Material Safety Data Sheet
Videojet®
Make-Up Fluid
16-5905Q

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : 16-5905Q

1.2 Relevant identified uses of the substance or mixture and uses advised against

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.

1.3 Details of the supplier of the safety data sheet

Website: www.videojet.com
Email: FluidsSupport@videojet.com

Videojet Technologies Inc., 1500 Mittel Boulevard, Wood Dale, IL, 60191-1073 U.S.A
Tel: 1-800-843-3610 Fax: 1-800-582-1343

Videojet Technologies Canada Ltd., 6500 Viscount Road, Mississauga, Ontario, L4V 1H3
Phone 1-905-673-1212 Fax: 1-905-673-8725

1.4 Emergency telephone number

Medical 3E: (US) +1 866 519 4752
3E Code: 334466

Transporters CHEMTREC: (US) +1 800 424 9300
CHEMTREC Code: CCN 23846
3E: (US) +1 866 519 4752
3E Code: 334466

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification

Flam. Liq. 2, H225	Highly flammable liquid and vapor.
Acute Tox. 3, H301	Toxic if swallowed.
Acute Tox. 3, H311	Toxic in contact with skin.
Acute Tox. 3, H331	Toxic if inhaled.
Eye Irrit. 2A, H319	Causes serious eye irritation.
STOT SE 1, H370	Causes damage to organs.
STOT SE 3, H336	May cause drowsiness or dizziness.

Ingredients of unknown toxicity : Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 0%.

Ingredients of unknown ecotoxicity : Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 0%.

2.2 Label elements

GHS label elements

Danger. Highly flammable liquid and vapor. Toxic if swallowed, in contact with skin or if inhaled. Causes serious eye irritation. Causes damage to organs. May cause drowsiness or dizziness. Do not breathe vapor. Wear eye or face protection. Wear protective gloves. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If eye irritation persists: Get medical attention. IF SWALLOWED: Immediately call a POISON CENTER or physician. IF exposed: Call a POISON CENTER or physician. Keep container tightly closed. Store in a well-ventilated place.

Hazardous ingredients : 1) butanone
2) methanol

2.3 Other hazards

Other hazards which do not result in classification : None.

SECTION 3: Composition/information on ingredients

Substance/mixture : Mixture

Product/ingredient name	CAS #	%	GHS Classification
1) butanone	78-93-3	55 - <65	FLAMMABLE LIQUIDS - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
2) methanol	67-56-1	30 - <40	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (central nervous system (CNS), optic nerve) - Category 1
3) ethanol	64-17-5	1 - <3	FLAMMABLE LIQUIDS - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A AQUATIC HAZARD (LONG-TERM) - Category 3

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Toxic if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Toxic in contact with skin.

Ingestion : Toxic if swallowed. Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following: pain or irritation watering redness

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : No specific data.

Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : Highly flammable liquid and vapor. 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.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

5.3 Advice for firefighters

Special protective actions for fire-fighters : 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.

Special protective equipment for 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : 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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 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).

6.3 Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Take precautionary measures against electrostatic discharges. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. 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. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
1) butanone	**CA Alberta Provincial (Canada, 4/2009).** 15 min OEL: 300 ppm 15 minutes. 8 hrs OEL: 200 ppm 8 hours. 8 hrs OEL: 590 mg/m³ 8 hours. 15 min OEL: 885 mg/m³ 15 minutes. **CA British Columbia Provincial (Canada, 5/2015).** TWA: 50 ppm 8 hours. STEL: 100 ppm 15 minutes. **CA Ontario Provincial (Canada, 7/2015).** TWA: 200 ppm 8 hours. STEL: 300 ppm 15 minutes. **CA Quebec Provincial (Canada, 1/2014).** TWAEV: 50 ppm 8 hours. TWAEV: 150 mg/m³ 8 hours. STEV: 100 ppm 15 minutes. STEV: 300 mg/m³ 15 minutes. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 300 ppm 15 minutes. TWA: 200 ppm 8 hours.
2) methanol	**CA Alberta Provincial (Canada, 4/2009). Absorbed through skin.** 8 hrs OEL: 262 mg/m³ 8 hours. 8 hrs OEL: 200 ppm 8 hours. 15 min OEL: 250 ppm 15 minutes. 15 min OEL: 328 mg/m³ 15 minutes. **CA British Columbia Provincial (Canada, 5/2015). Absorbed through skin.** TWA: 200 ppm 8 hours. STEL: 250 ppm 15 minutes. **CA Ontario Provincial (Canada, 7/2015). Absorbed through skin.** TWA: 200 ppm 8 hours. STEL: 250 ppm 15 minutes. **CA Quebec Provincial (Canada, 1/2014). Absorbed through skin.** TWAEV: 200 ppm 8 hours. TWAEV: 262 mg/m³ 8 hours. STEV: 250 ppm 15 minutes. STEV: 328 mg/m³ 15 minutes. **CA Saskatchewan Provincial (Canada, 7/2013). Absorbed through skin.** STEL: 250 ppm 15 minutes. TWA: 200 ppm 8 hours.
3) ethanol	**CA Alberta Provincial (Canada, 4/2009).** 8 hrs OEL: 1000 ppm 8 hours. 8 hrs OEL: 1880 mg/m³ 8 hours. **CA Quebec Provincial (Canada, 1/2014).** TWAEV: 1000 ppm 8 hours. TWAEV: 1880 mg/m³ 8 hours. **CA British Columbia Provincial (Canada, 5/2015).** STEL: 1000 ppm 15 minutes. **CA Ontario Provincial (Canada, 7/2015).** STEL: 1000 ppm 15 minutes. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 1250 ppm 15 minutes. TWA: 1000 ppm 8 hours.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

8.2 Exposure controls

Appropriate 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. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : 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. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Hand protection : Recommended: EN374 B, EN374 A
May be used (Short term exposure): Latex gloves. Nitrile gloves. Use gloves only once. Gloves should be replaced regularly and if there is any sign of damage to the glove material. The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
Recommended: organic vapor filter (Type A), organic vapor filter (Type AX)

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid.

Color : Clear.

Odor : Not available.

Odor threshold : Highest known value: 100 ppm. Weighted average: 45 ppm.

pH : Not applicable.

Melting point/freezing point : May start to solidify at the following temperature: -86 °C. Weighted average: -91 °C.

Initial boiling point and boiling range : Lowest known value: 64 °C. Weighted average: 73 °C.

Flash point : -3 °C.

Evaporation rate (butyl acetate = 1) : Highest known value: 7.1. Weighted average: 5.1.

Flammability (solid, gas) : Not applicable. (Liquid)

Upper/lower flammability or explosive limits : Lowest known value: 1.8%. Highest known value: 44.0%.

Vapor pressure : Highest known value: 126 mm Hg at 20°C. Weighted average: 96 mm Hg at 20°C.

Vapor density : >1.1 (Air = 1)

Relative density (Water = 1) : 0.8

Solubility(ies) : Not available.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Lowest known value: 404 °C. Weighted average: 424 °C.

Decomposition temperature : Thermally stable.

Viscosity : Not available.

Explosive properties : Not applicable. Not classified.

Oxidizing properties : Not applicable. Not classified.

9.2 Other information

Volatility (w/w) : 100 %.

VOC Volatility (w/w) : 99 %.

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

None.

10.5 Incompatible materials

None.

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
butanone	LC50 Inhalation Vapor	Rat	23500 mg/m³	8 hours
	LD50 Dermal	Rabbit	6480 mg/kg	-
	LD50 Oral	Rat	2737 mg/kg	-
methanol	LC50 Inhalation Gas.	Rat	64000 ppm	4 hours
	LD50 Dermal	Rabbit	15800 mg/kg	-
	LD50 Oral	Rat	5600 mg/kg	-
ethanol	LC50 Inhalation Gas.	Rat	20000 ppm	10 hours
	LD50 Oral	Rabbit	6300 mg/kg	-
	LD50 Oral	Rat	7060 mg/kg	-

Conclusion/Summary : Toxic if inhaled. Toxic in contact with skin. Toxic if swallowed.

Acute toxicity estimates

Route	ATE value
Oral	268 mg/kg
Dermal	804.1 mg/kg
Inhalation (vapors)	8.041 mg/l

Irritation/Corrosion

Conclusion/Summary

Skin : Not classified. No known significant effects or critical hazards.

Eyes : Causes serious eye irritation.

Respiratory : Not classified. No known significant effects or critical hazards.

Sensitization

Conclusion/Summary

Skin : Not classified. No known significant effects or critical hazards.

Respiratory : Not classified. No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : Not classified. No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : Not classified. No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : Not classified. No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
butanone methanol	Category 3 Category 1	Not applicable. Not determined	Narcotic effects central nervous system (CNS) and optic nerve

Specific target organ toxicity (repeated exposure)

Not classified. No known significant effects or critical hazards.

Aspiration hazard

Conclusion/Summary : Not classified. No known significant effects or critical hazards.

Potential chronic health effects, Other

Conclusion/Summary : No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
butanone	Acute EC50 2029 mg/l Fresh water	Algae - Pseudokirchnerella subcapitata	96 hours
	Acute EC50 308 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 2993 mg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 1240 mg/l Fresh water	Algae - Pseudokirchnerella subcapitata	96 hours
methanol	Acute EC50 22000 mg/l Fresh water	Algae - Pseudokirchnerella subcapitata	96 hours
	Acute EC50 18260 mg/l Fresh water	Daphnia - Daphnia magna	96 hours
	Acute EC50 12700000 µg/l Fresh water	Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling) - 3.07 g	96 hours
ethanol	Acute EC50 275 mg/l	Algae	72 hours
	Acute EC50 12.9 g/L Fresh water	Fish - Pimephales promelas - 30 days	96 hours
	Acute LC50 9248000 µg/l Fresh water	Daphnia - Daphnia magna - Neonate - <12 hours	48 hours
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 100 ul/L Fresh water	Daphnia - Daphnia magna - Neonate - <24 hours	21 days
	Chronic NOEC 100 ul/L Fresh water	Daphnia - Daphnia magna - Neonate - <24 hours	21 days
	Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae - 3 days	12 weeks

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Not available.				

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
butanone	-	-	Readily
methanol	-	-	Readily
ethanol	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
methanol	-0.77	<10	low
butanone	0.3	-	low
ethanol	-0.35	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Packaging

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : None.

SECTION 14: Transport information

	UN	IMDG	IATA	Transport Canada
14.1 UN number	UN1210	UN1210	UN1210	UN1210
14.2 UN proper shipping name	Printing Ink Related Material	Printing Ink Related Material	Printing Ink Related Material	Printing Ink Related Material
14.3 Transport hazard class(es)	3 	3 	3 	3 
14.4 Packing group	II	II	II	II
14.5 Environmental hazards	No.	No.	No.	-
Additional information	-	-	-	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3).

14.6 Special precautions for user

No special measures required.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not available.

SECTION 15: Regulatory information

Tariff Code - harmonized system : 3814.00 Organic composite solvents and thinners, not elsewhere specified or included.
USA ...50.90
EU ...90.99

Chemical Weapons Convention List Schedule I Chemicals	Chemical Weapons Convention List Schedule II Chemicals	Chemical Weapons Convention List Schedule III Chemicals
Not listed	Not listed	Not listed

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms :

ATE = Acute Toxicity Estimate
DNEL = Derived No Effect Level
PNEC = Predicted No Effect Concentration

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.