

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

Product name : V101-D

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

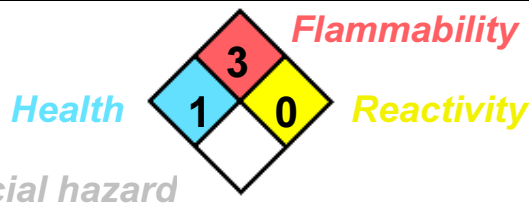
Information on hazardous ingredients

<u>CAS number</u>	<u>Percent (%)</u>	<u>Chemical name</u>
1) 78-93-3	65 - 80	2-Butanone
2) 9004-70-0	3 - 7	Nitrocellulose
3) 108-21-4	3 - 7	isopropyl acetate
4)	3 - 7	Colorant, Organometallic Compound, Chromium III (6.6% Cr)
5) 67-63-0	1 - 3	Isopropyl alcohol
6) 64-17-5	1 - 3	Ethanol
7) 123-92-2	1 - 3	Isoamyl Acetate
8) 109-60-4	1 - 3	N-Propyl acetate

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

3. HAZARDS IDENTIFICATION

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



Emergency Overview : WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL. Keep away from flame, heat, and static discharge sources. Irritant and central nervous system depressant: Avoid inhalation of vapors and contact with eyes and skin. May be harmful or fatal if swallowed. If inhaled remove to fresh air. 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 1-303-623-5716) and a physician. Read MSDS before using.

Effects and symptoms

<u>Chemical name</u>	<u>Effects and symptoms</u>
1) 2-Butanone	Irritating to eyes and respiratory system. Defatting to the skin. Harmful by inhalation, in contact with skin and if swallowed. Can cause dizziness, lightheadedness, headache, nausea, and blurred vision. Can cause CNS depression.
2) Nitrocellulose	No known significant effects or critical hazards.
3) isopropyl acetate	May cause irritation of respiratory tract, coughing, shortness of breath. Slightly irritating to the skin. Absorbed through skin. Moderately irritating to eyes. Inhalation and ingestion may cause drowsiness, dizziness, incoordination and other effects of intoxication. Exposure can cause

4) Colorant, Organometallic Compound, Chromium III (6.6% Cr)	nausea, headache and vomiting. Can cause central nervous system (CNS) depression. Medical conditions aggravated by overexposure: liver abnormalities . Prolonged or repeated skin contact can cause dermatitis. Slightly irritating to the skin. Slightly irritating to the eyes. Prolonged skin contact may cause dermatitis with drying and cracking of skin.
5) Isopropyl alcohol	May cause irritation of respiratory tract, coughing, shortness of breath. Slightly irritating to the skin. Absorbed through skin. Moderately irritating to the eyes. Ingestion : Exposure can cause nausea, headache and vomiting. Inhalation and Ingestion : Can cause CNS depression. Can cause dizziness, lightheadedness, headache, nausea, and blurred vision. May cause loss of consciousness/coma and death . Repeated or prolonged contact with irritants may cause dermatitis.
6) Ethanol	May cause irritation of respiratory tract, coughing, shortness of breath. Slightly irritating to the skin. Absorbed through skin. Moderately irritating to eyes. Inhalation and ingestion may cause drowsiness, dizziness, incoordination and other effects of intoxication. May cause loss of consciousness or coma and death . Medical conditions aggravated by overexposure: liver kidneys gastrointestinal tract respiratory system cardiovascular system and central nervous system . Causes eye irritation. Irritating to skin. Repeated or prolonged contact with irritants may cause dermatitis. Irritating to respiratory system. Long-term exposure may cause headache, nausea or weakness. Ingestion : Exposure can cause stomach pains, vomiting and diarrhea.
7) Isoamyl Acetate	May cause irritation of respiratory tract, coughing, shortness of breath. Eye and skin contact with the solution may cause mild irritation. Ingestion Can cause gastrointestinal disturbances. Inhalation and Ingestion : Can cause CNS depression. Can cause dizziness, lightheadedness, headache, nausea, and blurred vision. May cause mental confusion/disorientation and narcosis/sedation . Repeated or prolonged contact with irritants may cause dermatitis.
8) N-Propyl acetate	

4. FIRST AID MEASURES

Inhalation	: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. 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. Get medical attention if symptoms appear.
Skin contact	: In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if symptoms appear.
Eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

5. FIRE-FIGHTING MEASURES

Extinguishing media	: Use dry chemical, CO ₂ , water spray (fog) or foam.
Special fire-fighting procedures	: Highly flammable liquid and vapor. Vapor may cause flash fire. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.
Hazardous thermal decomposition products	: These products are carbon oxides (CO, CO ₂). Some metallic oxides.
Protection of fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment. Do not touch or walk through spilled material.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials) and use a non-sparking or explosion-proof means to transfer material to a sealable, appropriate container for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

7. HANDLING AND STORAGE

- Handling** : Keep container closed. Use only with adequate ventilation. Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use suitable protective equipment (section 8).
- Storage** : Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).
- Packaging materials** : Use original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

<u>Chemical name</u>	<u>Occupational exposure limits</u>
1) 2-Butanone	1) United States ACGIH TLV STEL 15 minutes 300 ppm (2004) 2) United States ACGIH TLV TWA 8 hours 200 ppm (2004) 3) United States OSHA PEL TWA 8 hours 200 ppm
2) Nitrocellulose	No established limits.
3) isopropyl acetate	1) United States ACGIH STEL 15 minutes 310 ppm (1994) 2) United States ACGIH TWA 8 hours 250 ppm (1994) 3) United States OSHA TWA 8 hours 250 ppm (1994)
4) Colorant, Organometallic Compound, Chromium III (6.6% Cr)	1) United States ACGIH TLV TWA 8 hours 0.5 mg/m ³ (2004) 2) United States OSHA PEL TWA 8 hours 0.5 mg/m ³
5) Isopropyl alcohol	1) United States ACGIH TWA 8 hours 400 ppm (1999) 2) United States ACGIH STEL 15 minutes 500 ppm (1999) 3) United States OSHA TWA 8 hours 400 ppm (1994)
6) Ethanol	1) United States ACGIH TLV TWA 8 hours 1000 ppm (2004) 2) United States OSHA PEL TWA 8 hours 1000 ppm
7) Isoamyl Acetate	1) United States ACGIH TWA 8 hours 100 ppm (1994) 2) United States ACGIH STEL 15 minutes 532 mg/m ³ (1994) 3) United States NIOSH TWA 8 hours 100 ppm (1994) 4) United States NIOSH TWA 8 hours 525 mg/m ³ (1994) 5) United States OSHA TWA 8 hours 100 ppm (1989) 6) United States OSHA TWA 8 hours 525 mg/m ³ (1989)
8) N-Propyl acetate	1) United States ACGIH STEL 15 minutes 250 ppm (1996) 2) United States ACGIH TWA 8 hours 200 ppm (1996) 3) United States OSHA TWA 8 hours 200 ppm (1993)

Engineering controls : Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Respiratory system : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Skin and body : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance : Liquid.

Color : Black.

Odor threshold : The highest known value is 100 ppm. Weighted average: 13 ppm.

Boiling point : The lowest known value is 78 °C. Weighted average: 82 °C.

Melting point : May start to solidify at -68 °C. Weighted average: -87 °C.

Specific gravity : 0.852 (Water = 1)

Vapor density : The highest known value is 4.5. The lowest known value is 1.6. (Air = 1)

Vapor pressure : The highest known value is 71 mm Hg at 20°C. Weighted average: 65 mm Hg at 20°C.

Evaporation rate (butyl acetate = 1) : The highest known value is 7.1. Weighted average: 6.3.

Solubility : Easily soluble in methanol, diethyl ether, n-octanol, acetone.
Insoluble in cold water, hot water.

Octanol/water partition coefficient : The product is much more soluble in octanol.

pH : Not applicable.

Flash point : The lowest known value is -9 °C. Weighted average: -4 °C.

Autoignition temperature : The lowest known value is 165 °C. Weighted average: 475 °C.

Flammable limits : The lowest known value is 1.0%. The highest known value is 19.0%.

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 or incompatible with the following materials: oxidizing materials, reducing materials, acids and alkalis.
Slightly reactive or incompatible with the following materials: metals.
Non-reactive or compatible with the following materials: combustible materials, organic materials and moisture.

Hazardous decomposition products : These products are carbon oxides (CO, CO₂). Some metallic oxides.

11. TOXICOLOGICAL INFORMATION

Chemical name

Toxicological information

1) 2-Butanone	1) LD50 Oral Rat: 2737 mg/kg 2) LD50 Oral Mouse: 2190 mg/kg 3) LD50 Oral Mouse: 4050 mg/kg 4) LD50 Dermal Rabbit: 6480 mg/kg 5) LC50 Inhalation vapor Rat: 23500 mg/m ³ 8 hours 6) LCLo Inhalation vapor Female. Rat Fetotoxicity and developmental abnormalities (homeostasis) in rats.: 1000 ppm 1 hours
2) Nitrocellulose	1) LD50 Oral Rat: 5000 mg/kg 2) LD50 Oral Mouse: 5000 mg/kg
3) isopropyl acetate	1) LD50 Oral Rabbit: 6946 mg/kg 2) LC50 Inhalation vapor Rat: 50600 mg/m ³ 8 hours
4) Colorant, Organometallic Compound, Chromium III (6.6% Cr)	1) LD50 Oral Rat: 2000 mg/kg 2) LD50 Dermal Rabbit: 2000 mg/kg
5) Isopropyl alcohol	1) LD50 Oral Rat: 5045 mg/kg 2) LD50 Oral Rabbit: 6410 mg/kg 3) LD50 Oral Mouse: 3600 mg/kg 4) LD50 Dermal Rabbit: 12800 mg/kg
6) Ethanol	1) LD50 Oral Rat: 7060 mg/kg 2) LD50 Oral Mouse: 3450 mg/kg 3) LD50 Oral Rabbit: 6300 mg/kg 4) LC50 Inhalation vapor Rat: 20000 ppm 10 hours
7) Isoamyl Acetate	1) LD50 Oral Rat: 16600 mg/kg 2) LD50 Oral Rabbit: 7422 mg/kg
8) N-Propyl acetate	1) LD50 Oral Rat: 9270 mg/kg 2) LD50 Oral Mouse: 8300 mg/kg 3) LD50 Oral Rabbit: 6640 mg/kg 4) LD50 Dermal Rabbit: 16000 mg/kg 5) LCLo Inhalation vapor Rat: 8000 ppm 4 hours 6) LCLo Inhalation vapor Cat: 38000 mg/m ³ 5 hours

12. ECOLOGICAL INFORMATION

Persistence/degradability	: Not available.
Ecotoxicity	: Not available.
California, VOC Content	: 765 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	: UN1210
Proper shipping name	: Printing Ink
TDG classification	: 3
Packing group	: II

15. REGULATORY INFORMATION

CERCLA	: The following substances are listed by CERCLA: 2-Butanone (65 - 80%) ; Colorant, Organometallic Compound, Chromium III (6.6% Cr) (3 - 7%) ; Isoamyl Acetate (1 - 3%)
SARA 313	: The following substance is listed on SARA 313: Colorant, Organometallic Compound, Chromium III (6.6% 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: None.

Tariff Code - harmonized system : 3215.11 Printing ink: Black.
USA ...00.60
EU ...00.00

16. OTHER INFORMATION

Date of issue : October 13, 2005
Prepared by : Garth Studebaker, CSP
Version : 5

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