

## 1. Identification

GHS Product Identifier

Mixture identification:

Trade name: Ink cartridge, T43S5

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% ~<br>80%   | Water                                                                             | CAS: 7732-18-5<br>EC: 231-791-2                                                        | The product is not classified as dangerous according to GHS - Fifth revised edition.                        |
| 10% ~<br>12.5% | Glycerol                                                                          | CAS: 56-81-5<br>EC: 200-289-5                                                          | The product is not classified as dangerous according to GHS - Fifth revised edition.                        |
| 7% ~<br>10%    | 2-[2-(2-butoxyethoxy)ethoxy]ethanol;<br>TEGBE; triethylene glycol monobutyl ether | Index number: 603-183-00-0<br>CAS: 143-22-6<br>EC: 205-592-6<br>REACH No.: 01-21194751 |  3.3/1 Eye Dam. 1 H318 |

|                 |                  |                                |                                                                                      |
|-----------------|------------------|--------------------------------|--------------------------------------------------------------------------------------|
|                 |                  | 07-38                          |                                                                                      |
| 0.1% ~<br>0.25% | Triethanol amine | CAS: 102-71-6<br>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 (CO<sub>2</sub>).

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.

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## 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.

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## 8. Exposure controls/personal protection

Control parameters

Glycerol - CAS: 56-81-5

- OEL Type: OSHA - TWA: 5 mg/m<sup>3</sup> - Notes: Respirable dust

- OEL Type: OSHA - TWA: 15 mg/m<sup>3</sup> - Notes: Total dust

Triethanol amine - CAS: 102-71-6

- OEL Type: ACGIH - TWA(8h): 5 mg/m<sup>3</sup>

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

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

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## 9. Physical and chemical properties

Appearance and colour: Cyan Liquid

Odour: Slightly

Odour threshold: No data available

PH: 8.2 ~ 9.2 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

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## 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.

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## 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,  
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.

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.

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## 12. Ecological information

Toxicity

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

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

None

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## 13. Disposal considerations

Disposal methods

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

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## 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

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## 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.

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## 16. Other information

Full text of phrases referred to in Section 3:

H318 Causes serious eye damage.

Safety Data Sheet dated October 15, 2018, Revision: 2.0

Paragraphs modified from the previous revision:

3. Composition/information on ingredients

8. Exposure controls/personal protection

11. Toxicological 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 of the 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

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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.                                                           |