

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : Niagara Yellow, CR1

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Inkjet printing

1.3. Supplier

Memjet, Ltd
61-62 Fitzwilliam Lane
Dublin 2, Ireland
T +353 1 678 0420
msds@memjet.com www.memjet.com

1.4. Emergency telephone number

For Hazardous Materials Incidents (spill, leak, fire, exposure, or accident) call:

CHEMTREC: U.S. : 1-800-424-9300 International: +1-703-527-3887 Hours of Operation: 24/7

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

No labeling applicable

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

1.3% of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)
1.3% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Glycerol	(CAS No) 56-81-5	<= 2	Not classified
Ethoxylated acetylenic diols	(CAS No) 1606-85-5	<= 2	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319
2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate	(CAS No) 9014-85-1	<= 1	Eye Dam. 1, H318 Aquatic Chronic 3, H412

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. When symptoms occur: go into open air and ventilate suspected area. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Gently wash with plenty of soap and water.

Niagara Yellow

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- First-aid measures after ingestion : If swallowed, rinse mouth with water (only if the person is conscious). Never give anything by mouth to an unconscious person. Do NOT induce vomiting unless directed to do so by medical personnel.

4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/injuries after inhalation : None under normal use.
- Symptoms/injuries after skin contact : No significant signs or symptoms indicative of any health hazard are expected to occur as a result of skin contact.
- Symptoms/injuries after eye contact : No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of eye exposure.

4.3. Immediate medical attention and special treatment, if necessary

All treatments should be based on observed signs and symptoms of distress in the patient.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
- Unsuitable extinguishing media : None known.

5.2. Specific hazards arising from the chemical

- Fire hazard : No specific fire or explosion hazard.
- Explosion hazard : Product is not explosive.
- Reactivity : No dangerous reactions known.

5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Exercise caution when fighting any chemical fire. Use extinguishing media appropriate for surrounding fire.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flame resistant/retardant clothing. Wear a self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Stop leak, if possible without risk. Take up small spills with dry chemical absorbent.

6.1.2. For emergency responders

- Emergency procedures : Stop leak if safe to do so. Wipe up with absorbent material (for example cloth).

6.2. Environmental precautions

Do not discharge into drains or the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Do not allow minor leaks or spills to accumulate on walking surfaces. Absorb and/or contain spill with inert material, then place in suitable container.
- Methods for cleaning up : Small spills: Wipe up with absorbent material (e.g. cloth, fleece).

6.4. Reference to other sections

Section 7: safe handling. Section 8: personal protective equipment. Section 13: disposal information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
- Hygiene measures : Always wash your hands immediately after handling this product, and once again before leaving the workplace.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in original container. Keep container tightly closed and in a well-ventilated place.

Niagara Yellow

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Glycerol (56-81-5)		
ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
ACGIH	Remark (ACGIH)	URT irr
OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total) 5 mg/m ³ (respirable fraction)
Ethoxylated acetylenic diols (1606-85-5)		
Not applicable		
2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)		
Not applicable		

8.2. Appropriate engineering controls

Appropriate engineering controls : Avoid creating mist or spray. Avoid splashing. Either local exhaust or general room ventilation is usually required.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:

Wear protective gloves.

Eye protection:

Eye protection should only be necessary where liquid could be splashed or sprayed.

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Use air-purifying respirator equipped with particulate filtering cartridges.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Yellow liquid.
Color	: Yellow
Odor	: Odorless
Odor threshold	: No data available
pH	: 7.1
Melting point	: No data available
Freezing point	: No data available
Boiling point	: > 93.3 °C
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: > 1 (Air = 1)
Relative density	: No data available
Solubility	: Miscible with water
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive limits	: Not applicable
Explosive properties	: Product is not explosive.
Oxidizing properties	: No oxidizing properties.

Niagara Yellow

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Do not store with incompatible materials.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

Thermal decomposition generates: Sulfur oxides. Carbon oxides (CO, CO₂).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Dermal

Acute toxicity : Not classified. (Based on available data, the classification criteria are not met)

Glycerol (56-81-5)	
LD50 oral rat	5570 mg/kg
ATE US (oral)	5570.000 mg/kg body weight
Ethoxylated acetylenic diols (1606-85-5)	
LD50 oral rat	1230 mg/kg (Based on similar product)
ATE US (oral)	1230.000 mg/kg body weight
2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 2 mg/l/4h

Skin corrosion/irritation : Not classified. (Based on available data, the classification criteria are not met)

Serious eye damage/irritation : Not classified. (Based on available data, the classification criteria are not met)

Respiratory or skin sensitization : Not classified. (Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified. (Based on available data, the classification criteria are not met)

Carcinogenicity : Not classified. (Based on available data, the classification criteria are not met)

Reproductive toxicity : Not classified. (Based on available data, the classification criteria are not met)

Specific target organ toxicity – single exposure : Not classified. (Based on available data, the classification criteria are not met)

Specific target organ toxicity – repeated exposure : Not classified. (Based on available data, the classification criteria are not met)

2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)	
NOAEL (subacute,oral,animal/male,28 days)	200 mg/kg body weight

Aspiration hazard : Not classified. (Based on available data, the classification criteria are not met)

Symptoms/injuries after inhalation : None under normal use.

Symptoms/injuries after skin contact : No significant signs or symptoms indicative of any health hazard are expected to occur as a result of skin contact.

Symptoms/injuries after eye contact : No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of eye exposure.

SECTION 12: Ecological information

12.1. Toxicity

Glycerol (56-81-5)	
LC50 fish 1	68 - 72 mg/l

Niagara Yellow

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)

LC50 fish 1	52.5 mg/l juvenile S. maximus
EC50 Daphnia 1	166 mg/l
ErC50 (algae)	15 mg/l
NOEC chronic algae	1 mg/l

12.2. Persistence and degradability

Niagara Yellow

Persistence and degradability	Not established.
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Glycerol (56-81-5)

Persistence and degradability	Readily biodegradable.
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2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)

Persistence and degradability	Not readily biodegradable.
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12.3. Bioaccumulative potential

Niagara Yellow

Bioaccumulative potential	Not established.
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2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)

Bioconcentration factor (BCF REACH)	< 24
Bioaccumulative potential	Not expected to bioaccumulate.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects	: Avoid release to the environment.
Effect on the global warming	: No known effects from this product.
GWPmix comment	: No known effects from this product.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods	: Do not dispose in household garbage. Dispose in a safe manner in accordance with local/national regulations.
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SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not applicable

Transportation of Dangerous Goods

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Glycerol (56-81-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Ethoxylated acetylenic diols (1606-85-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Niagara Yellow

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

15.2. International regulations

CANADA

Glycerol (56-81-5)
Listed on the Canadian DSL (Domestic Substances List)
Ethoxylated acetylenic diols (1606-85-5)
Listed on the Canadian DSL (Domestic Substances List)
2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Glycerol (56-81-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Ethoxylated acetylenic diols (1606-85-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Glycerol (56-81-5)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on Taiwan National Chemical Inventory
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Ethoxylated acetylenic diols (1606-85-5)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Inventory of Existing Chemical Substances Produced or Imported in China (IECSC).
2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
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Listed on Taiwan National Chemical Inventory
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)

15.3. US State regulations

Glycerol (56-81-5)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Minnesota - Hazardous Substance List
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Washington - Permissible Exposure Limits - TWAs

Niagara Yellow

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 16: Other information

Data sources : ESIS (European chemical Substances Information System; accessed at: <http://esis.jrc.ec.europa.eu/index.php?PGM=cla>
European Chemicals Agency (ECHA) C&L Inventory database. Accessed at <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
European Chemicals Agency (ECHA) Registered Substances list. Accessed at <http://echa.europa.eu/>
European Standards: Personal Protective Equipment; accessed at: http://ec.europa.eu/enterprise/policies/european-standards/harmonised-standards/personal-protective-equipment/index_en.htm.
IPPC Air List.
IPPC Water List.
Kristen Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.
National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition.
OSHA 29 CFR 1910.1200 Hazard Communication Standard.
REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
US National Library of Medicine National Institutes of Health Haz-Map. Accessed at <http://hazmap.nlm.nih.gov>
TSCA Chemical Substance Inventory. Accessed at <http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>

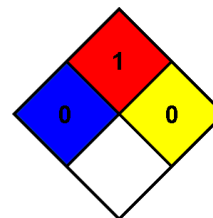
Full text of H-phrases:

H302	Harmful if swallowed
H318	Causes serious eye damage
H319	Causes serious eye irritation
H412	Harmful to aquatic life with long lasting effects

Abbreviations and acronyms:

ACGIH	(American Conference of Government Industrial Hygienists)
ATE:	Acute Toxicity Estimate
CAS	(Chemical Abstracts Service) number
EC50:	Environmental Concentration associated with a response by 50% of the test population.
GHS:	Globally Harmonized System (of Classification and Labeling of Chemicals)
IPPC:	Integrated Pollution Prevention and Control
LD50:	Lethal Dose for 50% of the test population
NOEC:	No Observable Effect Concentration
OSHA:	Occupational Safety & Health Administration
PBT:	Persistent, Bioaccumulative, Toxic
TSCA:	Toxic Substances Control Act
TWA:	Time Weighted Average

NFPA health hazard : 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product