat. 1)</td>
<td>H410</td>
<td>![ ]</td>
</tr>
<tr>
<td>1,4 Butanediol</td>
<td>110-63-4</td>
<td>15 - 25</td>
<td>Acute toxicity, Oral (Cat. 4)</td>
<td>H302</td>
<td>![ ]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Specific target organ toxicity – single exposure (Cat. 3), Central nervous system</td>
<td>H336</td>
<td>![ ]</td>
</tr>
<tr>
<td>Cocamide DEA</td>
<td>68603-42-9</td>
<td>1 - 5</td>
<td>Skin irritation (Cat. 2)</td>
<td>H315</td>
<td>![ ]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye irritation (Cat. 2)</td>
<td>H319</td>
<td>![ ]</td>
</tr>
<tr>
<td>Diethanolamine</td>
<td>111-42-2</td>
<td>0.5 - 2</td>
<td>Acute toxicity, Oral (Cat. 4)</td>
<td>H302</td>
<td>![ ] ![ ]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin irritation (Cat. 2)</td>
<td>H315</td>
<td>![ ]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Serious eye irritation (Cat. 2)</td>
<td>H318</td>
<td>![ ]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Specific target organ toxicity – repeat exposure (Cat. 2)</td>
<td>H373</td>
<td>![ ]</td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

Inhalation: Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Seek immediate medical attention/advice.
Skin contact: Immediately flush with plenty of water, while removing contaminated clothing. Wash contaminated clothing before reuse. When symptoms persist or in all cases of doubt, seek medical advice.

Eye contact: Flush eyes with low pressure water for at least 15 minutes while holding eyelids open. When symptoms persist or in all cases of doubt, seek medical advice.

Ingestion: Seek immediate medical attention/advice. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep victim’s head lowered (forward) to reduce the risk of aspiration.

Notes for physician: Treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

Suitable extinguishing media: Dry chemical, foam, carbon dioxide and water fog

Fire hazards/conditions of flammability: This material is not flammable.

Explosion data: Sensitivity to mechanical impact / static discharge: Not expected to be sensitive to mechanical impact or static discharge.

Special fire-fighting procedures/equipment:

Firefighters should wear protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

Hazardous combustion products: Oxides of carbon and nitrogen, irritating fumes and smoke.

NFPA Rating:

Health: 2  Flammability: 1  Instability: 0  Special Hazards: 0

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: All persons dealing with clean-up should wear the appropriate protective equipment. Do not eat, drink or smoke while participating in clean up.

Environmental precautions: Ensure spilled product does not enter drains, sewers, waterways or confined spaces. For large spills, dike the area to prevent spreading.

Spill response/cleanup: Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required.

Prohibited materials: None specific

Special spill response procedures: In case of a transportation accident, in the United States contact CHEMTREC at 1-800-424-9300 or International at 1-703-527-3887.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling: Wear suitable protective equipment during handling. Do not ingest. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling.

Conditions for safe storage: Store in a cool, dry, well-ventilated area. Store away from incompatibles, temperature extremes and out of direct sunlight. Inspect periodically for damage or leaks.

Incompatible materials: Strong oxidizing agents; strong reducing agents; acids

Special packaging materials: Always keep in containers made of the same materials as the supply container.
## SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>Value</th>
<th>Control Parameters</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light paraffinic petroleum oil solvent extract</td>
<td>64742-05-8</td>
<td>TWA</td>
<td>0.2 mg/m3</td>
<td>USA ACGIH Threshold Limit Values (TLV) Holly Refining and Marketing</td>
</tr>
</tbody>
</table>

**Ventilation and engineering measures:** Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

**Respiratory protection:** If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Confirmation of which type of respirator is most suitable for the intended application should be obtained from respiratory protection suppliers.

**Skin protection:** Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers.

**Eye / face protection:** Good industrial hygiene practices should be used when handling this product including preventing eye contact and minimizing skin contact and inhalation.

**Other protective equipment:** As needed to prevent eye contact and minimizing skin contact and inhalation.

**General hygiene considerations:** Avoid breathing vapor or mist. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove and wash contaminated clothing before re-use.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- **Physical state:** Solid
- **Appearance:** Flexible gel saturated with black ink
- **Odor:** Mild
- **Odor Threshold:** N/Av
- **Specific Gravity:** 0.9
- **pH:** Not applicable
- **Boiling point:** >300 °F
- **Melting/Freezing point:** Not available
- **Coefficient of water/oil distribution:** Not available
- **Vapor pressure (mm Hg @ 20°C / 68°F):** Not available
- **Vapor density (Air = 1):** Heavier than air
- **Evaporation rate (n-Butyl acetate = 1):** Slower than n-Butyl acetate
- **Solubility in water:** Very slightly
- **Flash Point**
  - >200 °F, TCC
- **Auto-ignition temperature:** Not applicable
- **Lower flammable limit (% by vol)**
  - Not applicable
- **Upper flammable limit (% by vol)**
  - Not applicable
- **Flame Projection Length**
  - Not available
- **Flashback observed**
  - Not available
SECTION 10: STABILITY AND REACTIVITY

Chemical stability: Stable under the recommended storage and handling conditions prescribed.
Possibility of hazardous reactions: None are known.
Conditions to avoid: Avoid heat and open flame.
Materials to avoid and incompatibility: See Section 7 (Handling and Storage) for further details.
Hazardous decomposition products: None known; refer to hazardous combustion products in Section 5.

SECTION 11: TOXICOLOGICAL INFORMATION

Target organs: Eyes, skin, liver, thymus, bone marrow and blood

Routes of exposure:

<table>
<thead>
<tr>
<th>Route</th>
<th>Inhalation:</th>
<th>Skin absorption:</th>
<th>Eyes:</th>
<th>Ingestion:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>YES</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Toxicological data: There is no available data for the mixture itself, only for the ingredients. See below for individual ingredient acute toxicity data.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Inhalation, rat</th>
<th>Oral, rat</th>
<th>LD50 Rabbit, dermal</th>
<th>Behavioral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butyl benzyl phthalate</td>
<td>No data available</td>
<td>2.330 mg/kg</td>
<td>&gt;10,000 mg/kg</td>
<td>Altered sleep time, Somnolence</td>
</tr>
<tr>
<td>1,4 Butanediol</td>
<td>No data available</td>
<td>1.525 mg/kg</td>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>

Carcinogenic status: This product contains a component/components that has/have been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP or EPA classification.

IARC classified light paraffinic petroleum oil solvent extract as carcinogenic. Prolonged and repeated lifetime skin contact with similar oils has produced skin tumors in laboratory animals. Oral and skin exposure to similar oils has produced toxic liver, thymus, bone marrow, blood (anemia) effects and death in laboratory animals. Oral and skin exposure of pregnant animals to similar oils has injured or been lethal to the unborn.

Reproductive effects: No information found; this material has not been evaluated as a mixture.

Teratogenicity: No information found; this material has not been evaluated as a mixture.

Mutagenicity: Chrysoidine monochloride showed mutagenic effects (in vitro tests).

Epidemiology: No information found; this material has not been evaluated as a mixture.

Specific target organ toxicity – single exposure: 1,4 Butanediol: May cause drowsiness or dizziness.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: No data is available on the mixture itself.
Butyl benzyl phthalate: Toxicity to fish: \( \text{LC}_{50} \) Lepomis machrochirus 1.7 mg/l 96.0 hr

\( \text{NOEC} \) Oncorhynchus mykiss 0.48 mg/l 96.0 hr

Flow through test \( \text{LC}_{50} \) Pimephales promelas 2.1 mg/ml 96.0 hr

Toxicity to aquatic invertebrates: \( \text{EC}_{50} \) Daphnia magna 1.8 mg/l 48 hr

Toxicity to algae: \( \text{EC}_{50} \) Desmodesmus subspicatus 0.31 mg/l 72 hr

Mobility: No data is available on the mixture itself.

Persistence: No data is available on the mixture itself.

Butyl benzyl phthalate: Biodegradability aerobic – Exposure time 14 d 81% - Readily biodegradable

Bioaccumulation potential: No data is available on the mixture itself.

Butyl benzyl phthalate: Lepomis machrochirus (Bluegill) 21 d -0.00973 mg/l Bioconcentration Factor (BCF): 663

Other adverse environmental effects: The ecological characteristics of this mixture have not been fully investigated. No data is available on the mixture itself, but it is expected to be very toxic to aquatic life with long lasting effects.

SECTION 13: DISPOSAL CONSIDERATIONS

Methods of disposal: Dispose of in accordance with federal, provincial and local hazardous waste regulations. Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

This material is not UN / IATA regulated.

This material is not classified as ICAO/IATA-DGR Dangerous Goods.

This material is not classified as hazardous per the IMDG Code.

This material is not classified as hazardous per ADR.

This material is not classified as hazardous per the U.S. Department of Transportation (DOT).

SECTION 15: REGULATORY INFORMATION

Inventory Status: All listed ingredients appear on the Toxic Substances Control Act (TSCA) Inventory, EINECS/ELINCS, AICS, and DSL.

This material is classified as hazardous under OSHA regulations (29CFR 19410.1200). See Section 2.

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this mixture.

SARA TITLE III: 311/312 Chronic Health Hazard Acute Health Hazard

SARA TITLE III: This mixture does not contain any chemical components with known CAS numbers that exceed the Threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
CERCLA: No chemicals in this mixture with known CAS numbers are subject to the reporting requirements of CERCLA.

RCRA CODE: None

Hazardous Air Pollutants (HAPS): Aniline <0.03%  
Diethanolamine <1.0%

US State “Right to Know” Laws: California Proposition 65:  
Aniline < 0.03%  
Butyl benzyl phthalate 15 – 25%

Other US State “Right To Know” Lists:  
The following chemicals are specifically listed by individual states:  
Butyl benzyl phthalate (MA, PA, NJ)  
Chrysoideine monochloride (PA, NJ)  
1,4 Butanediol (PA, NJ)  
Light paraffinic petroleum oil solvent extract (MA)

International Information:  
Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Canadian Controlled Products Regulations (CPR). See Section 2.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16: OTHER INFORMATION

HMIS Rating: Health: 2 *  Flammability: 1  Reactivity: 0  
* Chronic hazard 0-Minimal 1- Slight 2- Moderate 3- Serious 4- Severe

Legend:  
ACGIH American Conference of Governmental Industrial Hygienists  
CAS Chemical Abstract Services  
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act of 1980  
CFR Code of Federal Regulations  
DOT Department of Transportation  
EPA Environmental Protection Agency  
HMIS Hazardous Material Identifications System  
HSDB Hazardous Substances Data Bank  
IARC International Agency for Research on Cancer  
Inh Inhalation  
MSHA Mine Safety and Health Administration  
NFPA National Fire Protection Association  
NIOSH National Institute of Occupational Safety and Health  
NTP National Toxicology Program  
OSHA Occupational Safety and Health Administration  
PEL Permissible exposure limit  
RCRA Resource Conservation and Recovery Act  
RTECS Registry and Toxic Effects of Chemical Substances  
SARA Superfund Amendments and Reauthorization Act  
STEL Short Term Exposure Limit
References:

1. ACGIH, Threshold Limit Values and Biological Exposure Indices
2. International Agency for Research on Cancer Monographs
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases (Chempendium, HSDB and RTECs)
4. Material Safety Data Sheets for manufacturers
5. US EPA Title III List of Lists
6. California Proposition 65 List

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.