SAFETY DATA SHEET

1. Identification

Product identifier: Marker, Anchor (All Colors)

Other means of identification: None.

Recommended use: Printing ink.

Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information

Company name: Diagraph Marking & Coding

Address: 5307 Meadowland Parkway, Marion IL, 62959

USA

Telephone: 800-521-3047

E-mail: msds@diagraphmsp.com

Contact person: Customer Service

Emergency phone number: Infotrac 800-535-5053 US only

+1-352-323-3500 International

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards:

- Serious eye damage/eye irritation
  Category 2A
- Sensitization, skin
  Category 1

Environmental hazards:

- Hazardous to the aquatic environment, long-term hazard
  Category 3

OSHA defined hazards: Not classified.

Label elements

Signal word: Warning

Hazard statement: Causes serious eye irritation. May cause an allergic skin reaction. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention: Avoid breathing mist or vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response: If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. 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.

Storage: Store away from incompatible materials.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC): None known.

Supplemental information: None.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titanium dioxide</td>
<td>13463-67-7</td>
<td>10 - 35</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. Components not listed are either non-hazardous or are below reportable limits.

### 4. First-aid measures

**Inhalation**
Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact**
Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

**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 if irritation develops and persists.

**Ingestion**
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause an allergic skin reaction. Dermatitis. Rash.

**Most important symptoms/effects, acute and delayed**
Provide general supportive measures and treat symptomatically. 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. Wash contaminated clothing before reuse.

### 5. Fire-fighting measures

**Suitable extinguishing media**
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

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

**Specific hazards arising from the chemical**
During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions**
Move containers from fire area if you can do so without risk.

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

**General fire hazards**
No unusual fire or explosion hazards noted.

### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**
Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. 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.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
**Environmental precautions**

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

**7. Handling and storage**

**Precautions for safe handling**

Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**

Store in original tightly closed container. Store between 35°F (2°C) and 120°F (49°C). Store away from incompatible materials (see Section 10 of the SDS).

**8. Exposure controls/personal protection**

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium hydroxide (CAS 1336-21-6)</td>
<td>STEL</td>
<td>35 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>Copper chlorophthalocyanine (CAS 12239-87-1)</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td>Dust and mist.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2 mg/m3</td>
<td>Fume.</td>
</tr>
<tr>
<td>C.I. Pigment Green 7 (CAS 1328-53-6)</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td>Dust and mist.</td>
</tr>
<tr>
<td>Copper chlorophthalocyanine (CAS 12239-87-1)</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td>Dust and mist.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.1 mg/m3</td>
<td>Fume.</td>
</tr>
<tr>
<td>Propane -1,2 -diol (CAS 57-55-6)</td>
<td>TWA</td>
<td>10 mg/m3</td>
<td>Aerosol.</td>
</tr>
</tbody>
</table>

**US. NIOSH: Pocket Guide to Chemical Hazards**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium hydroxide (CAS 1336-21-6)</td>
<td>STEL</td>
<td>27 mg/m3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>35 ppm</td>
<td></td>
</tr>
<tr>
<td>C.I. Pigment Green 7 (CAS 1328-53-6)</td>
<td>TWA</td>
<td>18 mg/m3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>Copper chlorophthalocyanine (CAS 12239-87-1)</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td>Dust and mist.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.1 mg/m3</td>
<td>Fume.</td>
</tr>
</tbody>
</table>

**US. Workplace Environmental Exposure Level (WEEL) Guides**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propane -1,2 -diol (CAS 57-55-6)</td>
<td>TWA</td>
<td>10 mg/m3</td>
<td>Aerosol.</td>
</tr>
</tbody>
</table>

**Biological limit values**

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

**Appropriate engineering controls**

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide easy access to water supply and eye wash facilities.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Wear safety glasses with side shields (or goggles). Face shield is recommended.

**Skin protection**

- **Hand protection**
  Wear appropriate chemical resistant gloves.

**Skin protection**

- **Other**
  Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

**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.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.
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. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance
- Physical state: Liquid.
- Form: Liquid.
- Color: According to product specification.

Odor
- Odor threshold: Not available.

pH
- Not available.

Flammability (solid, gas)
- Not applicable.

Upper/lower flammability or explosive limits
- Flammability limit - lower (%): Not available.
- Flammability limit - upper (%): Not available.
- Explosive limit - lower (%): Not available.
- Explosive limit - upper (%): Not available.

Vapor pressure
- 23 hPa (17 mm Hg)

Vapor density
- Not available.

Solubility(ies)
- Solubility (water): Fully miscible.

Partition coefficient (n-octanol/water)
- Not available.

Auto-ignition temperature
- Product is not self-igniting.

Decomposition temperature
- Not available.

Viscosity
- Not available.

Other information
- Explosive properties: Not explosive.
- Oxidizing properties: Not oxidizing.

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.

Possibility of hazardous reactions
- No dangerous reaction known under conditions of normal use.

Conditions to avoid
- Contact with incompatible materials.

Incompatible materials
- Strong oxidizing agents.

Hazardous decomposition products
- Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on likely routes of exposure
- Inhalation
  - Prolonged inhalation may be harmful.

- Skin contact
  - Prolonged skin contact may cause temporary irritation. May cause an allergic skin reaction.
Eye contact
Causes serious eye irritation.

Ingestion
May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

Symptoms related to the physical, chemical and toxicological characteristics
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity
Not expected to be acutely toxic.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium hydroxide (CAS 1336-21-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>350 mg/kg</td>
</tr>
<tr>
<td>Carbon black (CAS 1333-86-4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>&gt; 3000 mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 8000 mg/kg</td>
</tr>
<tr>
<td>Propane -1,2 -diol (CAS 57-55-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>20800 mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>22000 mg/kg</td>
</tr>
<tr>
<td>Titanium dioxide (CAS 13463-67-7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>3.43 mg/l, 4 Hours</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 5000 mg/kg</td>
</tr>
</tbody>
</table>

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
May cause an allergic skin reaction.

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

Carcinogenicity
Inhalation of carbon black or titanium dioxide dust may cause cancer, however due to the physical form of the product, inhalation of dust is not likely.

IARC Monographs. Overall Evaluation of Carcinogenicity
Carbon black (CAS 1333-86-4) 2B Possibly carcinogenic to humans.
Titanium dioxide (CAS 13463-67-7) 2B Possibly carcinogenic to humans.

NTP Report on Carcinogens
Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)
Not regulated.

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

Specific target organ toxicity - single exposure
Not classified.

Specific target organ toxicity - repeated exposure
Not classified.
Aspiration hazard
Not an aspiration hazard.

Chronic effects
Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity
Harmful to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium hydroxide (CAS 1336-21-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>LC50</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.66 mg/l, 48 hours</td>
</tr>
<tr>
<td>C.I. Pigment Green 7 (CAS 1328-53-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Oncorhynchus mykiss</td>
</tr>
<tr>
<td></td>
<td></td>
<td>355.6 mg/l, 96 Hours</td>
</tr>
<tr>
<td>Chronic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>NOEC</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;= 1 mg/l, 21 days</td>
</tr>
<tr>
<td>Carbon black (CAS 1333-86-4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Leuciscus idus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;= 1000 mg/l, 96 Hours</td>
</tr>
</tbody>
</table>

Persistence and degradability
No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)
Propane -1,2 -diol (CAS 57-55-6) -0.92

Mobility in soil
The product is miscible with water. May spread in water systems.

Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations
Dispose in accordance with all applicable regulations.

Hazardous waste code
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products
Dispose of in accordance with local regulations. 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 may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not established.

15. Regulatory information

US federal regulations
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
- Ammonium hydroxide (CAS 1336-21-6) Listed.
- C.I. Pigment Green 7 (CAS 1328-53-6) Listed.
- Copper chlorophthalocyanine (CAS 12239-87-1) Listed.

SARA 304 Emergency release notification
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

- SARA 302 Extremely hazardous substance
  Not listed.
- SARA 311/312 Hazardous chemical
  Yes
  - Classified hazard categories
    - Serious eye damage or eye irritation
    - Respiratory or skin sensitization
- 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
  - Ammonium hydroxide (CAS 1336-21-6)
  - Carbon black (CAS 1333-86-4)
  - Titanium dioxide (CAS 13463-67-7)
- US. New Jersey Worker and Community Right-to-Know Act
  - Ammonium hydroxide (CAS 1336-21-6)
  - C.I. Pigment Green 7 (CAS 1328-53-6)
  - Carbon black (CAS 1333-86-4)
  - Copper chlorophthalocyanine (CAS 12239-87-1)
  - Propane -1,2 -diol (CAS 57-55-6)
  - Titanium dioxide (CAS 13463-67-7)
- US. Pennsylvania Worker and Community Right-to-Know Law
  - Ammonium hydroxide (CAS 1336-21-6)
  - C.I. Pigment Green 7 (CAS 1328-53-6)
  - Carbon black (CAS 1333-86-4)
  - Copper chlorophthalocyanine (CAS 12239-87-1)
  - Propane -1,2 -diol (CAS 57-55-6)
  - Titanium dioxide (CAS 13463-67-7)
- US. Rhode Island RTK
  - Carbon black (CAS 1333-86-4)
  - Propane -1,2 -diol (CAS 57-55-6)
  - Titanium dioxide (CAS 13463-67-7)

California Proposition 65

WARNING: This product can expose you to chemicals including Ethylene glycol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

- California Proposition 65 - CRT: Listed date/Carcinogenic substance
- California Proposition 65 - CRT: Listed date/Developmental toxin
  - Ethylene glycol (CAS 107-21-1) Listed: June 19, 2015
<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<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>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>No</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Taiwan Chemical Substance Inventory (TCSI)</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: 02-June-2017  
Revision date: 19-August-2018  
Version #: 02  
HMIS® ratings:  
- Health: 2  
- Flammability: 1  
- Physical hazard: 0  

NFPA ratings:  

Disclaimer:  
Diagraph Marking & Coding 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.