

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

Product name : 16-8535

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 phone : Medical: CALL RMPDC, USA (303) 623-5716
Transporters: CHEMTREC, USA (800)-424-9300

Manufacturer : Videojet Technologies Europe BV., Strijkviertel 39, 3454 PJ De Meern, The Netherlands.
Phone: 31-030-6693000 Fax: 31-030-6693060
Videojet Technologies Inc., 1500 Mittel Boulevard, Wood Dale, IL, 60191-1073 U.S.A
Phone: 1-800-843-3610 Fax: 1-800-582-1343

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation : Preparation

Information on Hazardous Ingredients

<u>CAS number</u>	<u>Percent (%)</u>	<u>Chemical name</u>	<u>Classification</u>
1) 78-93-3	90 - 100	2-Butanone	F; R11 Xi; R36 R66, 67
2) 64-17-5	3 - 7	Ethanol	F; R11

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

3. HAZARDS IDENTIFICATION

Classification : F; R11
Xi; R36
R66, 67

Risk phrases : R11- Highly flammable.
R36- Irritating to eyes.
R66- Repeated exposure may cause skin dryness or cracking.
R67- Vapours may cause drowsiness and dizziness.

Safety phrases : Not applicable.

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) 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/coma and death. Medical conditions aggravated by overexposure: liver kidneys gastrointestinal tract respiratory system cardiovascular system and central nervous system.

4. FIRST AID MEASURES

- Inhalation** : If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain 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** : Wash with soap and water. Get medical attention if irritation develops.
- Eye contact** : In case of contact, immediately flush eyes with a copious amount of water for at least 15 minutes. Obtain medical attention immediately.

5. FIRE-FIGHTING MEASURES

- Extinguishing media** : In case of fire, use water spray (fog), foam, dry chemical or CO₂ extinguisher or spray.
- Special fire-fighting procedures** : Highly flammable liquid and vapour. Vapour may cause flash fire. Vapours may accumulate in low or confined areas, 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, CO₂).
- 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 (Section 8). 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 sealed, 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 earthing and bonding containers and equipment before transferring material. The engineering controls also need to keep gas, vapour or dust concentrations below any 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) Belgium Lijst Grenswaarden / Valeurs Limites STEL 15 minutes 300 ppm (2003)
	2) Belgium Lijst Grenswaarden / Valeurs Limites TWA 8 hours 200 ppm (2002)
	3) Switzerland SUVA STEL 15 minutes 1 200 ppm (Skin) (2003)
	4) Switzerland SUVA TWA 8 hours 200 ppm (Skin) (2003)
	5) Germany TRGS900 MAK STEL 15 minutes 1 200 ppm (2000)
	6) Germany TRGS900 MAK TRGS TWA 8 hours 200 ppm (Skin) (2004)
	7) Denmark Arbejdstilsynet TWA 8 hours 50 ppm (Skin) (2002)

- 8) Spain INSHT STEL 15 minutes 300 ppm (2004)
 - 9) Spain INSHT TWA 8 hours 200 ppm (2004)
 - 10) European Union EU OEL STEL 15 minutes 300 ppm (2000)
 - 11) European Union EU OEL TWA 8 hours 200 ppm (2000)
 - 12) Finland Työterveyslaitos STEL 15 minutes 100 ppm (2002)
 - 13) France INRS TWA (VME) 8 hours 200 ppm (2003)
 - 14) United Kingdom (UK) EH40-OES STEL 15 minutes 300 ppm (Skin) (2003)
 - 15) United Kingdom (UK) EH40-OES TWA 8 hours 200 ppm (Skin) (2003)
 - 16) Ireland NAOSH STEL 15 minutes 300 ppm (Skin) (2002)
 - 17) Ireland NAOSH TWA 8 hours 200 ppm (Skin) (2002)
 - 18) Italy Ministero della Salute STEL 15 minutes 300 ppm (2004)
 - 19) Italy Ministero della Salute TWA 8 hours 200 ppm (2004)
 - 20) Netherlands Nationale MAC-lijst MAC TWA (TGG) 8 hours 100 ppm (Skin) (2004)
 - 21) Netherlands Nationale MAC-lijst STEL 15 minutes 200 ppm (Skin) (2004)
 - 22) Norway Arbeidstilsynet TLV 8 hours 75 ppm (2003)
 - 23) Portugal STEL 15 minutes 300 ppm (2001)
 - 24) Portugal TWA 8 hours 200 ppm (2001)
 - 25) Sweden AFS KTV 15 minutes 100 ppm (2000)
 - 26) Sweden AFS NGV 8 hours 50 ppm (200)
- 2) Ethanol
- 1) Belgium Lijst Grenswaarden / Valeurs Limites TWA 8 hours 1000 ppm (2002)
 - 2) Switzerland SUVA STEL 15 minutes 1000 ppm (2003)
 - 3) Switzerland SUVA TWA 8 hours 500 ppm (2003)
 - 4) Germany TRGS900 MAK STEL 8 hours 4 2000 ppm (2004)
 - 5) Germany TRGS900 MAK TWA 8 hours 500 ppm (2004)
 - 6) Spain INSHT VLA-ED 8 hours 1000 ppm (2004)
 - 7) Finland Työterveyslaitos STEL 15 minutes 1300 ppm (2002)
 - 8) Finland Työterveyslaitos TWA 8 hours 1000 ppm (2002)
 - 9) France INRS VLE (STEL) 15 minutes 5000 ppm (2003)
 - 10) France INRS VME (TWA) 8 hours 1000 ppm (2003)
 - 11) United Kingdom (UK) EH40-OES TWA 8 hours 1000 ppm (2003)
 - 12) Ireland NAOSH OEL (TWA) 8 hours 1000 ppm (2002)
 - 13) Italy Ministero della Salute TWA 8 hours 1000 ppm (2004)
 - 14) Netherlands Nationale MAC-lijst MAC TWA (TGG) 8 hours 500 ppm (2004)
 - 15) Norway Arbeidstilsynet TLV 8 hours 500 ppm (2003)
 - 16) Sweden AFS KTV 15 minutes 1000 ppm (2000)
 - 17) Sweden AFS NGV 8 hours 500 ppm (2000)
 - 18) Denmark Arbejdstilsynet TWA 8 hours 1000 ppm (2002)

Engineering controls : Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours 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 or gauntlets 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 or dusts.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance	: Liquid.
Colour	: Clear
Odour threshold	: The highest known value is 100 ppm. Weighted average: 12 ppm.
Boiling point	: The lowest known value is 78 °C. Weighted average: 79 °C.
Melting point	: May start to solidify at -87 °C. Weighted average: -87 °C.
Specific gravity	: 0.8 (Water = 1)
Vapour density	: The highest known value is 2.5. The lowest known value is 1.6. (Air = 1)
Vapor pressure	: The highest known value is 71 mm Hg at 20°C. Weighted average: 70 mm Hg at 20°C.
Evaporation rate (butyl acetate = 1)	: The highest known value is 7.1. Weighted average: 6.9.
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	: -6 °C.
Autoignition temperature	: The lowest known value is 399 °C. Weighted average: 511 °C.
Flammable limits	: The lowest known value is 2.0%. The highest known value is 19.0%.
Volatility (w/w)	: 100 %.
VOC Volatility (w/w)	: 99 %.

10. STABILITY AND REACTIVITY

Stability	: The product is stable.
Conditions and materials to avoid	: Not available.
Hazardous reactions	: Slightly reactive to reactive with oxidising agents, reducing agents, acids, alkalis.
Hazardous decomposition products	: These products are carbon oxides (CO, CO ₂).

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) LC50 Inhalation vapour Rat: 23500 mg/m ³ 8 hours 6) LCLo Inhalation vapour Female Rat Foetotoxicity and developmental abnormalities (homeostasis) in rats.: 1000 ppm 1 hours
2) 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 vapour Rat: 20000 ppm 10 hours 5) LCLo Inhalation vapour Dog: 5500 ppm hours 6) LCLo Inhalation vapour Guinea pig: 21900 ppm hours

12. ECOLOGICAL INFORMATION

Persistence/degradability	: Not available.
Ecotoxicity	: Not available.
Germany water class (WGK)	: Wassergefährdungsklasse = 1

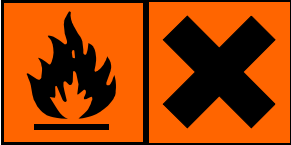
13. DISPOSAL CONSIDERATIONS

Disposal methods : Waste must be disposed of in accordance with federal, state and local environmental control regulations.

14. TRANSPORT INFORMATION

UN number : UN1210
Proper shipping name : Printing Ink Related Material
ADR/RID class : 3
Packing group : II

15. REGULATORY INFORMATION

Hazard Symbol(s) : 

Highly flammable, Irritant

Classification : F; R11
 Xi; R36
 R66, 67

Risk phrases : R11- Highly flammable.
 R36- Irritating to eyes.
 R66- Repeated exposure may cause skin dryness or cracking.
 R67- Vapours may cause drowsiness and dizziness.

Safety phrases : Not applicable.

Other EU Regulations

Child protection : Not applicable.

Tactile warning of danger : Not applicable.

National Regulations

Not available.

Other Information

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 : April 19, 2005
Prepared by : Garth Studebaker, CSP
Version : 5

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