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Safety Data Sheet

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

1.1. Product identifier

Mixture identification:

Trade name: Ink Supply Unit, T45NB

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: 19/02/2019

Revision: 1.1

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)

Warning, Skin Irrit. 2, Causes skin irritation.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:

Warning

Hazard statements:

H315 Causes skin irritation.

Precautionary statements:

P264 Wash hands thoroughly after handling.
P280 Wear protective gloves.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.

Special Provisions:

None

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:

Qty	Name	Ident. Number	Classification
65% ~ 80%	Bis(2-ethoxyethyl) ether	CAS: 112-36-7 EC: 203-963-7 REACH No.: 01-21199699 46-13	3.2/2 Skin Irrit. 2 H315
15% ~ 20%	gamma-Butyrolactone	CAS: 96-48-0 EC: 202-509-5	The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP).
1% ~ 3%	piment	Index number: 013-002-00-1 CAS: 7429-90-5 EC: 231-072-3	2.12/2 Water-react. 2 H261 2.7/1 Flam. Sol. 1 H228

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.
Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.
Wash thoroughly the body (shower or bath).
Remove contaminated clothing immediately and dispose off safely.
After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an opthalmologist immediately.
Protect uninjured eye.
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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Treatment:
None

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Carbon dioxide (CO_2).
CO_2 or Dry chemical fire extinguisher.

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.
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.
Contamined 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

aluminium powder (stabilised) - CAS: 7429-90-5

- OEL Type: ACGIH - TWA(8h): 1 mg/m3
- OEL Type: ISHL -- Country: JAPAN - TWA: 0.025 mg/m3
- OEL Type: JSOH -- Country: JAPAN - TWA: 0.5 mg/m3 - Notes: RESPIRABLE DUST
- OEL Type: JSOH -- Country: JAPAN - TWA: 2 mg/m3 - Notes: TOTAL DUST

DNEL Exposure Limit Values

Bis(2-ethoxyethyl) ether - CAS: 112-36-7

Worker Industry: 5.96 mg/m3 - Exposure: Human Inhalation
Worker Industry: 1.71 mg/kg/day - Exposure: Human Oral
Worker Professional: 50.05 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Professional: 3.43 mg/kg/day - Exposure: Human Dermal - Frequency: Long Term, systemic effects

PNEC Exposure Limit Values

Bis(2-ethoxyethyl) ether - CAS: 112-36-7

Target: Fresh Water - Value: 0.001 mg/l
Target: Freshwater sediments - Value: 0.007 mg/kg
Target: Marine water - Value: 0.0001397 mg/l
Target: Marine water sediments - Value: 0.0006778 mg/kg
Target: Air - Value: 0.000001105 mg/m3

8.2. Exposure controls

8.2.1. Appropriate engineering controls:

Provide a good standard of general ventilation. Use powered wall- or window-mounted fans to supply fresh air - five to ten air changes per hour, with a through draught.

8.2.2. Individual protection measures, such as personal protective equipment

Eye protection:

Wear eye protection, if there is a risk of material splashing under work.

Protection for skin:

Use chemical protective clothes if there is a risk of splushing the material under work.

Protection for hands:

Use chemical protective gloves where there is a risk of skin contact under working, e.g. single-use NBR (nitrile rubber) gloves 0.2 mm thick are acceptable. Do not exceed the breackthrough time or reuse.

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:	Silver Liquid
Odour:	Slightly
Odour threshold:	No data available
PH:	Not Relevant
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:	> 78.7 ℃ / 174 °F
Evaporation rate:	No data available
Vapour pressure:	No data available
Relative density:	No data available
Solubility in water:	Slightly soluble
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 25 ℃
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:
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:
Bis(2-ethoxyethyl) ether - CAS: 112-36-7
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat = 4970 mg/kg
c) serious eye damage/irritation:
Test: Eye Irritant - Species: Rabbit Non-irritant

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.

Toxicological information of the product:

No data available

Toxicological information of the main substances found in the product:

Bis(2-ethoxyethyl) ether - CAS: 112-36-7

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish > 10000 mg/l - Duration h: 96

Endpoint: LC50 - Species: Daphnia = 6600 mg/l - Duration h: 96

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 Marpol 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
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)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 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:
Restriction 3
Restriction 40
Restrictions related to the substances contained:
No restriction.
Where applicable, refer to the following regulatory provisions :
Directive 2012/18/EU (Seveso III)
Regulation (EC) nr 648/2004 (detergents).
Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):
Seveso III category according to Annex 1, part 1
None

15.2. Chemical safety assessment
No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Full text of phrases referred to in Section 3:
H315 Causes skin irritation.
H261 In contact with water releases flammable gases.
H228 Flammable solid.

Hazard class and hazard category	Code	Description
Water-react. 2	2.12/2	Substance or mixture which in contact with water emits flammable gas, Category 2
Flam. Sol. 1	2.7/1	Flammable solid, Category 1
Skin Irrit. 2	3.2/2	Skin irritation, Category 2

This safety data sheet has been completely updated in compliance to Regulation 2015/830.
Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Skin Irrit. 2, H315	Calculation method

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
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.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average
WGK:	German Water Hazard Class.