Material Safety Data Sheet

InkSource
Make-Up Fluid
16-8655

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

Product name : 16-8655

Synonyms : Product code: 16-8655F, 16-8655Q

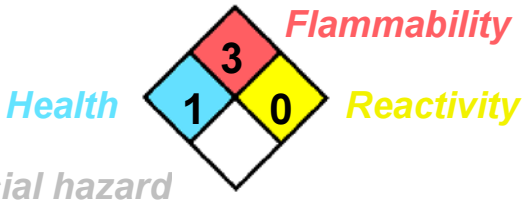
Material uses : Industrial applications: Make-Up fluid for use in a continuous ink jet process. Replaces solvents lost through evaporation during normal ink drop recycling process.

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

	Chemical name	Effects and symptoms
1)	2-Pentanone	Slightly irritating to the eyes, skin and respiratory system. Can cause central nervous system (CNS) depression. Vapors may cause drowsiness and dizziness. Harmful if swallowed. Repeated or prolonged contact with irritants may cause dermatitis.
2)	Ethanol	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).
3)	Methyl isobutyl ketone	Irritating to eyes and respiratory system. Slightly irritating to the skin. Harmful by inhalation. Can cause central nervous system (CNS) depression. Can cause gastrointestinal disturbances. Repeated exposure may cause skin dryness or cracking. Repeated or prolonged contact with irritants may cause dermatitis.
4)	N-Propyl acetate	Irritating to eyes. Slightly irritating to the skin and respiratory system. Can cause gastrointestinal disturbances. Can cause central nervous system

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		(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.
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 dermatitis.
6)	1-Propanol	Slightly irritating to the skin and respiratory system. Severely irritating to eyes. Risk of serious damage to eyes. Absorbed through skin. Can cause central nervous system (CNS) depression. Vapors may cause drowsiness and dizziness. Repeated or prolonged contact with irritants may cause dermatitis.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous ingredients

	CAS number	Percent (%)	Chemical name
1)	107-87-9	50 - 65	2-Pentanone
2)	64-17-5	20 - 35	Ethanol
3)	108-10-1	3 - 7	Methyl isobutyl ketone
4)	109-60-4	1 - 3	N-Propyl acetate
5)	67-63-0	1 - 3	Isopropyl alcohol
6)	71-23-8	0.1 - 1	1-Propanol

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, CO_2, 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

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.

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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

	Chemical name	Occupational exposure limits
1)	2-Pentanone	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 (1994)
2)	Ethanol	1) United States ACGIH TLV TWA 8 hours 1000 ppm (2004) 2) United States OSHA PEL TWA 8 hours 1000 ppm
3)	Methyl isobutyl ketone	1) United States ACGIH TWA 8 hours 50 ppm (1999) 2) United States ACGIH STEL 15 minutes 75 ppm (1999) 3) United States OSHA TWA 8 hours 100 ppm (1994)
4)	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)
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)	1-Propanol	1) United States ACGIH STEL 15 minutes 250 ppm (Skin) (1999) 2) United States ACGIH TLV 8 hours 200 ppm (Skin) (1999) 3) United States OSHA TWA 8 hours 200 ppm (1994)

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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 : Blue. [Light]

Odor threshold : Highest known value: 100 ppm. Weighted average: 100 ppm.

Boiling point : Lowest known value: 78 °C. Weighted average: 94 °C.

Melting point : May start to solidify at the following temperature: -78 °C. Weighted average: -88 °C.

Specific gravity : 0.8 (Water = 1)

Vapor density : >1.6 (Air = 1)

Vapor pressure : Highest known value: 44 mm Hg at 20°C. Weighted average: 31 mm Hg at 20°C.

Evaporation rate (butyl acetate = 1) : Highest known value: 2.8. Weighted average: 2.1.

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 : 7 °C.

Auto-ignition temperature : Lowest known value: 398 °C. Weighted average: 436 °C.

Flammable limits : Lowest known value: 1.2%. Highest known value: 19.0%.

Volatility (w/w) : 99 %.

VOC Volatility (w/w) - less exempt volatile. : 99 %.

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.

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11. TOXICOLOGICAL INFORMATION

Chemical name	Toxicological information
1) 2-Pentanone	1) LD50 Oral Rat: 1600 mg/kg 2) LD50 Oral Mammal: 3700 mg/kg 3) LD50 Oral Mouse: 1600 mg/kg 4) LD50 Dermal Rabbit: 6500 mg/kg 5) LD50 Oral Rat: 1600 mg/kg 6) LD50 Oral Mammal: 3700 mg/kg
2) 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
3) Methyl isobutyl ketone	1) LD50 Oral Rat: 2080 mg/kg 2) LD50 Oral Mouse: 1900 mg/kg 3) LD50 Oral Guinea pig: 1600 mg/kg 4) LD50 Dermal Rabbit: >3000 mg/kg 5) LD50 Oral Rat: 2080 mg/kg
4) 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
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) 1-Propanol	1) LD50 Oral Rat: 1870 mg/kg 2) LD50 Oral Rabbit: 2825 mg/kg 3) LD50 Oral Mouse: 6800 mg/kg 4) LD50 Dermal Rabbit: 5040 mg/kg 5) LDLo Oral Dog: 3000 mg/kg 6) LDLo Dermal Mammal: 5000 mg/kg 7) LD50 Oral Rat: 1870 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 : 799 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 Related Material

TDG Class : 3

Packing group : II

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15. REGULATORY INFORMATION

CERCLA: Hazardous substances. : The following components are listed: Methyl isobutyl ketone (3 - 7%)

SARA 313 : The following components are listed: Methyl isobutyl ketone (3 - 7%)

California Prop. 65 : This product contains a chemical or chemicals known to the state of California to cause cancer. The following components are listed: O-Toluidine (< 0.0000003%); Benzene (< 0.0000003%); Aniline (< 0.0000003%). This product contains a chemical or chemicals known to the state of California to cause birth defects or other reproductive harm. The following components are listed: Benzene (< 0.0000003%); Toluene (< 0.0000003%).

Tariff Code - harmonized system : 3814.00 Organic composite solvents and thinners, not elsewhere specified or included.
USA ...50.90
EU ...90.90

16. OTHER INFORMATION

Date of issue : January 11, 2008

Prepared by : Garth Studebaker, CSP

Version : 7.01

Notice to reader

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