

1. Identification

GHS Product Identifier

Mixture identification:

Trade name: Ink cartridge, T43S2

Recommended use of the chemical and restrictions on use

Recommended use:

Ink for inkjet printing

Supplier's details

Company:

SEIKO EPSON CORPORATION

80 Harashinden, Hirooka, Shiojiri-shi, Nagano-ken, 399-0785 JAPAN

Phone number: +81-263-52-2552

Competent person responsible for the safety data sheet:

MSDS_HRO@exc.epson.co.jp

Emergency phone number

Phone number: +81-263-52-2552

2. Hazard identification

Classification of the substance or mixture

The product is not classified as dangerous according to GHS - Fifth revised edition.

GHS label elements, including precautionary statements

The product is not classified as dangerous according to GHS - Fifth revised edition.

Hazard pictograms:

None

Hazard statements:

None

Precautionary statements:

None

Special Provisions:

None

Other hazards which do not result in a classification

No other hazards

3. Composition/information on ingredients

Substances

No

Mixtures

Hazardous components within the meaning of GHS 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 GHS - Fifth revised edition.
10% ~ 12.5%	Glycerol	CAS: 56-81-5 EC: 200-289-5	The product is not classified as dangerous according to GHS - Fifth revised edition.
7% ~ 10%	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	 3.3/1 Eye Dam. 1 H318

		07-38	
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  3.4.2/1 Skin Sens. 1 H317 4.1/C3 Aquatic Chronic 3 H412
0.1% ~ 0.25%	Triethanol amine	CAS: 102-71-6 EC: 203-049-8	The product is not classified as dangerous according to GHS - Fifth revised edition.

4. First-aid measures

Description of necessary 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.

Most important symptoms/effects, acute and delayed

None

Indication of immediate medical attention and special treatment needed, if necessary

Treatment:

None

5. Fire-fighting measures

Suitable extinguishing media

Water.

Carbon dioxide (CO₂).

Unsuitable extinguishing media:

None in particular.

Special hazards arising from the chemical

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

Hazardous combustion products:

None

Explosive properties: No data available

Oxidizing properties: No data available

Special protective actions for fire-fighters

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.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

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
Methods and material for containment and cleaning up
Wash with plenty of water.

7. Handling and storage

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.
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.

8. Exposure controls/personal protection

Control parameters
Glycerol - CAS: 56-81-5
- OEL Type: OSHA - TWA: 5 mg/m³ - Notes: Respirable dust
- OEL Type: OSHA - TWA: 15 mg/m³ - Notes: Total dust
Triethanol amine - CAS: 102-71-6
- OEL Type: ACGIH - TWA(8h): 5 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
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
Appropriate engineering controls:
None
Individual protection measures, such as personal protective equipment (PPE)
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

9. Physical and chemical properties

Appearance and colour:	Cyan Liquid
Odour:	Slightly
Odour threshold:	No data available
PH:	8.3 ~ 9.3 at 20 °C
Melting point / freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point:	Does not flash until 100 °C / 212 °F (closed cup method, ASTM D 3278)
Evaporation rate:	No data available
Solid/gas flammability:	No data available
Upper/lower flammability or explosive limits:	No data available
Vapour pressure:	No data available
Vapour density:	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

10. Stability Toxicological information

Reactivity
Stable under normal conditions

Chemical stability
Stable under normal conditions

Possibility of hazardous reactions
None

Conditions to avoid
Stable under normal conditions.

Incompatible materials
None in particular.

Hazardous decomposition products
None.

11. Toxicological information

Information on toxicological effects

Toxicological information of the product:

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 product:

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., 1969 Vol. -, Pg. 288, 1969.

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,

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

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, 1982 Vol. -, 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.

If not differently specified, the information listed below must be considered as N.A.:

- 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.

12. Ecological information

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 = 630 mg/l - Duration h: 0.5

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Other adverse effects
None

13. Disposal considerations

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

14. Transport information

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

UN proper shipping name
No data available

Transport hazard class(es)
No data available

Packing group, if applicable
No data available

Environmental hazards
No data available

Special precautions for user
No data available

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
No data available

15. Regulatory information

Safety, health and environmental regulations specific for the product in question
This Safety Data Sheet has been prepared according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Fifth revised edition.

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.

Safety Data Sheet dated October 12, 2018, Revision: 2.0

Paragraphs modified from the previous revision:

- 3. Composition/information on ingredients
- 8. Exposure controls/personal protection
- 9. Physical and chemical properties
- 11. Toxicological information
- 12. Ecological information

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)
· IRIS Carcinogenic Assessment (IRIS: Integrated Risk Information System of US EPA)
· National Toxicology Program (NTP) Report on Carcinogens (USA)
· 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.