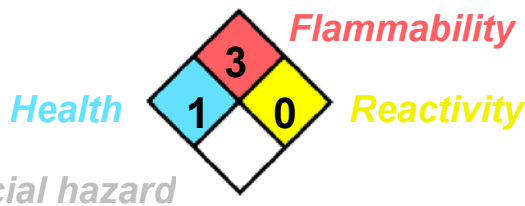


1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name : 21-8000
Synonyms : Product code: 21-8000-Q
Material uses : Industrial applications: Ink for use in a drop-on-demand printing process.
Emergency telephone number : 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. 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. May cause skin irritation. Defatting to the skin. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness. Can cause central nervous system (CNS) depression.
2) Nitrocellulose	No known significant effects or critical hazards.
3) isopropyl acetate	Irritating to respiratory system. Moderately irritating to eyes. Slightly irritating to the skin. Repeated or prolonged contact with irritants may cause dermatitis. Absorbed through skin. Can cause central nervous system (CNS) depression. Vapors may cause drowsiness and dizziness. Exposure can cause nausea, headache and vomiting. Medical conditions aggravated by over-exposure : liver abnormalities.
4) Colorant, Organometallic Compound, Chromium III (6.6% Cr)	Slightly irritating to the eyes and skin. Repeated exposure may cause skin dryness or cracking. Repeated or prolonged contact with irritants may cause dermatitis.
5) Isopropyl alcohol	Slightly irritating to the skin and respiratory system. Absorbed through skin. Irritating to eyes. Can cause central nervous system (CNS) depression. Vapors may cause drowsiness and dizziness. Can cause gastrointestinal disturbances. Repeated or prolonged contact with irritants may cause

- 6) Ethanol
dermatitis.
May be irritating to eyes, skin and respiratory system. Absorbed through skin. Vapors may cause drowsiness and dizziness. Adverse health effects could include the following: loss of consciousness or coma, death. Medical conditions aggravated by over-exposure: liver, kidneys, gastrointestinal tract, cardiovascular system, central nervous system (CNS).
- 7) Isoamyl Acetate
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.
- 8) N-Propyl acetate
Irritating to eyes. Slightly irritating to the skin and respiratory system. Can cause gastrointestinal disturbances. Can cause central nervous system (CNS) depression. Vapors may cause drowsiness and dizziness. Repeated exposure may cause skin dryness or cracking. Repeated or prolonged contact with irritants may cause dermatitis.

3. COMPOSITION/INFORMATION ON INGREDIENTS

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 limits, if available, are listed in section 8.

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, CO₂, water spray (fog) or foam.
- Special fire-fighting procedures** : Highly flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
- Unusual fire/explosion hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon oxides
metal oxide/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** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. HANDLING AND STORAGE

- Handling** : Store and use away from heat, sparks, open flame or any other ignition source. Use only with adequate ventilation. Use non-sparking tools. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Do not reuse container. Use suitable protective equipment (section 8). Refer to and follow equipment manual for operation and maintenance procedures.
- Storage** : Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Keep away from sources of ignition.
- 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 exposure limit value known.
3) isopropyl acetate	1) United States ACGIH TLV STEL 15 minutes 310 ppm (1994) 2) United States ACGIH TLV 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 TLV TWA 8 hours 100 ppm (1994) 2) United States ACGIH TLV STEL 15 minutes 532 mg/m ³ (1994) 3) United States NIOSH REL TWA 8 hours 100 ppm (1994)

Continued on next page

- 8) N-Propyl acetate
- 4) United States NIOSH REL TWA 8 hours 525 mg/m³ (1994)
 - 5) United States OSHA PEL TWA 8 hours 100 ppm (1989)
 - 6) United States OSHA PEL TWA 8 hours 525 mg/m³ (1989)
 - 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 : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

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** : Liquid.
- Color** : Black.
- Odor threshold** : Highest known value: 100 ppm. Weighted average: 100 ppm.
- Boiling point** : Lowest known value: 78 °C. Weighted average: 88 °C.
- Melting point** : May start to solidify at the following temperature: -68 °C. Weighted average: -87 °C.
- Specific gravity** : 0.852 (Water = 1)
- Vapor density** : >1.6 (Air = 1)
- Vapor pressure** : Highest known value: 71 mm Hg at 20°C. Weighted average: 65 mm Hg at 20°C.
- Evaporation rate (butyl acetate = 1)** : Highest known value: 7.1. Weighted average: 6.3.
- Solubility** : Easily soluble in the following materials: hot water, methanol, diethyl ether, n-octanol and acetone.
Soluble in the following materials: cold water.
- Flash point** : <23 °C.
- Auto-ignition temperature** : Lowest known value: 165 °C. Weighted average: 475 °C.
- Flammable limits** : Lowest known value: 1.0%. Highest known value: 19.0%.
- Volatility (w/w)** : 89 %.
- VOC Volatility (w/w) - less exempt volatile.** : 89 %.

10. STABILITY AND REACTIVITY

- Stability** : The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
- Conditions to avoid** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

<u>Chemical name</u>	<u>Toxicological information</u>
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) LD50 Oral Rat: 2737 mg/kg
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) LD50 Oral Rabbit: 6946 mg/kg
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 5) LDLo Oral Dog: 1537 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) LDLo Oral Human: 1400 mg/kg 5) LDLo Oral Dog: 5500 mg/kg 6) LD50 Oral Rat: 7060 mg/kg
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) LD50 Oral Rat: 9270 mg/kg 6) LD50 Oral Mouse: 8300 mg/kg

12. ECOLOGICAL INFORMATION

- Ecotoxicity** : No known significant effects or critical hazards.
- Heavy Metals** : Total concentration: Pb, Hg, Cd, Cr(VI) < 100 ppm
- California, VOC Content** : 764 grams volatile organic / liter less water or exempt volatile.

13. DISPOSAL CONSIDERATIONS

- Waste disposal** : Waste must be disposed of according to applicable regulations. Small quantities of waste may best be handled using a 'lab pack' service offered by a licensed waste disposal firm.

14. TRANSPORT INFORMATION

UN number : UN1210
Proper shipping name : Printing Ink
TDG Class : 3
Packing group : II

15. REGULATORY INFORMATION

CERCLA: Hazardous substances. : The following components are listed: 2-Butanone (65 - 80%); Colorant, Organometallic Compound, Chromium III (6.6% Cr) (3 - 7%); Isoamyl Acetate (1 - 3%)

SARA 313 : The following components are listed: Colorant, Organometallic Compound, Chromium III (6.6% Cr) (3 - 7%)

California Prop. 65 : The following components are listed: None.

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

16. OTHER INFORMATION

Date of issue : January 18, 2008
Prepared by : Garth Studebaker, CSP
Version : 7.02

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.

English (US)