1. IDENTIFICATION

Product identifier
Mixture identification:
Trade name: Ink Bottle, T5224

Recommended use of the chemical and restrictions on use
Recommended use:
Ink for inkjet printing

Details of the supplier of the safety data sheet
Company:
EPSON AMERICA Inc.
3840 Kilroy Airport Way
Long Beach, CA  90806
United States

Telephone : 562.276.1369

Emergency phone number
Telephone : 562.276.1369

2. HAZARD(S) IDENTIFICATION

Classification of the chemical
The product is not classified as dangerous according to OSHA Hazard Communication Standard (29 CFR 1910.1200).

Label elements
The product is not classified as dangerous according to OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazard pictograms:
None

Hazard statements:
None

Precautionary statements:
None

Special Provisions:
None

Hazards not otherwise classified identified during the classification process:
None

Additional classification information
NFPA rating:

HMIS rating:

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
No

Mixtures
Hazardous components within the meaning of 29 CFR 1910.1200 and related classification:
4. FIRST-AID MEASURES
Description of necessary 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
Treatment:
None

5. FIRE-FIGHTING MEASURES
Suitable extinguishing media:
Water.
Carbon dioxide (CO2).
Unsuitable extinguishing media:
None in particular.
Specific 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 equipment and precautions 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 all sources of ignition.
Wear breathing apparatus if exposed to vapours/dusts/aerosols.
Provide adequate ventilation.
Remove persons to safety.
Use appropriate respiratory protection.
See protective measures under point 7 and 8.
Methods and materials 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 use on extensive surface areas in premises where there are occupants.
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.
Storage temperature:
Store at ambient temperature.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Control parameters
Glycerol - CAS: 56-81-5
- OEL Type: OSHA - TWA: 5 mg/m³ - Notes: Respirable dust
- OEL Type: OSHA - TWA: 15 mg/m³ - Notes: Total dust
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
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
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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance and colour:</td>
<td>Yellow Liquid</td>
</tr>
<tr>
<td>Odour:</td>
<td>Slightly</td>
</tr>
<tr>
<td>Odour threshold:</td>
<td>No data available</td>
</tr>
<tr>
<td>PH:</td>
<td>8 ~ 9 at 20 °C</td>
</tr>
<tr>
<td>Melting point / freezing point:</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range:</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point:</td>
<td>&gt; 212 ° F / 100 °C</td>
</tr>
<tr>
<td>Evaporation rate:</td>
<td>No data available</td>
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<tr>
<td>Solid/gas flammability:</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits:</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure:</td>
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</tr>
<tr>
<td>Vapour density:</td>
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</tr>
<tr>
<td>Relative density:</td>
<td>No data available</td>
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<tr>
<td>Solubility in water:</td>
<td>Complete</td>
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<tr>
<td>Solubility in oil:</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water):</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature:</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature:</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>&lt; 5 mPa·s at 20 °C</td>
</tr>
<tr>
<td>Miscibility:</td>
<td>No data available</td>
</tr>
<tr>
<td>Fat Solubility:</td>
<td>No data available</td>
</tr>
<tr>
<td>Conductivity:</td>
<td>No data available</td>
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</tbody>
</table>

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

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:
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
    Test: LD50 - Route: Oral - Species: Rat = 5300 mg/kg - Source: Office of Toxic
    Substances Report. Vol. OTS,
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
    Pg. 288, 1969.

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.,
    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.

Substance(s) listed on the NTP report on Carcinogens:
None.
Substance(s) listed on the IARC Monographs:
    Triethanol amine - Group 3.
Substance(s) listed as OSHA Carcinogen(s):
    None.
Substance(s) listed as NIOSH Carcinogen(s):
    None.

12. ECOLOGICAL INFORMATION

Ecotoxicity
    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

Waste treatment and 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
15. REGULATORY INFORMATION

USA - Federal regulations
TSCA - Toxic Substances Control Act
TSCA inventory: all the components are listed on the TSCA inventory.
TSCA listed substances:
None.
SARA - Superfund Amendments and Reauthorization Act
Section 302 – Extremely Hazardous Substances: no substances listed.
Section 304 – Hazardous substances: no substances listed.
Section 313 – Toxic chemical list: 2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutyl ether.
CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
Substance(s) listed under CERCLA: 2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutyl ether.
CAA - Clean Air Act
CAA listed substances:
2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutyl ether is listed in CAA Section 112, Section 112(b) - HON
Glycerol is listed in CAA Section 111.
CWA - Clean Water Act
CWA listed substances:
None.

USA - State specific regulations
California Proposition 65
Substance(s) listed under California Proposition 65:
None.
Massachusetts Right to know
Substance(s) listed under Massachusetts Right to know:
No substances listed.
New Jersey Right to know
Substance(s) listed under New Jersey Right to know:
2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutyl ether.
Pennsylvania Right to know
Substance(s) listed under Pennsylvania Right to know:
2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutyl ether.

16. OTHER INFORMATION
Full text of phrases referred to in Section 3:
H318 Causes serious eye damage.

Safety Data Sheet dated July 23, 2018, Revision: 1.0

Main bibliographic sources:
Ref. 1 - 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)
· Annex VI of REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and
· MAK und BAT Werte Liste (DFG: German Research Foundation)
· TRGS 905, Verzeichnis krebserzeugender, keimzell mutagener oder reproduktionstoxischer Stoffe (AGS: Committee on Hazardous Substances, Germany)

· TRGS 905, Verzeichnis krebserzeugender, keimzell mutagener oder reproduktionstoxischer Stoffe (AGS: Committee on Hazardous Substances, Germany)

Disclaimer:
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. The information relates only to the specific material and may not be valid for such material used in combination with any other material or in any process.
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.

GHS:  
Globally Harmonized System of Classification and Labeling of Chemicals.

HMIS:  
Hazardous Materials Identification System.

IARC:  
International Agency for Research on Cancer.

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:  

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.

NFPA:  

NIOSH:  
National Institute for Occupational Safety and Health.

NTP:  
National Toxicology Program.

OSHA:  
Occupational Safety and Health Administration.

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).