MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: DTG Bright BLACK Pigment Ink
Product Use: Ink-Jet Printing Ink

Company Identification

MANUFACTURER/DISTRIBUTOR
Colman and Company
5409 South West Shore Blvd.
Tampa, FL 33611

PHONE NUMBERS
Product, Safety, Health and Environmental Information: 1-800-891-1094 (8 a.m.-5 p.m. ET, M-F, U.S.A)
Transport Emergency: CHEMTREC: 1-800-424-9300 (24 hours, U.S.A)
Medical Emergency: 1-800-441-3637 (24 hours, U.S.A)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components (% by weight)

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>50-94</td>
</tr>
<tr>
<td>Aliphatic Alcohol</td>
<td>**</td>
<td>1-10</td>
</tr>
<tr>
<td>*Ethylene Glycol</td>
<td>107-21-1</td>
<td>1-10</td>
</tr>
<tr>
<td>Polyglycol Ether</td>
<td>**</td>
<td>1-10</td>
</tr>
<tr>
<td>Polymers</td>
<td>**</td>
<td>1-10</td>
</tr>
<tr>
<td>Melamine</td>
<td>**</td>
<td>1-5</td>
</tr>
<tr>
<td>Carbon Black Pigment</td>
<td>1333-86-4</td>
<td>1-5</td>
</tr>
</tbody>
</table>

*Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

Components (Remarks)

**The specific identity for each component not identified by a CAS Registry Number is withheld as a trade secret.
3. HAZARDS IDENTIFICATION

Potential Health Effects

THIS PRODUCT CAN BE USED SAFELY WHEN USED AS DIRECTED AND WHEN APPLICABLE SAFETY PRECAUTIONS ARE FOLLOWED.

POTENTIAL HEALTH EFFECTS FROM PRODUCT

Potential routes of overexposure to this product are skin contact, eye contact and inhalation of vapor.

Ingestion is not expected to be a significant route of exposure for this product under normal use conditions.

There is no toxicity data available for this specific formulation. Any potential hazards are presumed to be due to exposure to the components.

ADDITIONAL HEALTH EFFECTS

Since this mixture has not been tested as a whole to determine the hazards by all routes of exposure, information is provided for each hazardous component of the mixture to meet requirements of OSHA's Hazard Communication Standard (29 CFR 1910.1200). The effects noted occur from exposure to the pure component unless otherwise noted.

INFORMATION FOR COMPONENTS

ALIPHATIC ALCOHOL

Eye Contact - May cause slight eye irritation.

Skin Contact - May cause slight skin irritation. Not expected to be absorbed through the skin.

Inhalation - Breathing of spray or mist may cause irritation of the upper respiratory tract.

Ingestion - This material has a low order of acute oral toxicity based on animal data.

ETHYLENE GLYCOL

Eye Contact - May cause slight transient (temporary) eye irritation. Corneal injury is unlikely. Vapors or mists may cause eye irritation.

Skin Contact - Essentially nonirritating to skin. Repeated skin exposure to large quantities may result in absorption of harmful amounts.

Inhalation - At room temperature, exposure to vapors are minimal due to physical properties; higher temperatures may generate vapor levels sufficient to cause adverse effects.
Ingestion - Single dose oral toxicity is considered to be moderate. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing amounts larger than that may cause serious injury, even death.

Systemic (Other Target Organ) Effects - Excessive exposure may cause irritation to upper respiratory tract. Observations in animals include kidney and lever effects and deposition of calcium salts in various tissues after long-term dietary intake of ethylene glycol.

Cancer Information - Ethylene glycol did not cause cancer in long-term animal studies.

Teratology (Birth Defects) - Based on animal studies, ingestion of very large amounts of ethylene glycol appears to be the major and possibly only route of exposure to produce birth defects. Exposures by inhalation (tested nose-only in animals to prevent ingestion) or skin contact, the primary routes of occupational exposure, had minimal or essentially no effect on the fetus.

Reproductive Effects - Ingestion of large amounts of ethylene glycol has been shown to interfere with reproduction in animals. Specifically, growth retardation and decreased litter size in rats and mice and mating frequency in mice were observed.

POLYGLYCOL ETHER

Eye Contact - May cause slight transient (temporary) eye irritation. Corneal injury is unlikely.

Skin Contact - Prolonged or repeated exposure not likely to cause significant skin irritation. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. Prolonged or repeated exposure to very large amounts of component(s) in this product may cause narcosis (drowsiness).

Ingestion - single dose oral toxicity is considered to be low. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury.

Inhalation - Single exposure to vapors is not likely to be hazardous.

Systemic (Other Target Organ) Effects - Signs and symptoms of excessive exposure may be anesthetic or narcotic effects.

Teratology (Birth Defects) - Birth defects are unlikely. Even exposure have an adverse effect on the mother should have no effect on the fetus.

MELAMINE

Eye Contact – Direct contact with this material may cause mild eye irritation.

Skin Contact – Direct contact with this material may cause mild skin irritation.

Inhalation – Material is not expected to be harmful if inhaled.

Carcinogenicity Information
The following components are listed by IARC, NTP, OSHA or ACGIH as carcinogens.

<table>
<thead>
<tr>
<th>Material</th>
<th>IARC NTP OSHA ACGIH</th>
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<tbody>
<tr>
<td>CARBON BLACK</td>
<td>2B</td>
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</table>

4. **FIRST AID MEASURES**

First Aid

**INHALATION**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

**SKIN CONTACT**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. Consult a physician. Wash contaminated clothing before reuse.

**EYE CONTACT**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

**INGESTION**

Ingestion is not an expected route of exposure during normal use of the product. If ingested, consult a physician.

5. **FIRE FIGHTING MEASURES**

Flammable Properties

- **Flash Point**: >93.3 °C (>200 °F)
- **Method**: Closed Cup
- **Approximate Flammable Limits in Air, % by Volume**
  - **LEL**: Not Available
  - **UEL**: Not Available
- **Autoignition Temperature**: Not Available

Product is a nonflammable water-based solution.
Hazardous combustion products (gases/vapors) produced in fire can include carbon monoxide, carbon dioxide, nitrogen oxides and smoke.

Extinguishing Media

Use media appropriate for surrounding material.

Fire Fighting Instructions

This product is not flammable. Use normal firefighting procedures for the area.

6. ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Initial Containment

Dike spill.

Spill Clean Up

Soak up with absorbent material.

7. HANDLING AND STORAGE

Handling (Personnel)

Avoid contact with eyes, skin, or clothing.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal Protective Equipment

EYE/FACE PROTECTION
Wear safety glasses. Wear coverall chemical splash goggles and face shield when the possibility exists for eye and face contact due to splashing or spraying of the material.

RESPIRATORS
Respirators are not needed for normal use.

PROTECTIVE CLOTHING
If there is potential for significant dermal contact wear appropriate impervious clothing and gloves.

Applicable Exposure Limits and Exposure Data

**WATER**
- **PEL (OSHA)**: None Established
- **TLV (ACGIH)**: None Established
- **AEL * (DuPont)**: None Established
- **LD$_{50}$ (rat, oral)**: >90 mL/kg (RTECS)
- **LC$_{50}$ (rat, inhalation/4 hr.)**: No data available

**ALIPHATIC ALCOHOL**
- **PEL (OSHA)**: None Established
- **TLV (ACGIH)**: None Established
- **AEL * (DuPont)**: None Established
- **LD$_{50}$ (rat, oral)**: >5,000 mg/kg (supplier)
- **LC$_{50}$ (rat, inhalation/4 hr.)**: No data available

**ETHYLENE GLYCOL**
- **PEL (OSHA)**: None Established
- **TLV (ACGIH)**: Ceiling: 100 mg/m$^3$, aerosol
  - **AEL * (DuPont)**: 50 ppm, 8 Hr. TWA, vapor
  - **IEL (2000/39/EC)**: 52 mg/m$^3$, 20 ppm, skin
  - STEL 104 mg/m$^3$, 40 ppm
- **LD$_{50}$ (rat, oral)**: 4,700 mg/kg (RTECS)
- **LD$_{50}$ (rabbit, dermal)**: 9,530 uL/kg (RTECS)
- **LC$_{50}$ (rat, inhalation/4 hr.)**: >200 mg/m$^3$ (RTECS)

**POLYGLYCOL ETHER**
- **PEL (OSHA)**: None Established
- **TLV (ACGIH)**: None Established
- **AEL * (DuPont)**: None Established
- **LD$_{50}$ (rat, oral)**: >3,200 mg/kg (supplier)
- **LD$_{50}$ (rabbit, dermal)**: >20 mL/kg (supplier)
- **LC$_{50}$ (rat, inhalation/4 hr.)**: No data available

**POLYMERS**
- **PEL (OSHA)**: None Established
- **TLV (ACGIH)**: None Established
- **AEL * (DuPont)**: None Established
- **LD$_{50}$ (rat, oral)**: No data available
- **LC$_{50}$ (rat, inhalation/4 hr.)**: No data available

**MELAMINE**
- **PEL (OSHA)**: None Established
- **TLV (ACGIH)**: None Established
- **AEL * (DuPont)**: None Established
- **LD$_{50}$ (rat, oral)**: >5,000 mg/kg (supplier)
- **LC$_{50}$ (rat, inhalation/4 hr.)**: >20 mg/L (supplier)

**CARBON BLACK PIGMENT**
- **PEL (OSHA)**: 3.5 mg/m$^3$, 8 Hr. TWA
- **TLV (ACGIH)**: 3.5 mg/m$^3$, 8 Hr. TWA, A4 (*Not Classifiable*)
9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Form : Liquid
Color : Black
Odor : Slight
Solubility in Water : Miscible
pH : About 8
Specific Gravity : About 1

Other Information

Flash Point : >93.3 °C (>200 °F)
Method : Closed Cup
Approximate Flammable Limits in Air, % by Volume
LEL : Not Available
UEL : Not Available
Autoignition Temperature : Not Available

10. STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials

None reasonably foreseeable.

Decomposition

Decomposition does not occur during normal use.

* AEL is DuPont's Acceptable Exposure Limit. Dupont is an internationally recognized company for the testing of pigment printing inks. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.
11. TOXICOLOGICAL INFORMATION

Animal Data

No data available for product.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

No data available for product.

13. DISPOSAL CONSIDERATIONS

Waste Disposal

DO NOT DISCARD INTO ANY SEWERS, INTO ANY BODY OF WATER, OR ON THE GROUND. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local laws and regulations.

14. TRANSPORTATION INFORMATION
(Not meant to be all inclusive)

DOT (Domestic Surface, U.S.A.) : Not regulated
ICAO/IATA (Air) : Not regulated
IMO/IMDG (Ocean) : Not regulated

15. REGULATORY INFORMATION
(Not meant to be all inclusive - selected regulations represented)

U.S. Regulations
Federal Regulations

TSCA Inventory Status - All components of this product are listed, or exempt from listing, on the TSCA 8(b) chemical inventory.

TSCA Section 12(b) Export Notification - This product can contain: None

State Regulations

State Right-To-Know

Warning: This product may contain substances known to the state of California to cause cancer, birth defects or other reproductive harm.

European Union Regulations

EU Inventory Status - All components of this product are listed, or are exempt from listing, on the EINECS chemical inventory.

Transport Information - This product is not classified as dangerous within the meaning of transport regulations.

Labeling - This product does not need to be labeled in accordance with EC-Directive 1999/45/EC.

Switzerland

Switzerland VOC Regulations (Ordinance 814.018, Verordnung über die Lenkungsabgabe auf flüchtigen organischen Verbindungen, as of 28 December 2000)

This product is exempt from Swiss VOC regulations.

16. OTHER INFORMATION

HMIS® Rating

<table>
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<tbody>
<tr>
<td>Health</td>
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<tr>
<td>Flammability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reactivity</td>
<td></td>
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</tbody>
</table>

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

MSDS Contact Information

Global Product Stewardship and Regulatory Affairs
DuPont Ink Jet and Specialty Colorants
DuPont Performance Coatings
Barley Mill Plaza
Wilmington, DE (U.S.A.)
1-302-695-9682 (U.S.A.)

Revision History
18 July 2008 New MSDS

Key
ACGIH American Conference of Governmental Industrial Hygienists
AEL Acceptable Exposure Limit (DuPont)
Cmpds Compounds
DOT Department of Transportation (U.S.A.)
ET Eastern Time (U.S.A.)
EU European Union
HMIS® Hazardous Material Information System (National Paint and Coatings Association)
IARC International Agency for Research on Cancer
IATA International Air Transport Association
ICAO International Civil Aviation Organization
IMDG International Maritime Dangerous Goods
IMO International Maritime Organization
LEL or LFL Lower Explosive Limit or Lower Flammable Limit
M-F Monday through Friday
NA North America
NIOSH National Institute of Occupational Safety and Health (U.S.A.)
NOHSC National Occupational Health and Safety Commission (Worksafe Australia)
NOS Not Otherwise Specified
NTP National Toxicology Program (U.S.A.)
OEL Occupational Exposure Limit
OSHA Occupational Safety and Health Administration (U.S.A.)
PEL Permissible Exposure Limit
RTECS Registry of Toxic Effects of Chemical Substances (NIOSH)
STEL Short Term Exposure Limit
TLV Threshold Limit Value
TSCA Toxic Substances Control Act (U.S.A.)
TWA Time-weighted Average
UEL or UFL Upper Explosive Limit or Upper Flammable Limit
U.S.A. United States of America
VOC Volatile Organic Compound(s)
WEEL Workplace Environmental Exposure Level

End of MSDS