1: Identification

GHS Product Identifier

Mixture identification:
Trade name: InkCartridge, T41W5

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:

<table>
<thead>
<tr>
<th>Qty</th>
<th>Name</th>
<th>Ident. Number</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>65% ~ 80%</td>
<td>Water</td>
<td>CAS: 7732-18-5 EC: 231-791-2</td>
<td>The product is not classified as dangerous according to GHS - Fifth revised edition.</td>
</tr>
<tr>
<td>7% ~ 10%</td>
<td>Glycerol</td>
<td>CAS: 56-81-5  EC: 200-289-5</td>
<td>The product is not classified as dangerous according to GHS - Fifth revised edition.</td>
</tr>
<tr>
<td>5% ~ 7%</td>
<td>Carbon black</td>
<td>CAS: 1333-86-4 EC: 215-609-9</td>
<td>The product is not classified as dangerous according to GHS - Fifth revised edition.</td>
</tr>
<tr>
<td>1% ~ 3%</td>
<td>1,1',1''-nitrotriplapan-2-ol;</td>
<td>Index number: 603-097-00-3</td>
<td>3.3/2A Eye Irrit. 2A H319</td>
</tr>
</tbody>
</table>
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.
Methods and 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 - LTE: 5 mg/m³ - Notes: PEL, as mist, respirable fraction
  - OEL Type: OSHA - LTE: 15 mg/m³ - Notes: PEL, as mist, total dust
- **Carbon black** - CAS: 1333-86-4
  - OEL Type: ACGIH - LTE: 3 mg/m³
  - OEL Type: OSHA - LTE: 3.5 mg/m³

**DNEL Exposure Limit Values**
- No data available

**PNEC Exposure Limit Values**
- No data available

**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:** Black Liquid
- **Odour:** Slightly
- **Odour threshold:** No data available
- **pH:** 9.0 ~ 10.4 at 20 °C
- **Melting point / freezing point:** No data available
- **Initial boiling point and boiling range:** No data available
- **Flash point:** No data available
- **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 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 ºC

10: Stability and reactivity
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 mixture:
e) germ cell mutagenicity:
   Test: Mutagenesis - Species: Salmonella Typhimurium and Escherichia coli Negative
f) carcinogenicity:
   Components do not come under carcinogens (Ref. 1), except for Carbon black
g) reproductive toxicity:
   Does not contain reproductive toxicity and developmental toxic substances (Ref. 2)
Toxicological information of the main substances found in the mixture:
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
Carbon black - CAS: 1333-86-4
a) acute toxicity:
   Test: LD50 - Route: Dermal - Species: Rabbit > 3 g/kg - Source: Acute Toxicity Data. Journal of the American College of Toxicology, Part B. Vol. 15
   Test: LD50 - Route: Oral - Species: Rat > 15400 mg/kg - Source: Acute Toxicity Data. Journal of the American College of Toxicology, Part B. Vol. 15
Carbon black - CAS: 1333-86-4
With excessive exposure, carbon black has been listed as a possible human carcinogen. However, as engineered within this ink cartridge, emissions to air of carbon black during normal printing use have not been found. IARC, the International Agency for Research on Cancer, has found printing inks to be not classifiable as human carcinogens.
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.
No data available
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:

H319 Causes serious eye irritation.

Safety Data Sheet dated June 30, 2017, Revision: 1.0

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)
  - National Toxicology Program (NTP) Report on Carcinogens
  - MAK und BAT Werte Liste (DFG: German Research Foundation)
  - TRGS 905, Verzeichnis krebszeugender, keimzell mutagener oder reproductionstoxischer Stoffe (AGS: Committee on Hazardous Substances, Germany)

  - TRGS 905, Verzeichnis krebszeugender, keimzell mutagener oder reproductionstoxischer 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).
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.