

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name	: 20-S1000
Synonyms	: Product Code : 20-S1000-L
Material uses	: Industrial applications: Ink for use in a drop-on-demand printing process.
Emergency phone	: Medical: CALL RMPDC, USA (303) 623-5716 Transporters: CALL CHEMTREC, USA (800)-424-9300
Manufacturer	: Videojet Technologies Inc., 1500 Mittel Boulevard, Wood Dale, IL, 60191-1073 U.S.A Phone: 1-800-843-3610 Fax: 1-800-582-1343 Videojet Technologies Europe BV., Strijkviertel 39, 3454 PJ De Meern, The Netherlands. Phone: 31-030-6693000 Fax: 31-030-6693060

2. COMPOSITION / INFORMATION ON INGREDIENTS

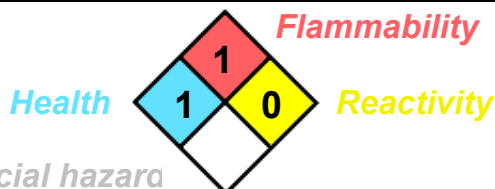
Information on hazardous ingredients

	<u>CAS No.</u>	<u>Percent (%)</u>	<u>Chemical name</u>
1)	112-27-6	50 - 65	Triethylene glycol
2)	112-35-6	13 - 20	2-(2-(2-Methoxyethoxy)ethoxy)ethanol
3)	143-22-6	20 - 35	2-(2-(2-Butoxyethoxy)ethoxy)ethanol
4)		3 - 7	Direct Black 184
5)		3 - 7	Colorant, Organometallic Compound, Chromium III, (5.8% Cr)

* Occupational Exposure Limit(s), if available, are listed in section 8

3. HAZARDS IDENTIFICATION

National Fire Protection Association (U.S.A.) :



Emergency Overview : CAUTION! EYE AND SKIN IRRITANT: Avoid contact with eyes and skin. May be harmful or fatal if swallowed. If splashed in eyes flush with water. If contacts skin flush with water and wash with mild soap. In medical emergency call Poison Control Center (USA 303-623-5716) and a physician. Read MSDS before using.

Effects and symptoms

<u>Chemical name</u>	<u>Effects and symptoms</u>
1) Triethylene glycol	Inhalation not likely under normal use conditions. Slightly irritating to the skin. Slightly irritating to the eyes. Ingestion : Exposure can cause stomach pains, vomiting and diarrhea.
2) 2-(2-(2-Methoxyethoxy)ethoxy)ethanol	Inhalation not likely under normal use conditions. Eye and skin contact with the solution may cause mild irritation. No known acute effects of this product resulting from ingestion. Prolonged or repeated contact may dry skin and cause irritation.
3) 2-(2-(2-Butoxyethoxy)ethoxy)ethanol	Inhalation not likely under normal use conditions. Slightly irritating to the skin. Absorbed through skin. Eye exposure may cause severe and permanent eye injury (blindness). No known acute effects of this product resulting from ingestion. Absorbed through skin. Harmful: danger of serious damage to health by prolonged exposure in contact with skin. May cause kidney damage and liver damage .
4) Direct Black 184	No known significant effects or critical hazards.
5) Colorant, Organometallic Compound, Chromium III, (5.8% Cr)	No known significant effects or critical hazards.

4. FIRST AID MEASURES

- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- Ingestion** : Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
- Skin contact** : In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.

5. FIRE-FIGHTING MEASURES

- Extinguishing media** : SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
- Special fire-fighting procedures** : Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
- Hazardous thermal decomposition products** : These products are carbon oxides (CO, CO₂).
- Protection of fire-fighters** : Be sure to use an approved/certified respirator or equivalent.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
- Environmental precautions and clean-up methods** : Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

7. HANDLING AND STORAGE

- Handling** : Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, reducing agents, acids.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area.
- Packaging materials** : Use original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering controls** : Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
- Hygiene measures** : Wash hands after handling compounds and before eating, smoking, using lavatory, and at the end of day.

Occupational Exposure Limits

<u>Chemical name</u>	<u>Exposure limits</u>
1) Triethylene glycol	No established limits.
2) 2-(2-(2-Methoxyethoxy)ethoxy)ethanol	No established limits.
3) 2-(2-(2-Butoxyethoxy)ethoxy)ethanol	No established limits.
4) Direct Black 184	No established limits.
5) Colorant, Organometallic Compound, Chromium III, (5.8% Cr)	1) United States ACGIH TWA 8 hours 1 mg/m ³

Personal Protective Equipment

- Respiratory system** : Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
- Skin and body** : Lab coat.

Hands : Gloves.
Eyes : Splash goggles.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance : Liquid.
Color : Black
Boiling point : The lowest known value is 132 °C. Weighted average: 236 °C. ()
Melting point : May start to solidify at -5 °C. Weighted average: -19 °C.
Specific gravity : 1.09 (Water = 1)
Vapor density : The highest known value is 5.2. The lowest known value is 1.0. (Air = 1)
Vapor pressure : The highest known value is 0 mmHg at 20°C. Weighted average: 0 mmHg at 20°C.
Evaporation rate (butyl acetate = 1) : The highest known value is 1.0. Weighted average: 0.4.
Solubility : Easily soluble in methanol, acetone.
Soluble in cold water, hot water, diethyl ether, n-octanol.
Octanol/water partition coefficient : The product is equally soluble in oil and water.
Flash point : 110 °C.
Autoignition temperature : The lowest known value is 371 °C. Weighted average: 371 °C.
Flammable limits : The lowest known value is 1.0%. The highest known value is 9.0%.
Volatility (w/w) : 89 %.
VOC Volatility (w/w) - less exempt volatile. : 89 %.

10. STABILITY AND REACTIVITY

Stability : The product is stable.
Conditions and materials to avoid : Not available.
Hazardous reactions : Reactive with oxidizing agents, reducing agents, acids.
Slightly reactive to reactive with alkalis.
Hazardous decomposition products : These products are carbon oxides (CO, CO2).

11. TOXICOLOGICAL INFORMATION

<u>Chemical name</u>	<u>Toxicological Information</u>
1) Triethylene glycol	1) LD50 Oral Rat: 17000 mg/kg 2) LD50 Oral Rabbit: 8400 mg/kg 3) LD50 Oral Guinea pig: 7900 mg/kg 4) LD50 Dermal Rabbit: 20000 mg/kg
2) 2-(2-(2-Methoxyethoxy)ethoxy)ethanol	1) LD50 Oral Rat: 11594 mg/kg 2) LD50 Dermal Rabbit: 7285 mg/kg
3) 2-(2-(2-Butoxyethoxy)ethoxy)ethanol	1) LD50 Oral Rat: 5300 mg/kg 2) LD50 Dermal Rabbit: 3450 mg/kg
4) Direct Black 184	Not available.
5) Colorant, Organometallic Compound, Chromium III, (5.8% Cr)	1) LD50 Oral Rat: 5000 mg/kg 2) LD50 Dermal Rabbit: 2000 mg/kg

12. ECOLOGICAL INFORMATION

Persistence/degradability : Not available.
Ecotoxicity : Not available.
California, VOC Content : 980 grams volatile organic / liter less water or exempt volatile.

13. DISPOSAL CONSIDERATIONS

- Disposal methods** : Waste must be disposed of in accordance with federal, state and local environmental control regulations.
- RCRA waste code** : Not available.

14. TRANSPORT INFORMATION

- UN number** : Not available.
- Proper shipping name** : Not regulated.

15. REGULATORY INFORMATION

- CERCLA** : The following product(s) is (are) listed by CERCLA:
2-(2-(2-Methoxyethoxy)ethoxy)ethanol (13 - 20%) ;
2-(2-(2-Butoxyethoxy)ethoxy)ethanol (20 - 35%) ; Colorant, Organometallic Compound, Chromium III, (5.8% Cr) (3 - 7%)
- SARA 313** : The following product(s) is (are) listed on SARA 313:
2-(2-(2-Methoxyethoxy)ethoxy)ethanol (13 - 20%) ;
2-(2-(2-Butoxyethoxy)ethoxy)ethanol (20 - 35%) ; Colorant, Organometallic Compound, Chromium III, (5.8% Cr) (3 - 7%)
- California prop. 65** : This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: 2-Ethoxyethanol (< 0.1%)

16. OTHER INFORMATION

- Date of issue** : May 19, 2003
- Prepared by** : Garth Studebaker, CSP
- Version** : 1

Notice to Reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.