SAFETY DATA SHEET

A-A-56032  Type I, Type II & Type III

1. PRODUCT AND COMPANY INFORMATION

PRODUCT NAME:  Ink Marking, Epoxy Base.  Base Component
Colors:  Listed in Section 16

Recommended Use:  Marking and stenciling.

COMPANY INFORMATION
MACH-DYNAMICS®  Cage Code 1RRC4
494 Main Street
Susquehanna, PA 18847
Phone:  (570) 213-5603
Fax:  (570) 213-5574
Contact:  Mark Gingerella

24 HR. EMERGENCY TELEPHONE NUMBER
(US Transportation):  +1 (570) 213-5603 ext. 4
(International Transportation):  +001 (570) 213-5603 ext. 4

Contact:  Mark Gingerella
http://www.mach-dynamics.com

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION:
Skin corrosion/irritation  Category 3
Serious eye damage/eye irritation  Category 2A
Specific target organ toxicity (single exposure)  Category 2

GHS label elements, including precautionary statement

Pictogram

Signal Word  WARNING

Hazard Statements
H313 May be harmful in contact with skin.
H316 Causes mild skin irritation.
H371 May cause damage to organs.

Precautionary Statements
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305 + 351 + 338 IF IN EYES:  Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P311 IF exposed or concerned: Call a Poison Center or doctor/physician.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
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 Number</th>
<th>EC Number</th>
<th>Weight %</th>
<th>TSCA Inventory (04/2018) Active/Inactive</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-(2-Butoxyethoxy) ethanol</td>
<td>112-34-5</td>
<td>203-961-6</td>
<td>20-30</td>
<td>Active</td>
</tr>
<tr>
<td>Medium Aliphatic Naphtha</td>
<td>64742-88-7</td>
<td>265-191-7</td>
<td>0-3</td>
<td>Active</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

**EYES:** Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Consult a physician.

**SKIN:** Flush skin with soap and water while removing contaminated clothing. Consult a physician. Do not reuse clothing or shoes until thoroughly cleaned.

**INGESTION:** Never give anything by mouth to an unconscious person. Rinse mouth with 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**
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

**Indication of any immediate medical attention and special treatment needed**

**Note to physician:** Treat symptomatically.

5. FIRE FIGHTING MEASURES

**SUITABLE EXTINGUISHING MEDIA:** Use water fog, multipurpose foam, dry chemical, or CO2.

**SPECIFIC HAZARDS IN CASE OF FIRE:** Fight as volatile liquid fire.

**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

SHELF LIFE: Recommended use within 12 months. Refrigeration will extend shelf life.

Precautions for safe handling: Avoid contact with eyes. Wash face, hands, and any exposed skin thoroughly after handling. Do not eat, drink or 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/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>
<tbody>
<tr>
<td>2-(2-butoxyethoxy) ethanol 112-34-5</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>Medium Aliphatic Naphtha 64742-88-7</td>
<td>TWA 100 PPM</td>
<td>TWA 500 PPM TWA 2900 mg/m³</td>
<td>IDLH 2000 mg/m³ TWA 350 PPM TWA 1800 mg/m³</td>
</tr>
</tbody>
</table>

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.

### 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>Mild</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>&gt; 116°C (&gt; 240°F) Tag Closed Cup</td>
<td>butyl acetate = 1</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>&lt; 1</td>
<td></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>1.35 – 1.48</td>
<td>water = 1</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Slight</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>30,000 – 40,000 cps</td>
<td></td>
</tr>
<tr>
<td>VOC content (%)</td>
<td>24 – 27%</td>
<td></td>
</tr>
<tr>
<td>VOC content</td>
<td>2.7 – 3.3 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 eye irritation.

**Skin contact:** Causes skin irritation.

**Inhalation:** May cause respiratory irritation.

**Ingestion:** May be harmful if swallowed.

### COMPONENT INFORMATION
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: No ingredient is listed as a carcinogen.

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
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>2-(2-butoxyethoxy) ethanol 112-34-5</td>
<td>LC50 – Desmodesmus suspicatus - &gt;100 mg/l – 24hrs</td>
<td>LC50 – Lepomismacrochirus – 1300 mg/l – 96h</td>
<td>LC50 – Pseudomonas putida – 1170 mg/l – 16hr</td>
<td>EC50 – Daphnia magna – &gt;100 mg/l – 48hr</td>
</tr>
<tr>
<td>Medium Aliphatic Naphtha 64742-88-7</td>
<td>No Data</td>
<td>No Data</td>
<td>No Data</td>
<td>No Data</td>
</tr>
</tbody>
</table>

Persistence/Degradability: Not determined

Bioaccumulation: Not determined

Mobility: Not determined

Other Adverse Effects: No data available

13. DISPOSAL INFORMATION

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.
14. TRANSPORT INFORMATION

DOT
UN number None
Proper shipping name Not Regulated
Hazard class None
Packing group None
ERG# 129

IATA
UN number None
Proper shipping name Not Regulated
Hazard class None
Packing group None

IMDG
UN number None
Proper shipping name Not Regulated
Hazard class None
Packing group None
Marine pollutant No

*** MACH-DYNAMICS verifies that the material was supplied and shipped in the proper packages in accordance with DOT and federal regulations that are applicable to the mode of transportation selected. The shipper must verify that the packaging supplied is acceptable to be re-shipped in per the federal regulations applicable to the mode of transportation for re-shipment. Regulations may change depending on mode of transportation selected.***

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>2-(2-butoxyethoxy) ethanol</td>
<td>NO</td>
<td>A, C</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>Medium Aliphatic Naphtha</td>
<td>NO</td>
<td>A, F</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 Proposition 65 Components: Chemicals known to the State of California to cause birth defects or other reproductive harm: None

16. OTHER INFORMATION
HAMIS RATING

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>2</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>*</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
</tr>
<tr>
<td>Personal Protection</td>
<td>tbd</td>
</tr>
</tbody>
</table>

DISCLAIMER: To the best of MACH-DYNAMICS knowledge, all information, recommendations, and suggestions appearing herein concerning this product are taken from sources or based upon data believed to be reliable. Although reasonable care has been taken in the preparation of this information, MACH-DYNAMICS extends no warranties or guarantees, express or implied, makes no representations and assumes no responsibility as to the accuracy, reliability or completeness of the information presented. MACH-DYNAMICS assumes no liability arising out of the use of the product by others.

The conditions or methods of handling, storage, use and disposal of the product are beyond MACH-DYNAMICS control. The information provided herein may not be valid for this product if it is used in combination with any other materials or process. It is the user’s responsibility to determine the suitability of the product, review the information provided herein, assess the safety and toxicity of the product and to comply with all applicable laws and regulations. For this and other reasons, MACH-DYNAMICS does not assume responsibility and expressly disclaims liability for any loss damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

<table>
<thead>
<tr>
<th>Color</th>
<th>17038, 27038, 37030, 37038</th>
<th>White: 17875, 17925, 27875, 37875, 37925</th>
<th>All Grey</th>
<th>Blue</th>
<th>Blue #15102</th>
<th>Blue #15123</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Blue #15092</td>
<td>Blue #35190</td>
<td>Blue #33182</td>
<td>Blue #33392</td>
<td>Violet</td>
<td></td>
</tr>
<tr>
<td>Brown</td>
<td>Brown #30117</td>
<td>Brown #20059</td>
<td>Green #34031</td>
<td>Green #14403</td>
<td>Green #34540</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>#68271</td>
<td>Gold #17043</td>
<td>Brown #30257</td>
<td>Red #11140</td>
<td>Red #11105</td>
<td></td>
</tr>
<tr>
<td>Brown</td>
<td>Brown #20059</td>
<td>Blue #35190</td>
<td>Blue #15123</td>
<td>Orange #12199</td>
<td>Green #34230</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>#32246</td>
<td>Yellow #33538</td>
<td>Green #14193</td>
<td>Orange #22510</td>
<td>Red #21105</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>#12250</td>
<td>Orange #12300</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Color Black #17038 and Color White #17875 are RoHS3 Directive 2015/863 compliant.

To the best of MACH-DYNAMICS knowledge; and thus based on the data provided by our raw material providers, the following colors of our A-A-56032 contain less than the permissible levels of Cadmium, Mercury, Lead, Polybrominated Biphenyls, Polybrominated Diphenyl Ethers and Hexavalent Chromium as specified by EU Directive 2011/65/EC on the “Restriction of Hazardous Substances” (RoHS) unless otherwise noted. Physical test data for the homogeneous mixture has not been acquired.

The following A-A-56032 colors contain less than the volume of REACH Substances of Very High Concern list as of June, 2014 unless otherwise noted, along with the % by weight of the affected product if applicable.

A-A-56032 Black, all shades
A-A-56032 White, all shades.
SAFETY DATA SHEET

A-A-56032 Type I, Type II & Type III, Catalyst

1. PRODUCT AND COMPANY INFORMATION

Colors: Listed in Section 16

Recommended Use: Marking and stenciling.

COMPANY INFORMATION
MACH-DYNAMICS® Cage Code 1RRC4
494 Main Street
Susquehanna, PA 18847
Phone: (570) 213-5603
Fax: (570) 213-5574
Contact: Mark Gingerella

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

GHS CLASSIFICATION:
Flammable Liquids Category 2
Aspiration hazard Category 1
Acute toxicity – Oral Category 4
Acute toxicity – Inhalation Category 3
Serious eye damage/eye irritation Category 1
Skin corrosion/irritation Category 1B
Skin sensitivity Category 1B
Specific target organ toxicity (repeated exposure) Category 2
Specific target organ toxicity (single exposure) Category 3
Reproductive toxicity Category 2
Chronic aquatic toxicity Category 3

GHS label elements, including precautionary statement

Pictogram

Signal Word DANGER

Hazard Statements
H225 Highly flammable liquid and vapor.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H361 Suspected of damaging fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H402 Harmful to aquatic life.

**Precautionary Statements**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P235 Keep cool.
P240 Ground/bond container and receiving equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352 IF ON SKIN: Wash with plenty of water.
P303+P351+P361 IF ON SKIN (or hair): Rinse continuously with water for several minutes.
Remove/Take off immediately all contaminated clothing.
P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.
P370 +P378 In case of fire: Use Water spray, CO2, dry chemical, or alcohol resistant foam to Extinguish.
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 Number</th>
<th>EC Number</th>
<th>Weight %</th>
<th>TSCA Inventory (04/2018)</th>
<th>Active/Inactive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Butanol</td>
<td>71-36-3</td>
<td>200-751-6</td>
<td>15 - 30</td>
<td>Active</td>
<td></td>
</tr>
<tr>
<td>2-((2-Butoxyethoxy) ethanol</td>
<td>112-34-5</td>
<td></td>
<td>5 - 20</td>
<td>Active</td>
<td></td>
</tr>
</tbody>
</table>
4. 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: 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
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

Indication of any immediate medical attention and special treatment needed
Note to physician: Treat symptomatically.

5. FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Use water fog, multipurpose foam, dry chemical, or CO2.

SPECIFIC HAZARDS IN CASE OF FIRE: Fight as volatile liquid fire.

HAZARDOUS COMBUSTION PRODUCTS: Carbon oxides, Nitrogen oxides, ammonia.

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

SHELF LIFE: Recommended use within 12 months. Refrigeration will extend shelf life.

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/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>
<tbody>
<tr>
<td>1-Butanol CAS 71-36-3</td>
<td>TWA 20 PPM</td>
<td>TWA 100 PPM</td>
<td>IDLH 1400 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 300 mg/m³</td>
<td>TWA 50 PPM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(skin)</td>
<td>TWA 150 mg/m³</td>
</tr>
<tr>
<td>2-(2-butoxyethoxy) ethanol 112-34-5</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>1-methoxy-2-propanol CAS 107-98-2</td>
<td>TWA: 100 ppm</td>
<td>TWA 100 PPM</td>
<td>TWA 100 PPM</td>
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<tr>
<td></td>
<td>STEL: 150 ppm</td>
<td>TWA 360 mg/m³</td>
<td>TWA 360 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 150 PPM</td>
<td>STEL 150 PPM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 540 mg/m³</td>
<td>STEL 540 mg/m³</td>
</tr>
<tr>
<td>Toluene CAS 108-88-3</td>
<td>TWA: 20 ppm</td>
<td>TWA 100 PPM</td>
<td>TWA 100 PPM</td>
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<tr>
<td></td>
<td></td>
<td>TWA 375 mg/m³</td>
<td>TWA 375 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 150 PPM</td>
<td>STEL 150 PPM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 560 mg/m³</td>
<td>STEL 560 mg/m³</td>
</tr>
<tr>
<td>Diethylaminetriamine CAS 111-40-0</td>
<td>Not Established</td>
<td>Not Established</td>
<td>TWA 1 PPM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TWA 4 mg/m³ (skin)</td>
</tr>
<tr>
<td>2,4,6-tris(dimethylaminomethyl) phenol CAS 90-72-2</td>
<td>Not Established</td>
<td>Not Established</td>
<td>Not Established</td>
</tr>
</tbody>
</table>

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.

### 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>Solvent</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>40.6°C (105°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>1.0 – 1.4</td>
<td>water = 1</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Appreciable (&gt;10 %)</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>15,000 – 25,000</td>
<td>cps</td>
</tr>
<tr>
<td>VOC content (%)</td>
<td>30 – 40%</td>
<td></td>
</tr>
<tr>
<td>VOC content</td>
<td>3.2 – 3.5 lbs/gal</td>
<td></td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

Reactivity: No data

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.

Hazardous decomposition products: Ammonia. 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:** Corrosive. Can cause chemical burns.

**Inhalation:** Causes respiratory tract irritation. May cause drowsiness, dizziness, headache and nausea.

**Ingestion:** May be 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>1-Butanol CAS 71-36-3</td>
<td>= 790 mg/kg (Rat)</td>
<td>= 3400 mg/kg (Rabbit)</td>
<td>= 8000 mg/L (Rat) 4 h</td>
</tr>
<tr>
<td>2-(2-butoxyethoxy) ethanol 112-34-5</td>
<td>=2,410 mg/kg (Mouse)</td>
<td>= 2,764 mg/kg (Rabbit)</td>
<td>&gt; 2.1 mg/L (Rat) 4h</td>
</tr>
<tr>
<td>1-methoxy-2-propanol CAS 107-98-2</td>
<td>= 11,700 mg/kg (Mouse)</td>
<td>= 13,000 mg/kg (Rabbit)</td>
<td>= 10,000 mg/L (Rat) 5 h</td>
</tr>
<tr>
<td>Toluene CAS 108-88-3</td>
<td>= 5580 mg/kg (Rat)</td>
<td>= 12,196 mg/kg (Rabbit)</td>
<td>= 12,500 – 28,800 mg/L (Rat) 4 h</td>
</tr>
<tr>
<td>Diethylaminetriamine CAS 111-40-0</td>
<td>= 819 – 1430 mg/kg (Rat)</td>
<td>= 950 – 1240 mg/kg (Rabbit)</td>
<td>= 1.8 mg/L (Rat) 4 h</td>
</tr>
<tr>
<td>2,4,6-tris(dimethylaminomethyl) phenol CAS 90-72-2</td>
<td>= 2,169 mg/kg (Rat)</td>
<td>&gt; 5,000 mg/kg (estimate)</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:** No ingredient is listed as a carcinogen.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></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 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>1-Butanol CAS 71-36-3</td>
<td>No Data</td>
<td>LC50 – Pimephales promelas – 1,376 mg/L – 96h</td>
<td>No Data</td>
<td>EC50 – Daphnia magna – 1.328 mg/L – 48h</td>
</tr>
<tr>
<td>2-(2-butoxyethoxy) ethanol 112-34-5</td>
<td>LC50 – Desmodesmus suspicatus - &gt;100 mg/l – 24hrs</td>
<td>LC50 – Lepomismacrochirius – 1,300 mg/l – 96h</td>
<td>LC50 – Pseudomonas putida – 1,170 mg/l – 16hr</td>
<td>EC50 – Daphnia magna – &gt;100 mg/l – 48hr</td>
</tr>
<tr>
<td>1-methoxy-2-propanol CAS 107-98-2</td>
<td>No Data</td>
<td>LC50 - Pimephales promelas – 20,800 mg/L – 96h</td>
<td>No Data</td>
<td>EC50 - Daphnia magna – 23,300 mg/L – 48h</td>
</tr>
<tr>
<td>Toluene CAS 108-88-3</td>
<td>NOEC – Skeletonema costatum – 10 mg/L – 72h</td>
<td>LC50 – Oncorhynchus mykiss – 7.63 mg/L – 96h</td>
<td>No Data</td>
<td>EC50 – Ceriodphnia dubia – 3.78 mg/L – 48h</td>
</tr>
<tr>
<td>Diethylaminetriamine CAS 111-40-0</td>
<td>EC50 – Scenedesmus subspicatus – 592 mg/L – 96h</td>
<td>LC50 – Leuciscus idus – 430 mg/L – 96h</td>
<td>No Data</td>
<td>EC50 – Daphnia magna – 17 mg/L – 48h</td>
</tr>
<tr>
<td>2,4,6-tris(dimethylaminomethyl) phenol CAS 90-72-2</td>
<td>ErC50 – Desmodesmus subspicatus – 84 mg/L – 72h</td>
<td>LC50 – Cyprinus carpio – 175 mg/L – 96h</td>
<td>No Data</td>
<td>LC50 – daphnia – 84 mg/L – 96h</td>
</tr>
</tbody>
</table>

Persistence/Degradability: Not determined
Bioaccumulation: Not determined
Mobility: Not determined
Other Adverse Effects: No data available

13. DISPOSAL INFORMATION

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.

14. TRANSPORT 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
Proper shipping name: Printing Ink
Hazard class: 3
Packing group: III
Marine pollutant: No

*** MACH-DYNAMICS verifies that the material was supplied and shipped in the proper packages in accordance with DOT and federal regulations that are applicable to the mode of transportation selected. The shipper must verify that the packaging supplied is acceptable to be re-shipped in per the federal regulations applicable to the mode of transportation for re-shipment. Regulations may change depending on mode of transportation selected.***

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>1-Butanol</td>
<td>NO</td>
<td>F, A, C</td>
<td>YES</td>
<td>U031</td>
<td>NO</td>
</tr>
<tr>
<td>(2-(2-butoxyethoxy)ethanol)</td>
<td>NO</td>
<td>A, C</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>1-methoxy-2-propanol</td>
<td>NO</td>
<td>A, F</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>Toluene</td>
<td>NO</td>
<td>F, A, C</td>
<td>YES</td>
<td>U220</td>
<td>YES</td>
</tr>
<tr>
<td>Diethylaminetriamine</td>
<td>NO</td>
<td>F, A</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>2,4,6-tris(dimethylaminomethyl)phenol</td>
<td>NO</td>
<td>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

⚠️ WARNING: This product can expose you to chemicals including Toluene, 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.

Toluene CAS# 108-88-3

16. OTHER INFORMATION

APPROVED BY: Mark Gingerella
TITLE: President / QC Manager

<table>
<thead>
<tr>
<th>HMIS RATING</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>3</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>*</td>
</tr>
<tr>
<td>Flammability</td>
<td>3</td>
</tr>
<tr>
<td>Reactivity</td>
<td>1</td>
</tr>
<tr>
<td>Personal Protection</td>
<td>TBD</td>
</tr>
</tbody>
</table>
DISCLAIMER: To the best of MACH-DYNAMICS knowledge, all information, recommendations, and suggestions appearing herein concerning this product are taken from sources or based upon data believed to be reliable. Although reasonable care has been taken in the preparation of this information, MACH-DYNAMICS extends no warranties or guarantees, express or implied, makes no representations and assumes no responsibility as to the accuracy, reliability or completeness of the information presented. MACH-DYNAMICS assumes no liability arising out of the use of the product by others.

The conditions or methods of handling, storage, use and disposal of the product are beyond MACH-DYNAMICS control. The information provided herein may not be valid for this product if it is used in combination with any other materials or process. It is the user’s responsibility to determine the suitability of the product, review the information provided herein, assess the safety and toxicity of the product and to comply with all applicable laws and regulations. For this and other reasons, MACH-DYNAMICS does not assume responsibility and expressly disclaims liability for any loss damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

<table>
<thead>
<tr>
<th>Color</th>
<th>Code</th>
<th>Color</th>
<th>Code</th>
<th>Color</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>17038, 27038, 37030, 37038</td>
<td>White</td>
<td>17875, 17925, 27875, 37875, 37925</td>
<td>All Grey</td>
<td>Blue</td>
</tr>
<tr>
<td>Blue #15092</td>
<td>Blue #35190</td>
<td>Blue #33182</td>
<td>Blue #33392</td>
<td>Violet</td>
<td>Clear</td>
</tr>
<tr>
<td>Brown #30117</td>
<td>Brown #20059</td>
<td>Brown #30279</td>
<td>Green #34031</td>
<td>Green #14403</td>
<td>Green #34540</td>
</tr>
<tr>
<td>Orange #68271</td>
<td>Gold</td>
<td>Gold #17043</td>
<td>Brown #30257</td>
<td>Red #11140</td>
<td>Red #11105</td>
</tr>
<tr>
<td>Brown #20059</td>
<td>Brown #30257</td>
<td>Blue #35190</td>
<td>Blue #15123</td>
<td>Orange #12199</td>
<td>Green #34230</td>
</tr>
<tr>
<td>Orange #32246</td>
<td>Yellow #33538</td>
<td>Yellow #13655</td>
<td>Green #14193</td>
<td>Orange #22510</td>
<td>Red #21105</td>
</tr>
<tr>
<td>Orange #12250</td>
<td>Orange #12300</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Color Black #17038 and Color White #17875 are RoHS3 Directive 2015/863 compliant.