SAFETY DATA SHEET

1. Identification

Product identifier: GS-3 White

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
Telephone: 1-800-521-3047
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: Flammable liquids Category 3
Health hazards: Serious eye damage/eye irritation Category 2
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

OSHA defined hazards: Not classified.

Label elements

Signal word: Warning

Hazard statement: Flammable liquid and vapor. Causes serious eye irritation. May cause respiratory irritation.

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 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. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. In case of fire: Use appropriate media to extinguish.

Storage: Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

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

Hazard(s) not otherwise classified (HNOC): Repeated exposure may cause skin dryness or cracking.

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>Diacetone alcohol</td>
<td>123-42-2</td>
<td>20 - 40</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>13463-67-7</td>
<td>20 - 40</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

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin contact</td>
<td>Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>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.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Rinse mouth. Get medical attention if symptoms occur.</td>
</tr>
<tr>
<td>Most important symptoms/effects, acute and delayed</td>
<td>Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.</td>
</tr>
<tr>
<td>Indication of immediate medical attention and special treatment needed</td>
<td>Provide general supportive measures and treat symptomatically. 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. Keep victim under observation. Symptoms may be delayed.</td>
</tr>
</tbody>
</table>

### General information
Take off all contaminated clothing immediately. If you feel unwell, seek medical advice (show the label where possible). 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. Alcohol resistant 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 | Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. 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 | In case of fire and/or explosion do not breathe fumes. 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 | Flammable liquid and vapor. |

### 6. Accidental release measures

| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). 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. Ventilate closed spaces before entering them. 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 | Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. 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: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. 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 discharge into drains, water courses or onto the ground. |
7. Handling and storage

Precautions for safe handling
Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. 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>
</tr>
</thead>
<tbody>
<tr>
<td>Diacetone alcohol (CAS 123-42-2)</td>
<td>PEL</td>
<td>240 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 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>1-Methoxy-2-propanol (CAS 107-98-2)</td>
<td>STEL</td>
<td>100 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>50 ppm</td>
</tr>
<tr>
<td>Diacetone alcohol (CAS 123-42-2)</td>
<td>TWA</td>
<td>50 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>
<tbody>
<tr>
<td>1-Methoxy-2-propanol (CAS 107-98-2)</td>
<td>STEL</td>
<td>540 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>360 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100 ppm</td>
</tr>
<tr>
<td>Diacetone alcohol (CAS 123-42-2)</td>
<td>TWA</td>
<td>240 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 ppm</td>
</tr>
</tbody>
</table>

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

Exposure guidelines

US - California OELs: Skin designation
1-Methoxy-2-propanol (CAS 107-98-2) Can be absorbed through the skin.

Appropriate engineering controls
Explosion-proof general and local exhaust ventilation. 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 eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear approved safety goggles. Wear face shield if there is risk of splashes.

Skin protection
Hand protection
Wear appropriate chemical resistant gloves. Nitrile gloves are recommended. Full contact: Use gloves classified protection index 3 with breakthrough time of 120 minutes. Minimum glove thickness 0.4 ± 0.05 mm.

Skin protection
Other
Wear suitable protective clothing.
Respiratory protection  When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards  Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations  When using do not smoke. 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  White liquid.
Physical state  Liquid.
Form  Liquid.
Color  White.
Odor  Characteristic.
Odor threshold  Not available.
pH  Not available.
Melting point/freezing point  Not available.
Initial boiling point and boiling range  248 °F (120 °C)
Flash point  98.6 °F (37.0 °C)
Evaporation rate  Not available.
Flammability (solid, gas)  Not applicable.
Upper/lower flammability or explosive limits
  Flammability limit - lower (%)  1.4 % v/v
  Flammability limit - upper (%)  8.1 % v/v
Vapor pressure  12 hPa /9 mmHg (20 °C/68 °F)
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  518 °F (270 °C)
Decomposition temperature  Not available.
Viscosity  Not available.
Other information
  Density  1.37 g/cm³ (20 °C/68 °F)
  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  Keep away from heat, sparks and open flame. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Hazardous decomposition products  Carbon oxides. Metal oxides.
11. Toxicological information

Information on likely routes of exposure

**Inhalation**
May cause irritation to the respiratory system.

**Skin contact**
Prolonged or repeated contact may dry skin and cause dermatitis.

**Eye contact**
Causes serious eye irritation.

**Ingestion**
May cause discomfort 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. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

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>1-Methoxy-2-propanol (CAS 107-98-2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>Rabbit</td>
<td>13000 mg/kg</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Rat</td>
<td>&gt;= 6 mg/l, 4 Hours</td>
</tr>
<tr>
<td>Oral</td>
<td>Rat</td>
<td>&gt; 5000 mg/kg</td>
</tr>
<tr>
<td><strong>Titanium dioxide (CAS 13463-67-7)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation</td>
<td>Rat</td>
<td>3.43 mg/l, 4 Hours</td>
</tr>
<tr>
<td>Oral</td>
<td>Rat</td>
<td>&gt; 5000 mg/kg</td>
</tr>
<tr>
<td><strong>Skin corrosion/irritation</strong></td>
<td>Prolonged or repeated contact may dry skin and cause irritation.</td>
<td></td>
</tr>
<tr>
<td><strong>Serious eye damage/eye irritation</strong></td>
<td>Causes serious eye irritation.</td>
<td></td>
</tr>
</tbody>
</table>

**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**
Not classified. 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**
Titanium dioxide (CAS 13463-67-7) 2B Possibly carcinogenic to humans.

**NTP Report on Carcinogens**
Not listed.

Not regulated.

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

**Specific target organ toxicity - single exposure**
May cause respiratory irritation.

**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.

**Further information**
No other specific acute or chronic health impact noted.
12. Ecological information

Ecotoxicity
The product is 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 is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)
Diacetone alcohol (CAS 123-42-2) -0.098

Mobility in soil
The product is insoluble in water. Expected to have low mobility in soil.

Other adverse effects
None known.

13. Disposal considerations

Disposal instructions
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

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

Hazardous waste code
Dispose of in accordance with all applicable regulations.

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.

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

UN number UN1210
UN proper shipping name Printing ink
Transport hazard class(es)
Class 3
Subsidiary risk -
Label(s) 3
Packing group III
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions B1, IB3, T2, TP1
Packaging exceptions 150
Packaging non bulk 173
Packaging bulk 242

IATA

UN number UN1210
UN proper shipping name Printing ink
Transport hazard class(es)
Class 3
Subsidiary risk -
Packing group III
Environmental hazards No.
ERG Code 3L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1210
UN proper shipping name PRINTING INK
Transport hazard class(es)
Class 3
Subsidiary risk -
Packing group III
Environmental hazards No.
EmS F-E, S-D
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

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.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not 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
Classified hazard categories
Flammable (gases, aerosols, liquids, or solids)
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

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
1-Methoxy-2-propanol (CAS 107-98-2)
Diacetone alcohol (CAS 123-42-2)
Titanium dioxide (CAS 13463-67-7)

US. New Jersey Worker and Community Right-to-Know Act
1-Methoxy-2-propanol (CAS 107-98-2)
Diacetone alcohol (CAS 123-42-2)
Titanium dioxide (CAS 13463-67-7)

US. Pennsylvania Worker and Community Right-to-Know Law
1-Methoxy-2-propanol (CAS 107-98-2)
Diacetone alcohol (CAS 123-42-2)
Titanium dioxide (CAS 13463-67-7)

US. Rhode Island RTK
1-Methoxy-2-propanol (CAS 107-98-2)
Diacetone alcohol (CAS 123-42-2)
Titanium dioxide (CAS 13463-67-7)

California Proposition 65
This product can expose you to 1,4-Dioxane, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance
1,4-Dioxane (CAS 123-91-1) Listed: January 1, 1988
California Proposition 65 - CRT: Listed date/Developmental toxin
Toluene (CAS 108-88-3) Listed: January 1, 1991
US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))
1-Methoxy-2-propanol (CAS 107-98-2)

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>
</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

<table>
<thead>
<tr>
<th>Issue date</th>
<th>13-April-2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision date</td>
<td>13-August-2018</td>
</tr>
<tr>
<td>Version #</td>
<td>02</td>
</tr>
<tr>
<td>HMIS® ratings</td>
<td>Health: 2</td>
</tr>
<tr>
<td></td>
<td>Flammability: 3</td>
</tr>
<tr>
<td></td>
<td>Physical hazard: 0</td>
</tr>
<tr>
<td>NFPA ratings</td>
<td>2 3 0</td>
</tr>
</tbody>
</table>

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.