

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

1.1. Product identifier

Mixture identification:

Trade name: Reactive Liq, T45U7

UFI: 6MDV-1KFY-4J0W-WJMK

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use:

Reactive liquid for inkjet printing

1.3. Details of the supplier of the safety data sheet

Company:

EPSON EUROPE B.V.

Azie building, Atlas ArenA, Hoogoorddreef 5, 1101 BA Amsterdam

Zuidoost The Netherlands

Phone number: +31-20-314-5000

3rd and 4th Floors, The Clarendon Works, 37-39 Clarendon Road,
Watford, WD17 1JA, United Kingdom

Phone number: +44-1442-261144

Competent person responsible for the safety data sheet:

chemicals@epson.eu

Date: 03/10/2025

Revision: 7.0

1.4. Emergency telephone number

United Kingdom;

01952 607111 Monday to Friday 9am to 5:30pm.

Emergency Action: In the event of a medical enquiry involving
this product, please contact your doctor or local hospital
accident and emergency department.

Ireland;

+353 (01) 809 2566 or +353 (01) 809 2166 8am – 10pm

Malta;

2545 0000 or 21224071

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)



Warning, Eye Irrit. 2, Causes serious eye irritation.



Danger, Repr. 1B, May damage fertility or the unborn child.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:



Danger

Hazard statements:

H319 Causes serious eye irritation.

H360 May damage fertility or the unborn child.

Precautionary statements:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.
P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with applicable regulations.

Special Provisions:

None

Contains

2-Pyrrolidone

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration $\geq 0.1\%$

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
50% ~ 65%	Water	CAS: 7732-18-5 EC: 231-791-2	The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP).
20% ~ 25%	2-Pyrrolidone	CAS: 616-45-5 EC: 210-483-1 REACH No.: 01-21194754 71-37	 3.3/2 Eye Irrit. 2 H319  3.7/1B Repr. 1B H360 Specific Concentration Limits: C $\geq 3\%$: Repr. 1B H360

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 ophthalmologist immediately.

Protect uninjured eye.

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:

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

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.

Exercise the greatest care when handling or opening the container.

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.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

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

No occupational exposure limit available

DNEL Exposure Limit Values

2-Pyrrolidone - CAS: 616-45-5

Worker Industry: 13.23 mg/m³ - Worker Professional: 1.985 mg/m³ - Exposure:

Human Inhalation - Frequency: Long Term, systemic effects

Worker Industry: 1.876 mg/kg/day - Worker Professional: 0.67 mg/kg/day -

Exposure: Human Dermal - Frequency: Long Term, systemic effects

Worker Professional: 0.67 mg/kg/day - Exposure: Human Oral - Frequency: Long Term, systemic effects

PNEC Exposure Limit Values

2-Pyrrolidone - CAS: 616-45-5

Target: Fresh Water - Value: 0.5 mg/l

Target: Freshwater sediments - Value: 2.17 mg/kg

Target: Marine water - Value: 0.05 mg/l

Target: Marine water sediments - Value: 0.217 mg/kg

Target: Microorganisms in sewage treatments - Value: 10 mg/l

8.2. Exposure controls

8.2.1. Appropriate engineering controls:

None

8.2.2. Individual protection measures, such as personal protective equipment

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Respiratory protection:

Use personal protective equipment as required.

Thermal Hazards:

None

8.2.3. Environmental exposure controls:

None

Appropriate engineering controls:

None

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Colour: Clear

Odour: Slightly

Melting point / freezing point: No data available

Boiling point or initial boiling point and boiling range:

Flammability:	No data available
Lower and upper explosion limit:	Non-flammable
Flash point:	No data available
Auto-ignition temperature:	Does not flash.
Decomposition temperature:	No data available
pH:	8.5 ~ 9.5 at 20 °C
Kinematic viscosity:	No data available
Vapour pressure:	No data available
Relative vapour density:	No data available
Particle characteristics:	Not Relevant

9.2. Other information

Viscosity:	< 5 mPa·s at 20 °C
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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 hazard classes as defined in Regulation (EC) No 1272/2008
 - 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)
 - Toxicological information of the main substances found in the product:
 - 2-Pyrrolidone - CAS: 616-45-5
 - a) acute toxicity:
 - Test: LD50 - Route: Oral - Species: Rat > 2000 mg/kg
 - Test: LD50 - Route: Dermal - Species: Rabbit > 2000 mg/kg
 - b) skin corrosion/irritation:
 - Test: Skin Irritant - Species: Rabbit Non-irritant
 - c) serious eye damage/irritation:
 - Test: Eye Irritant - Species: Rabbit Moderate irritant - Based on available data, the classification criteria are not met
 - d) respiratory or skin sensitisation:
 - Test: Skin Sensitisation - Route: LLNA - Species: Mouse Negative
 - e) germ cell mutagenicity:
 - Test: Mutagenesis - Species: Salmonella Typhimurium and Escherichia coli
 - Negative

If not differently specified, the information required in Regulation (EU)2020/878 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.

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration $\geq 0.1\%$

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:

2-Pyrrolidone - CAS: 616-45-5

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish > 4600 mg/l - Duration h: 96

Endpoint: EC50 - Species: Daphnia > 500 mg/l - Duration h: 24

Endpoint: EC50 - Species: Algae > 500 mg/l - Duration h: 72

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. Endocrine disrupting properties

No endocrine disruptor substances present in concentration $\geq 0.1\%$

12.7. Other adverse effects

None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

14.1. UN number or ID 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. Maritime transport in bulk according to IMO instruments
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) n. 2020/878
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)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)
Regulation (EU) n. 2021/849 (ATP 17 CLP)
Regulation (EU) n. 2022/692 (ATP 18 CLP)
Regulation (EU) n. 2023/1434 (ATP 19 CLP)
Regulation (EU) n. 2023/1435 (ATP 20 CLP)
Regulation (EU) n. 2024/197 (ATP 21 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

Restrictions related to the substances contained:

Restriction 75

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:

H319 Causes serious eye irritation.

H360 May damage fertility or the unborn child.

Hazard class and hazard category	Code	Description
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Repr. 1B	3.7/1B	Reproductive toxicity, Category 1B

Paragraphs modified from the previous revision:

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

SECTION 15: Regulatory information

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
Eye Irrit. 2, H319	Calculation method
Repr. 1B, H360	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)

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.
- ATE: Acute Toxicity Estimate
- ATEmix: Acute toxicity Estimate (Mixtures)
- 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.