

SAFETY DATA SHEET

Ink cartridge(Cyan)
IP5-223

OKI DATA CORPORATION



Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier Product Name : Ink cartridge(Cyan)

Product Code: IP5-223

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

Inkjet Ink

1.3 Details of the supplier of the safety data sheet

Manufacturer's Name: OKI Data Corporation

4-11-22 Shibaura, Minato-ku, Tokyo, Japan

Tel: +81-(0)3-5445-6111 OKI EUROPE Limited

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2. HAZARDS IDENTIFICATION

Distributor:

2.1 Classification of the substance or mixture

<Regulation (EC) No. 1272/2008>

Classification

Skin irritation, Category 2 H315: Causes skin irritation.

Serious eye damage, Category 1 H318: Causes serious eye damage.

2.2 Label elements

<Regulation (EC) No. 1272/2008>

Hazard pictograms



Signal word: Danger

Hazard statements Causes skin irritation.

Causes serious eye damage.

Precautionary statements

Prevention: Wear eye protection/ face protection.

Wear protective gloves/ protective clothing.

Response: IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/

physician.

IF ON SKIN: Wash with plenty of water. Call a POISON

CENTER or doctor/ physician if you feel unwell.

Take off contaminated clothing and wash it before reuse.

Hazardous components which must be listed on the label:

γ-butyrolactone

2.3 Other hazards

Vapours may form explosive mixture with air.

3. COMPOSITION / INFORMATION ON INGREDIENTS



Main Ingredients	Content(%)	CAS-No.	EC-No.	Registration number	Classification (REGULATION (EC) No 1272/2008)
bis(2-ethoxyethyl)ether	70-80	112-36-7	203-963-7	-	Skin Irrit. 2; H315
γ-butyrolactone	1-10	96-48-0	202-509-5	-	Acute Tox. 4; H302 Eye Dam. 1; H318 STOT SE 3; H336
(2-methoxymethylethoxy)propanol	1-10	34590-94-8	252-104-2	-	None

Other components (listed on EINECS, NLP or ELINCS) are not hazardous according to the directives mentioned above.

4. FIRST-AID MEASURES

4.1 Description of first aid measures

General advice: In the case of accident or if you feel unwell, seek medical

advice immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

Protection of first-aiders: First Aid responders should pay attention to self-protection,

and use the recommended personal protective equipment

when the potential for exposure exists.

If inhaled: If inhaled, remove to fresh air.

Get medical attention if symptoms occur.

In case of skin contact: In case of contact, immediately flush skin with plenty of water.

Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Wash clothing before reuse.

Thoroughly clean shoes before reuse.

In case of eye contact: In case of contact, immediately flush eyes with plenty of water

for at least 15 minutes.

If easy to do, remove contact lens, if worn.

Get medical attention immediately

If swallowed: If swallowed, DO NOT induce vomiting unless directed to do so

by medical personnel. Get medical attention.

Rinse mouth thoroughly with water.

Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Risks: Causes skin irritation.

Causes serious eye damage.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: Treat symptomatically and supportively

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing Water spray

media: Alcohol-resistant foam

Dry chemical

Carbon dioxide (CO2)



Unsuitable Extinguishing Media

High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during

fire-fighting:

Do not use a solid water stream as it may scatter and spread

fire.

Flash back possible over considerable distance. Vapours may form explosive mixtures with air.

Exposure to combustion products may be a hazard to health.

Hazardous combustion

products:

Carbon oxides

5.3 Advice for firefighters

Special protective equipment In the event of fire, wear self-contained breathing apparatus.

for firefighters:

Use personal protective equipment.

Specific extinguishing

methods:

Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment.

Cool containers/tanks with water spray.

Remove undamaged containers from fire area if it is safe to

do so.

Evacuate area.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Remove all sources of ignition.

Use personal protective equipment.

Follow safe handling advice and personal protective

equipment recommendations.

6.2 Environmental precautions

Environmental precautions: Discharge into the environment must be avoided.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or

oil barriers).

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages

cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up: Non-sparking tools should be used.

Soak up with inert absorbent material (e.g. sand, silica gel,

acid binder, universal binder, sawdust).

Suppress (knock down) gases/vapours/mists with a water

spray jet.

For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in

appropriate container.

Clean up remaining materials from spill with suitable

absorbent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items

employed in the cleanup of releases. You will need to

determine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.



7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Technical measures: See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation: Use with local exhaust ventilation.

Use only in an area equipped with explosion proof exhaust

ventilation.

Advice on safe handling: Do not get on skin or clothing.

Avoid inhalation of vapour or mist.

Do not swallow. Do not get in eyes.

Handle in accordance with good industrial hygiene and

safety practice.

Keep container tightly closed.

Keep away from heat and sources of ignition.

Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to

the environment.

Hygiene measures: Ensure that eye flushing systems and safety showers are

located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage

areas and containers:

Keep in properly labelled containers. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat

and sources of ignition.

Advice on common storage: Do not store with the following product types:

Strong oxidizing agents

Explosives Gases

7.3 Specific end use(s)

Specific use(s): No data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Components		Value type (Form of exposure)	Control parameters	Basis
(2-Methoxymethyle-thoxy)propanol	34590-94-8		50 ppm 308 mg/m3	2000/39/EC
			50 ppm 308 mg/m3	GB EH40

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

bis(2-ethoxyethyl)ether End Use: Workers

Exposure routes: Inhalation

Potential health effects: Long-term systemic effects

Value: 50.5 mg/m3 End Use: Workers

Exposure routes: Skin contact

Potential health effects: Long-term systemic effects

Value: 3.43 mg/kg bw/day End Use: Consumers Exposure routes: Inhalation

y-butyrolactone:



Potential health effects: Long-term systemic effects

Value: 5.96 mg/m3 End Use: Consumers

Exposure routes: Skin contact

Potential health effects: Long-term systemic effects

Value: 1.71 mg/kg bw/day End Use: Consumers Exposure routes: Ingestion

Potential health effects: Long-term systemic effects

Value: 300 mg/kg bw/day

End Use: Workers

Exposure routes: Inhalation

Potential health effects: Long-term systemic effects

Value: 130 mg/m3 End Use: Workers

Exposure routes: Inhalation

Potential health effects: Acute systemic effects

Value: 958 mg/m3 End Use: Workers

Exposure routes: Skin contact

Potential health effects: Long-term systemic effects

Value: 19 mg/kg End Use: Consumers Exposure routes: Inhalation

Potential health effects: Long-term systemic effects

Value: 28 mg/m3 End Use: Consumers Exposure routes: Inhalation

Potential health effects: Acute systemic effects

Value: 340 mg/m3 End Use: Consumers

Exposure routes: Skin contact

Potential health effects: Long-term systemic effects

Value: 8 mg/kg End Use: Consumers Exposure routes: Ingestion

Potential health effects: Long-term systemic effects

Value: 8 mg/kg

(2-Methoxymethyle-thoxy)propanol End Use: Workers

Exposure routes: Inhalation

Potential health effects: Long-term systemic effects

Value: 310 mg/m3 End Use: Workers

Exposure routes: Skin contact

Potential health effects: Long-term systemic effects

Value: 65 mg/kg End Use: Consumers Exposure routes: Inhalation

Potential health effects: Long-term systemic effects

Value: 37.2 mg/m3 End Use: Consumers

Exposure routes: Skin contact

Potential health effects: Long-term systemic effects

Value: 15 mg/kg End Use: Consumers Exposure routes: Ingestion

Potential health effects: Long-term systemic effects

Value: 1.67 mg/kg

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:



y-butyrolactone: Fresh water

Value: 0.056 mg/l Marine water Value: 0.0056 mg/l

Intermittent use/release

Value: 0.56 mg/l

Sewage treatment plant

Value: 452 mg/l Fresh water sediment Value: 0.24 mg/kg Marine sediment Value: 0.02 mg/kg

Soil

Value: 0.0147 mg/kg

(2-Methoxymethyle-thoxy)propanol

Value: 19 mg/l Marine sediment Value: 1.9 mg/l

Fresh water

Intermittent use/release

Value: 190 mg/l

Sewage treatment plant Value: 4168 mg/l Fresh water sediment Value: 70.2 mg/kg Marine sediment Value: 7.02 mg/kg

Soil

Value: 2.74 mg/kg

8.2 Exposure controls

Engineering measures: Ensure adequate ventilation, especially in confined areas.

Minimize workplace exposure concentrations.

Use only in an area equipped with explosion proof exhaust

ventilation.

Personal protective equipment

Eye protection: Wear the following personal protective equipment:

Chemical resistant goggles must be worn.

If splashes are likely to occur, wear: Face-shield

Hand protection

Material: Nitrile rubber

butyl-rubber

Remarks: Choose gloves to protect hands against chemicals depending

on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the

glove manufacturer. Wash hands before breaks and at the end

of workday.

Skin and body protection: Select appropriate protective clothing based on chemical

resistance data and an assessment of the local exposure

potential.

Wear the following personal protective equipment: Flame retardant antistatic protective clothing.

Skin contact must be avoided by using impervious protective

clothing (gloves, aprons, boots, etc).

ventilation is provided or exposure assessment demonstrates



that exposures are within recommended exposure guidelines.

Filter type: Organic vapour type (A)

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance: liquid Color: Blue

Odor solvent-like

Odor Threshold:

pH:

No data available

No data available

Melting point/freezing point:

No data available

No data available

No data available

boiling range:

Flash point: 71 °C

Method: Cleveland open cup

Evaporation rate:

Flammability (solid, gas)

Upper explosion limit:

Lower explosion limit:

Vapour pressure:

Vapour density

No data available

Water solubility: soluble Solubility in other solvents soluble

Solvent: organic solvents

Partition coefficient:

n-octanol/water:

Not applicable

Auto-ignition temperature: No data available
Thermal decomposition: No data available
Viscosity, dynamic: 5 - 15 mPa.s (25 °C)

Explosive properties: Not explosive

Oxidizing properties: The substance or mixture is not classified as oxidizing.

9.2 Other information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions: Combustible liquid.

Vapours may form explosive mixture with air.

Can react with strong oxidizing agents.

10.4 Conditions to avoid

Conditions to avoid: Heat, flames and sparks.



10.5 Incompatible materials

Materials to avoid: Oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes

Inhalation, Skin contact, Ingestion,

of exposure:

Acute toxicity: Not classified based on available information.

<Bis(2-ethoxyethyl) ether>

Acute oral toxicity: LD50 (Rat): 4,970 mg/kg

<γ-butyrolactone>

Acute oral toxicity: LD50 (Rat): 1,582 mg/kg
Acute dermal toxicity: LC50 (Rat): > 5.1 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

<(2-Methoxymethylethoxy)propanol>

Acute oral toxicity LD50 (Rat): > 5,000 mg/kg

Method: OECD Test Guideline 401

Acute inhalation toxicity LC50 (Rat): > 5.296 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Assessment: he substance or mixture has no acute inhalation toxicity

Acute dermal toxicity LD50 (Rabbit): > 5,000 mg/kg

Skin corrosion/irritation: Causes skin irritation.

<Bis(2-ethoxyethyl) ether>

Result: Skin irritation

Remarks: Based on data from similar materials

<γ-butyrolactone>

Species: Rabbit

Result: No skin irritation

<(2-Methoxymethylethoxy)propanol> Species: Rabbit

Result: No skin irritation

Serious eye damage/eye irritation: Causes serious eye damage.

<Bis(2-ethoxyethyl) ether>

Species: Rabbit

Method: OECD Test Guideline 405

Result: No eye irritation

<γ-butyrolactone>

Species: Rabbit

Method: OECD Test Guideline 405
Result: Irreversible effects on the eye

<(2-Methoxymethylethoxy)propanol>

Result: No eye irritation



Respiratory or skin sensitisation

Skin sensitization: Not classified based on available information. Respiratory sensitisation: Not classified based on available information.

<Bis(2-ethoxyethyl) ether>

Test Type: Local lymph node assay (LLNA)

Exposure routes: Skin contact

Species: Mouse

Method: OECD Test Guideline 429

Result: negative

Remarks: Based on data from similar materials

<y-butyrolactone>

Test Type: Local lymph node assay (LLNA)

Exposure routes: Skin contact

Species: Mouse

Method: OECD Test Guideline 429

Result: negative <(2-Methoxymethylethoxy)propanol>

Exposure routes: Skin contact
Species: Humans
Result: negative

Germ cell mutagenicity Not classified based on available information.

<Bis(2-ethoxyethyl) ether>

Genotoxicity in vitro Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Remarks: Based on data from similar materials

<γ-butyrolactone>

Genotoxicity in vitro Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

<(2-Methoxymethylethoxy)propanol>

Genotoxicity in vitro

Test Type: Chromosome aberration test in vitro

Result: negative

Carcinogenicity Not classified based on available information.

<γ-butyrolactone>

Species: Rat

Application Route: Ingestion
Exposure time: 103 weeks
Result: negative
<(2-Methoxymethylethoxy)propanol>

Species: Rat

Application Route: inhalation (vapour)

Exposure time: 2 Years

Method: OECD Test Guideline 453

Result: negative

Reproductive toxicity Not classified based on available information.

<Bis(2-ethoxyethyl) ether>



Effects on fertility Test Type: One-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Remarks: Based on data from similar materials

Effects on foetal development

Test Type: Embryo-foetal development

Species: Rabbit

Application Route: Ingestion

Result: negative

<γ-butyrolactone>

Effects on fertility Test Type: Combined repeated dose toxicity study with

the reproduction/developmental toxicity screening test

Species: Rat

Application Route: Ingestion

Method: OECD Test Guideline 422

Result: negative

Remarks: Based on data from similar materials

Effects on foetal

Test Type: Embryo-foetal development

development Species: Rat

Application Route: Ingestion

Result: negative

<(2-Methoxymethylethoxy)propanol>

Effects on fertility Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: inhalation (vapour) Method: OECD Test Guideline 416

Result: negative

Effects on foetal

development

Test Type: Embryo-foetal development

Species: Rat

Application Route: inhalation (vapour)

Result: negative

STOT - single exposure:

Not classified based on available information.

<y-butyrolactone>

Assessment: May cause drowsiness or dizziness.

STOT - repeated exposure: Not classified based on available information.

Repeated dose toxicity

<Bis(2-ethoxyethyl) ether>

Species: Rat

NOAEL: 2.49 mg/l

Application Route: inhalation (dust/mist/fume)

Exposure time: 4 w

Method: OECD Test Guideline 412

<γ-butyrolactone>

Species: Rat

NOAEL: 225 mg/kg
Application Route: Ingestion
Exposure time: 13 w
<(2-Methoxymethylethoxy)propanol>

Species: Rat

NOAEL: 1.21 mg/l



Application Route: inhalation (vapour)

Exposure time: 13 w

Method: OECD Test Guideline 413

Aspiration toxicity: Not classified based on available information.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

<Bis(2-ethoxyethyl) ether>

Toxicity to fish: LC50 :> 10,000 mg/l

Exposure time: 96 h

Toxicity to daphnia and other aquatic LC50: 6,600 mg/l

invertebrates: Exposure time: 96 h Toxicity to bacteria: NOEC : > 1,000 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

Toxicity to daphnia and other aquatic EC10: 7.38 mg/l invertebrates (Chronic toxicity): Exposure time: 7 d

Species: Ceriodaphnia dubia (water flea)

Remarks: Based on data from similar materials

<γ-butyrolactone>

Toxicity to fish: LC50 (Lepomis macrochirus (Bluegill sunfish)): 56 mg/l

Exposure time: 96 h

Toxicity to daphnia and other aquatic EC50 (Daphnia magna (Water flea)): > 500 mg/l

invertebrates: Exposure time: 48 h

Toxicity to algae: EC50 (Desmodesmus subspicatus (green algae)): > 500 mg/l

Exposure time: 72 h

NOEC (Desmodesmus subspicatus (green algae)): 31.25 mg/l

Exposure time: 72 h

Toxicity to bacteria: IC50 : 4,518 mg/l

Exposure time: 40 h

<(2-Methoxymethylethoxy)propanol>

Toxicity to fish: LC50 (Poecilia reticulata (guppy)): > 1,000 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic EC50 (Daphnia magna (Water flea)): 1,919 mg/l

invertebrates: Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae: EC50 (Selenastrum capricornutum (green algae)): > 969 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to bacteria: EC50 (Pseudomonas putida): 4,168 mg/l

Exposure time: 18 h

Toxicity to daphnia and other aquatic NOEC: >= 0.5 mg/l invertebrates (Chronic toxicity): Exposure time: 22 d

Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

12.2 Persistence and degradability

<Bis(2-ethoxyethyl) ether>

Biodegradability: Result: Not readily biodegradable.

Biodegradation: 0 % Exposure time: 28 d

Method: OECD Test Guideline 301F



<γ-butyrolactone>

Biodegradability: Result: Readily biodegradable.

Biodegradation: 77 % Exposure time: 14 d

Method: OECD Test Guideline 301C

<(2-Methoxymethylethoxy)propanol>

Biodegradability: Result: Readily biodegradable.

Biodegradation: 96 % Exposure time: 28 d

Method: OECD Test Guideline 301F

12.3 Bioaccumulative potential

<Bis(2-ethoxyethyl) ether>

Partition coefficient: n-octanol/water: log Pow: 0.39

<γ-butyrolactone>

Partition coefficient: n-octanol/water: log Pow: -0.566

<(2-Methoxymethylethoxy)propanol>

Partition coefficient: n-octanol/water: log Pow: 0.004

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Not relevant

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product: Dispose of in accordance with local regulations.

According to the European Waste Catalogue, Waste Codes

are not product specific, but application specific.

Waste codes should be assigned by the user, preferably in

discussion with the waste disposal authorities.

Contaminated packaging: Dispose of as unused product.

Empty containers should be taken to an approved waste

handling site for recycling or disposal.

Do not burn, or use a cutting torch on, the empty drum.

14. TRANSPORT INFORMATION

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable



14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable for product as supplied.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous

chemicals: Not applicable

REACH - Candidate List of Substances of Very High Concern

for Authorisation (Article 59).: Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the

ozone layer: Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants: Not applicable

Seveso II - Directive 2003/105/EC amending Council Directive 96/82/EC on the control of major-accident hazards involving

dangerous substances: Not applicable

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION

Full text of H-Statements

H302: Harmful if swallowed. H315:Causes skin irritation.

H318: Causes serious eye damage.

H336:May cause drowsiness or dizziness.

Full text of other abbreviations

Acute Tox.: Acute toxicity.

Eye Dam.: Serious eye damage.

STOT SE: Specific target organ toxicity - single exposure.

2000/39/EC: Europe. Commission Directive 2000/39/EC establishing a first list of

indicative occupational exposure limit values

GB EH40: UK. EH40 WEL - Workplace Exposure Limits.

2000/39/EC / TWA: Limit Value - eight hours.

GB EH40 / TWA: Long-term exposure limit (8-hour TWA reference period).

Further information

Sources of key data used to compile the Safety Data Sheet:

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.