

Safety Data Sheet

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

- 1.1. Product identifier
Mixture identification:
Trade name: INK CARTRIDGE, T02W4
- 1.2. Relevant identified uses of the substance or mixture and uses advised against
Recommended use:
Ink for inkjet printing
- 1.3. Details of the supplier of the safety data sheet
Company:
EPSON EUROPE B.V.
Azie building, Atlas ArenA, Hoogoorddreef 5, 1101 BA Amsterdam
Zuidoost The Netherlands
Phone number: +31-20-314-5000
Competent person responsible for the safety data sheet:
chemicals@epson-europe.com
Date: 04/08/2017
Revision: 1.0
- 1.4. Emergency telephone number
Phone number: +31-20-314-5000

SECTION 2: Hazards identification









- 2.1. Classification of the substance or mixture
EC regulation criteria 1272/2008 (CLP)
The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP).
Adverse physicochemical, human health and environmental effects:
No other hazards
- 2.2. Label elements
The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP).
Hazard pictograms:
None
Hazard statements:
None
Precautionary statements:
None
Special Provisions:
EUH210 Safety data sheet available on request.
EUH208 Contains 2,4,7,9-tetramethyldec-5-yne-4,7-diol. May produce an allergic reaction.
EUH208 Contains 1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one. May produce an allergic reaction.
Special provisions according to Annex XVII of REACH and subsequent amendments:
None
- 2.3. Other hazards
vPvB Substances: None - PBT Substances: None
Other Hazards:
No other hazards

SECTION 3: Composition/information on ingredients

- 3.1. Substances
No
- 3.2. Mixtures

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Hazardous components within the meaning of the CLP regulation and related classification:

| Qty | Name | Ident. Number | Classification |
|-----------------|---|--|--|
| 65% ~ 80% | Water | CAS: 7732-18-5 EC: 231-791-2 | The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP). |
| 10% ~ 12.5% | 2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutyl ether | Index number: 603-183-00-0 CAS: 143-22-6 EC: 205-592-6 REACH No.: 01-21194751-07-38 |  3.3/1 Eye Dam. 1 H318 |
| 10% ~ 12.5% | Glycerol | CAS: 56-81-5 EC: 200-289-5 | The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP). |
| 0.25% ~ 0.5% | Triethanol amine | CAS: 102-71-6 EC: 203-049-8 | The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP). |
| 0.1% ~ 0.25% | 2,4,7,9-tetramethyldec-5-yne-4,7-diol | CAS: 126-86-3 EC: 204-809-1 |  3.3/1 Eye Dam. 1 H318  3.4.2/1B Skin Sens. 1B H317 4.1/C3 Aquatic Chronic 3 H412 |
| < 0.05% | 1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one | Index number: 613-088-00-6 CAS: 2634-33-5 EC: 220-120-9 |  3.1/4/Oral Acute Tox. 4 H302  3.2/2 Skin Irrit. 2 H315  3.3/1 Eye Dam. 1 H318  3.4.2/1-1A-1B Skin Sens. 1,1A,1B H317  4.1/A1 Aquatic Acute 1 H400 |

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Wash with plenty of water and soap.

In case of eyes contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

In case of Ingestion:

Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

None

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

Treatment:

None

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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Water.

Carbon dioxide (CO₂).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from food, drink and feed.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

7.3. Specific end use(s)

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Glycerol - CAS: 56-81-5

- OEL Type: OSHA - LTE: 5 mg/m³

- OEL Type: OSHA - LTE: 15 mg/m³

DNEL Exposure Limit Values

No data available

PNEC Exposure Limit Values

2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutyl ether -

CAS: 143-22-6

Target: Fresh Water - Value: 1.5 mg/l

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Target: Freshwater sediments - Value: 5.77 mg/kg
 Target: Marine water - Value: 0.15 mg/l
 Target: Marine water sediments - Value: 0.13 mg/kg
 Target: Microorganisms in sewage treatments - Value: 200 mg/l
 2,4,7,9-tetramethyldec-5-yne-4,7-diol - CAS: 126-86-3
 Target: Fresh Water - Value: 0.04 mg/l
 Target: Marine water - Value: 0.004 mg/l
 Target: Freshwater sediments - Value: 0.32 mg/kg
 Target: Marine water sediments - Value: 0.032 mg/kg

8.2. Exposure controls

8.2.1. Appropriate engineering controls:

None

8.2.2. Individual protection measures, such as personal protective equipment

Eye protection:

Not needed for normal use. Anyway, operate according good working practices.

Protection for skin:

No special precaution must be adopted for normal use.

Protection for hands:

Not needed for normal use.

Respiratory protection:

Not needed for normal use.

Thermal Hazards:

None

8.2.3. Environmental exposure controls:

None

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|--------------------|
| Appearance and colour: | Yellow Liquid |
| Odour: | Slightly |
| Odour threshold: | No data available |
| pH: | 8 ~ 9 at 20 °C |
| Melting point / freezing point: | No data available |
| Initial boiling point and boiling range: | No data available |
| Solid/gas flammability: | No data available |
| Upper/lower flammability or explosive limits: | No data available |
| Vapour density: | No data available |
| Flash point: | > 100 °C / 212 °F |
| Evaporation rate: | No data available |
| Vapour pressure: | No data available |
| Relative density: | No data available |
| Solubility in water: | Complete |
| Solubility in oil: | No data available |
| Partition coefficient (n-octanol/water): | No data available |
| Auto-ignition temperature: | No data available |
| Decomposition temperature: | No data available |
| Viscosity: | < 5 mPa·s at 20 °C |
| Explosive properties: | No data available |
| Oxidizing properties: | No data available |

9.2. Other information

| | |
|-----------------|-------------------|
| Miscibility: | No data available |
| Fat Solubility: | No data available |
| Conductivity: | No data available |

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SECTION 10: Stability and reactivity

| | |
|--|---------------------------------|
| 10.1. Reactivity | Stable under normal conditions |
| 10.2. Chemical stability | Stable under normal conditions |
| 10.3. Possibility of hazardous reactions | None |
| 10.4. Conditions to avoid | Stable under normal conditions. |
| 10.5. Incompatible materials | None in particular. |
| 10.6. Hazardous decomposition products | None. |

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological information of the mixture:

e) germ cell mutagenicity:

Test: Mutagenesis - Species: Salmonella Typhimurium and Escherichia coli
Negative

f) carcinogenicity:

Does not contain carcinogens (Ref. 1)

g) reproductive toxicity:

Does not contain reproductive toxicity and developmental toxic substances (Ref. 2)

Toxicological information of the main substances found in the mixture:

2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutyl ether - CAS: 143-22-6

a) acute toxicity:

Test: LD50 - Route: Dermal - Species: Rabbit = 3.54 ml/kg - Source: American Industrial Hygiene Association Journal. Vol. 23, Pg. 95, 1962.

Test: LD50 - Route: Oral - Species: Rat = 5300 mg/kg - Source: Office of Toxic Substances Report. Vol. OTS,

Glycerol - CAS: 56-81-5

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Guinea pig = 7750 mg/kg - Source: Journal of Industrial Hygiene and Toxicology. Vol. 23, Pg. 259, 1941

Test: LDLo - Route: Oral - Species: Human = 1428 mg/kg - Source: "Toxicology of Drugs and Chemicals," Deichmann, W.B., New York, Academic Press, Inc., 1969Vol. -, Pg. 288, 1969.

Triethanol amine - CAS: 102-71-6

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Guinea pig = 2200 mg/kg - Source: "Toxicometric Parameters of Industrial Toxic Chemicals Under Single Exposure," Izmerov, N.F., et al., Moscow, Centre of International Projects, GKNT, 1982Vol. -, Pg. 114, 1982.

Test: LD50 - Route: Oral - Species: Mouse = 5846 mg/kg - Source: Science Reports of the Research Institutes, Tohoku University, Series C: Medicine. Vol. 36(1-4), Pg. 10, 1989.

2,4,7,9-tetramethyldec-5-yne-4,7-diol - CAS: 126-86-3

a) acute toxicity:

Test: LD50 - Route: Dermal - Species: Rat > 2000 mg/kg

b) skin corrosion/irritation:

Test: Skin Irritant - Species: Rabbit Mild irritant

c) serious eye damage/irritation:

Test: Eye Irritant - Species: Rabbit Highly irritating

d) respiratory or skin sensitisation:

Test: Skin Sensitisation - Route: LLNA - Species: Mouse Sensitiser

e) germ cell mutagenicity:

Test: Mutagenesis - Species: Salmonella Typhimurium Negative

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If not differently specified, the information required in Regulation (EU) 2015/830 listed below must be considered as 'No data available':

- a) acute toxicity;
- b) skin corrosion/irritation;
- c) serious eye damage/irritation;
- d) respiratory or skin sensitisation;
- e) germ cell mutagenicity;
- f) carcinogenicity;
- g) reproductive toxicity;
- h) STOT-single exposure;
- i) STOT-repeated exposure;
- j) aspiration hazard.

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

2,4,7,9-tetramethyldec-5-yne-4,7-diol - CAS: 126-86-3

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 36 mg/l - Duration h: 96

Endpoint: EC50 - Species: Daphnia = 88 mg/l - Duration h: 48

Endpoint: EC50 - Species: Algae = 15 mg/l - Duration h: 72

c) Bacteria toxicity:

Endpoint: EC50 - Species: activated sludge = mg/l

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances:

None

12.6. Other adverse effects

None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

14.1. UN number Not classified as dangerous in the meaning of transport regulations.

14.2. UN proper shipping name

No data available

14.3. Transport hazard class(es)

No data available

14.4. Packing group

No data available

14.5. Environmental hazards

No data available

14.6. Special precautions for user

No data available

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Regulation (EC) n. 1907/2006 (REACH)

Regulation (EC) n. 1272/2008 (CLP)

Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013

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Regulation (EU) 2015/830
 Regulation (EU) n. 286/2011 (ATP 2 CLP)
 Regulation (EU) n. 618/2012 (ATP 3 CLP)
 Regulation (EU) n. 487/2013 (ATP 4 CLP)
 Regulation (EU) n. 944/2013 (ATP 5 CLP)
 Regulation (EU) n. 605/2014 (ATP 6 CLP)

Restrictions related to the product or the substances contained according to Annex XVII
 Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product:

No restriction.

Restrictions related to the substances contained:

No restriction.

Where applicable, refer to the following regulatory provisions :

Directive 2003/105/CE ('Activities linked to risks of serious accidents') and subsequent amendments.

Regulation (EC) nr 648/2004 (detergents).

1999/13/EC (VOC directive)

Provisions related to directives 82/501/EC(Seveso), 96/82/EC(Seveso II):

No data available

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of phrases referred to in Section 3:

H318 Causes serious eye damage.

H317 May cause an allergic skin reaction.

H412 Harmful to aquatic life with long lasting effects.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H400 Very toxic to aquatic life.

| Hazard class and hazard category | Code | Description |
|----------------------------------|---------------|--|
| Acute Tox. 4 | 3.1/4/Oral | Acute toxicity (oral), Category 4 |
| Skin Irrit. 2 | 3.2/2 | Skin irritation, Category 2 |
| Eye Dam. 1 | 3.3/1 | Serious eye damage, Category 1 |
| Skin Sens. 1,1A,1B | 3.4.2/1-1A-1B | Skin Sensitisation, Category 1,1A,1B |
| Skin Sens. 1B | 3.4.2/1B | Skin Sensitisation, Category 1B |
| Aquatic Acute 1 | 4.1/A1 | Acute aquatic hazard, category 1 |
| Aquatic Chronic 3 | 4.1/C3 | Chronic (long term) aquatic hazard, category 3 |

This safety data sheet has been completely updated in compliance to Regulation 2015/830.

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre,
 Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van
 Nostrand Reinold

CCNL - Appendix 1

Ref. 1 ·IARC Monographs on the Evaluation Carcinogenic Risks to Humans (IARC:
 International Agency for Research on Cancer)

·Journal of Occupational Health (JOH) (Japan Society of Occupational Health (JSOH))

·TLVs and BEIs (ACGIH: American Conference of Governmental Industrial Hygienists)

Safety Data Sheet

- IRIS Carcinogenic Assessment (IRIS: Integrated Risk Information System of US EPA)
 - National Toxicology Program (NTP) Report on Carcinogens
 - Annex VI of REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
 - MAK und BAT Werte Liste (DFG: German Research Foundation)
 - TRGS 905, Verzeichnis krebserzeugender, keimzell mutagener oder reproduktionstoxischer Stoffe (AGS: Committee on Hazardous Substances, Germany)
- Ref. 2
- Annex VI of REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
 - TRGS 905, Verzeichnis krebserzeugender, keimzell mutagener oder reproduktionstoxischer Stoffe (AGS: Committee on Hazardous Substances, Germany)

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This Safety Data Sheet cancels and replaces any preceding release.

| | |
|-------------|--|
| ADR: | European Agreement concerning the International Carriage of Dangerous Goods by Road. |
| CAS: | Chemical Abstracts Service (division of the American Chemical Society). |
| CLP: | Classification, Labeling, Packaging. |
| DNEL: | Derived No Effect Level. |
| EINECS: | European Inventory of Existing Commercial Chemical Substances. |
| GefStoffVO: | Ordinance on Hazardous Substances, Germany. |
| GHS: | Globally Harmonized System of Classification and Labeling of Chemicals. |
| IATA: | International Air Transport Association. |
| IATA-DGR: | Dangerous Goods Regulation by the "International Air Transport Association" (IATA). |
| ICAO: | International Civil Aviation Organization. |
| ICAO-TI: | Technical Instructions by the "International Civil Aviation Organization" (ICAO). |
| IMDG: | International Maritime Code for Dangerous Goods. |
| INCI: | International Nomenclature of Cosmetic Ingredients. |
| KSt: | Explosion coefficient. |
| LC50: | Lethal concentration, for 50 percent of test population. |
| LD50: | Lethal dose, for 50 percent of test population. |
| LTE: | Long-term exposure. |
| PNEC: | Predicted No Effect Concentration. |
| RID: | Regulation Concerning the International Transport of Dangerous Goods by Rail. |
| STE: | Short-term exposure. |
| STEL: | Short Term Exposure limit. |
| STOT: | Specific Target Organ Toxicity. |
| TLV: | Threshold Limiting Value. |
| TWATLV: | Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard). |
| WGK: | German Water Hazard Class. |