

# ER1.0 Tigris Magenta

## Safety Data Sheet

according to US Federal Register / Vol. 77, No. 58 /

Monday, March 26, 2012 / Rules and Regulations

Date of issue: 03/10/2014

Version: 1.0

**memjet**

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

#### 1.1. Product identifier

Product form

Mixtures

Product name.

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

Use of the substance/mixture

Inkjet printing

#### 1.3. Details of the supplier of the safety data sheet

Memjet Operations, Ltd. (aka Zamtec, Ltd.)

61-62 Fitzwilliam Lane

Dublin, Ireland

T +1-858-798-3000

F +1-858-798-3044

[msds@memjet.com](mailto:msds@memjet.com)

[www.memjet.com](http://www.memjet.com)

#### 1.4. Emergency telephone number

Emergency number

CHEMTREC, U.S. : 1-800-424-9300

International: +1-703-527-3887

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification (GHS-US)

Eye Irrit. 2A H319

Skin Sens. 1 H317

##### Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US)



GHS07

Signal word (GHS-US)

Warning

Hazard statements (GHS-US)

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

Precautionary statements (GHS-US)

P261 - Avoid breathing mist, spray

P264 - Wash hands thoroughly after handling

P272 - Contaminated work clothing should not be allowed out of the workplace

P280 - Wear eye protection, protective gloves

P302+P352 - IF ON SKIN: Wash with plenty of soap and water

P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P333/337+P313 - If skin/eye irritation or rash occurs: Get medical advice/attention

P362+P364 - Take off contaminated clothing and wash it before reuse

P501 - Dispose of contents/container to an approved waste disposal plant

#### 2.3. Other hazards

Other hazards not contributing to the classification

May cause long-term adverse effects to the aquatic environment.

#### 2.4. Unknown acute toxicity (GHS-US)

1 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal).

1 percent 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

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Full text of H-phrases: see section 16

### 3.2. Mixtures

Alternate component name(s) and composition ranges may be used to protect Trade Secrets.

Name	Product Identifier	%	Classification (GHS-US)
Water	(CAS No) 7732-18-5	~60	Not classified
Sulfone	Withheld as Trade Secret	15-23	Acute Tox. 4 (Oral), H302
Glycerol	(CAS No) 56-81-5	<10	Not classified. See Exposure Limit, section 8.
Proprietary magenta dye	Withheld as Trade Secret	3-6	Eye Irrit. 2A, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411
Ethoxylated acetylenic diols	Withheld as trade secret	<3	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319
2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate	Withheld as trade secret	<2	Eye Dam. 1, H318 Aquatic Acute 3, H402 Aquatic Chronic 3, H412

## 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.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- First-aid measures after ingestion : Not expected to present a significant ingestion hazard under anticipated conditions of normal use.

### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : Inhalation may cause: irritation, cough, shortness of breath.
- Symptoms/injuries after skin contact : May cause an allergic skin reaction.
- Symptoms/injuries after eye contact : Causes serious eye damage.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

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

### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : No specific fire or explosion hazard.
- Explosion hazard : Product is not explosive.
- Reactivity : Hazardous polymerization will not occur.

### 5.3. Advice for firefighters

- 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/flammable resistant/retardant clothing. Use self-contained breathing apparatus.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid all eyes and skin contact and do not breathe vapor and mist.

#### 6.1.1. For non-emergency personnel

- Protective equipment : Avoid contact with skin and eyes. Wear suitable gloves : butyl rubber or natural rubber gloves.
- Emergency procedures : Evacuate unnecessary personnel. Stop leak without risks if possible.

#### 6.1.2. For emergency responders

- Protective equipment : Avoid all eyes and skin contact and do not breathe vapor and mist. Wear suitable protective clothing and gloves: butyl rubber or rubber; Chemical goggles or safety glasses.

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### Emergency procedures

: Stop leak if safe to do so. If a major spill occurs, all personnel should be immediately evacuated and the area ventilated.

### 6.2. Environmental precautions

Do not discharge into drains or the environment.

### 6.3. Methods and material for containment and cleaning up

For containment

: Absorb and/or contain spill with inert material, then place in suitable container.

Methods for cleaning up

: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.

### 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

: Avoid all eyes and skin contact and do not breathe vapor and mist. Use personal protective equipment as required. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

No additional information available

### 7.3. Specific end use(s)

Inkjet printing.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

All applicable OELs are shown for chemicals listed in Section 3.

#### Glycerol (56-81-5)

JSA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (total) 5 mg/m <sup>3</sup> (respirable fraction)

### 8.2. Exposure controls

Appropriate engineering controls

: Avoid splashing. Either local exhaust or general room ventilation is usually required.

Personal protective equipment

: Safety glasses. Gloves.



Hand protection

: Wear suitable gloves resistant to chemical penetration: butyl rubber or natural rubber gloves.

Eye protection

: Use splash goggles when eye contact due to splashing is possible.

Respiratory protection

: No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation.

Other information

: When using, do not eat, drink or smoke.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state

: Liquid

Appearance

: Semi-opaque.

Color

: Magenta.

Odor

: No data available

Odor threshold

: No data available

pH

: 6.5 - 7.5

Relative evaporation rate (butyl acetate=1)

: No data available

Melting point

: No data available

Freezing point

: No data available

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Boiling point	: No data available
Flash point	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: 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	: > 1
Relative density of saturated gas/air mixture	: ≥ 1
Solubility	: Soluble in water.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Hazardous polymerization will not occur.

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

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

### 10.4. Conditions to avoid

None known.

### 10.5. Incompatible materials

None known.

### 10.6. Hazardous decomposition products

No additional information available

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

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

Sulfone	
LD50 oral rat	2006 (2006 - 2130) mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	12000 mg/l/4h
ATE (oral)	500.000 mg/kg body weight
ATE (vapors)	12000.000 mg/l/4h
ATE (dust, mist)	12000.000 mg/l/4h
Ethoxylated acetylenic diols	
LD50 oral rat	1230 mg/kg (Based on similar product)
ATE (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

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in corrosion/irritation	: Not classified. Based on available data, the classification criteria are not met
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: May cause an allergic skin reaction.
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

ER1.0 Tigris Magenta - components	
IARC group	Not listed in carcinogenicity class
National Toxicology Program (NTP) Status	Not listed in carcinogenicity class

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
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Aspiration hazard	: Not classified. Based on available data, the classification criteria are not met
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Potential Adverse human health effects and symptoms	:
Symptoms/injuries after skin contact	: May cause an allergic skin reaction.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Likely routes of exposure	: Skin and eyes contact.

## SECTION 12: Ecological information

1. Toxicity	:
ecology - general	: May cause long lasting harmful effects to aquatic life.

Sulfone	
LC50 fish 1	> 100 mg/l <i>Oryzias latipes</i>
EC50 Daphnia 1	852 mg/l
ErC50 (algae)	> 1000 mg/l
NOEC chronic crustacea	171 mg/l
NOEC chronic algae	309 mg/l

2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)	
LC50 fish 1	52.5 mg/l juvenile <i>S. maximus</i>
EC50 Daphnia 1	166 mg/l
ErC50 (algae)	15 mg/l
NOEC chronic algae	1 mg/l

Proprietary magenta dye	
LC50 fish 1	5.3 mg/l
EC50 Daphnia 1	60 mg/l

### 12.2. Persistence and degradability

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Persistence and degradability	Not established.

Sulfone	
Persistence and degradability	Not readily biodegradable.

2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)	
Persistence and degradability	Not readily biodegradable.

### 3. Bioaccumulative potential

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Bioaccumulative potential	Not established.

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<b>Sulfone</b>	
Bioconcentration factor (BCF REACH)	< 13
Bioaccumulative potential	Not expected to bioaccumulate.
<b>2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)</b>	
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 information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Do not dispose in household garbage. Dispose in a safe manner in accordance with local/national regulations. Significant quantities of waste product residues should be processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

In accordance with DOT

Not considered a dangerous good for transport regulations

Additional information

Other information : No supplementary information available.

JR

Transport document description :

### Transport by sea

No additional information available

### Air transport

No additional information available

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

<b>Listed on the United States TSCA (Toxic Substances Control Act) inventory</b>	
Sulfone	
Ethoxylated acetylenic diols	
Proprietary magenta dye	
2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)	
Glycerol (56-81-5)	

### 15.2. International regulations

#### CANADA

<b>ER1.0 Tigris Magenta</b>	
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects
<b>Listed on the Canadian DSL (Domestic Substances List) inventory.</b>	
Sulfone	
Ethoxylated acetylenic diols	
Proprietary magenta dye	
2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate (9014-85-1)	
Glycerol (56-81-5)	

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### I-Regulations

#### Listed on the EEC Inventory EINECS (European Inventory of Existing Commercial Chemical Substances) substances.

Sulfone

Ethoxylated acetylenic diols

Proprietary magenta dye

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

Glycerol (56-81-5)

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Eye Irrit. 2 H319

Skin Sens. 1 H317

Aquatic Chronic 3 H412

Full text of H-phrases: see section 16

#### Classification according to Directive 67/548/EEC or 1999/45/EC

R43

R52/53

Full text of R-phrases: see section 16

### 15.2.2. National regulations

#### Sulfone

Listed on the Inventory of Existing Chemical Substances Produced or Imported in China (IECSC).

Listed on the Japanese ENCS (Existing & New Chemicals Substances) inventory.

Listed on KECI (Chemical Inventory of Korea)

Listed on Inventory of Chemicals and Chemical Substances (PICCS)

Listed on the AICS (the Australian Inventory of Chemical Substances).

Listed on New Zealand - Inventory of Chemicals (NZIoC)

#### Ethoxylated acetylenic diols

Listed on the Japanese ENCS (Existing & New Chemicals Substances) inventory.

Listed on the AICS (the Australian Inventory of Chemical Substances).

Listed on New Zealand - Inventory of Chemicals (NZIoC)

Listed on KECI (Chemical Inventory of Korea)

Listed on Inventory of Chemicals and Chemical Substances (PICCS)

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 Inventory of Existing Chemical Substances (IECSC)

Listed on the Japanese ENCS (Existing & New Chemicals Substances) inventory.

Listed on KECI (Chemical Inventory of Korea)

Listed on Taiwan National Chemical Inventory

Listed on Inventory of Chemicals and Chemical Substances (PICCS)

Listed on the AICS (the Australian Inventory of Chemical Substances).

Listed on New Zealand - Inventory of Chemicals (NZIoC)

#### Proprietary magenta dye

Listed on the Inventory of Existing Chemical Substances Produced or Imported in China (IECSC).

Listed on the Japanese ENCS (Existing & New Chemicals Substances) inventory.

Listed on KECI (Chemical Inventory of Korea)

Listed on Inventory of Chemicals and Chemical Substances (PICCS)

Listed on the AICS (the Australian Inventory of Chemical Substances).

#### Glycerol (56-81-5)

Listed on Inventory of Existing Chemical Substances (IECSC)

Listed on KECI (Chemical Inventory of Korea)

Listed on the Japanese ENCS (Existing & New Chemicals Substances) inventory.

Listed on Taiwan National Chemical Inventory

Listed on Inventory of Chemicals and Chemical Substances (PICCS)

Listed on the AICS (the Australian Inventory of Chemical Substances).

Listed on New Zealand - Inventory of Chemicals (NZIoC)

### 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

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lycerol (56-81-5)

U.S. - Washington - Permissible Exposure Limits - STELs

U.S. - Washington - Permissible Exposure Limits - TWAs

### SECTION 16: Other information

Indication of changes

: Original Document.

Data sources

: ESIS (European chemical Substances Information System; accessed at: <http://esis.jrc.ec.europa.eu/index.php?PGM=cla>.  
Chemical Inspection & Regulation Service; accessed at: [http://www.cirs-reach.com/Inventory/Global\\_Chemical\\_Inventories.html](http://www.cirs-reach.com/Inventory/Global_Chemical_Inventories.html).  
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/>  
Kriester 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.  
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>.  
Vendor Safety Data Sheets for components.

: ATE: Acute Toxicity Estimate.  
CAS (Chemical Abstracts Service) number.  
GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).  
LD50: Lethal Dose for 50% of the test population.  
NOEC: No Observable Effect Concentration.  
OSHA: Occupational Safety & Health Administration.  
TSCA: Toxic Substances Control Act.

Abbreviations and acronyms

Full text of H-phrases: see section 16:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Skin Sens. 1	Skin sensitization Category 1
H302	Harmful if swallowed
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H402	Harmful to aquatic life
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

NFPA health hazard

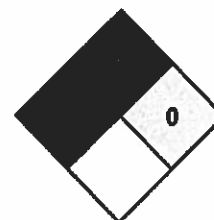
: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



SDS US (GHS HazCom 2012)

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