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

1.1. Product identifier
Mixture identification:
Trade name: Pre Treatment Liquid T43R2

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:
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
Date: 04/07/2018
Revision: 0.2

1.4. Emergency telephone number
Phone number: +81-263-52-2552

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

<table>
<thead>
<tr>
<th>Qty</th>
<th>Name</th>
<th>Ident. Number</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>80% ~ 90%</td>
<td>Water</td>
<td>CAS: 7732-18-5</td>
<td>The product is not classified as dangerous according to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EC: 231-791-2</td>
<td>CLP</td>
</tr>
</tbody>
</table>
Safety Data Sheet
(Provisional version due to R&D sample)

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Substance</th>
<th>CAS</th>
<th>EC</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>15% ~ 20%</td>
<td>Nitric acid, calcium salt, tetrahydrate</td>
<td>13477-34-4</td>
<td></td>
<td>3/3/1 Eye Dam. 1 H318</td>
</tr>
<tr>
<td>0.5% ~ 1%</td>
<td>Triethanol amine</td>
<td>102-71-6</td>
<td>203-049-8</td>
<td>The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP).</td>
</tr>
</tbody>
</table>

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:
   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

Regulation EC 1272/2008 (CLP).
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.
- Don't use empty container before they have been cleaned.
- Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
- Contaminated clothing should be changed before entering eating areas.
- 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
- 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
  - No data available

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: White Liquid
- Odour: Slightly
- Odour threshold: No data available
- pH: No data available
- 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: No data available
Evaporation rate: No data available
Vapour pressure: 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
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

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 product:
c) serious eye damage/irritation:
   Test: Eye Irritant - Species: OECD test Guideline No.491 Non-irritant
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:
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, GKNTH, 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 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.
No data available

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)
Safety Data Sheet
(Provisional version due to R&D sample)

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
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:
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.

<table>
<thead>
<tr>
<th>Hazard class and hazard category</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Dam. 1</td>
<td>3.3/1</td>
<td>Serious eye damage, Category 1</td>
</tr>
</tbody>
</table>

Paragraphs modified from the previous revision:

SECTION 1: Identification of the substance/mixture and of the company/undertaking
SECTION 3: Composition/information on ingredients
SECTION 9: Physical and chemical properties

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)
Safety Data Sheet
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· National Toxicology Program (NTP) Report on Carcinogens (USA)
· MAK und BAT Werte Liste (DFG: German Research Foundation)
· TRGS 905, Verzeichnis krebsverursachender, 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).
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.