SAFETY DATA SHEET

Ink cartridge(Cyan)

M6-223

OKI DATA INFOTECH CORPORATION

Issuing Date : 1 October, 2015

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 : M6-223

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 Infotech Corporation
563, Takatsuka-Shinden, Matsudo-shi, Chiba, 270-2222,Japan
Tel:+81-47-391-2349

Distributor: OKI Data Americas, Inc.
2067 Wineridge Place, Suite C Escondido, CA 92029, USA
+1-760-781-5200

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification

Flammable liquids	Category 4
Skin irritation	Category 2
Serious eye damage	Category 1

2.2 Label elements

Hazard pictograms



Signal word: Danger

Hazard statements
H227 Combustible liquid.
H315 Causes skin irritation.
H318 Causes serious eye damage.

Precautionary statements

Prevention:
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.

Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 + P310 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.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Storage: P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal: P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

Vapours may form explosive mixture with air.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Main Ingredients	Content(%)	CAS-No.
Bis(2-ethoxyethyl) ether	70-80	112-36-7
γ-Butyrolactone	<10	96-48-0
(2-methoxymethylethoxy)propanol	<10	34590-94-8
Organic pigment	<10	Proprietary
Synthetic resin	<10	Proprietary
Additives	<10	Proprietary

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.

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 for at least 15 minutes while removing contaminated clothing and shoes.
Get medical attention.
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.
Get medical attention if symptoms occur.
Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

Risks:
Causes skin irritation.
Causes serious eye damage.

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.

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 media:
Water spray
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 for fire-fighters:	In the event of fire, wear self-contained breathing apparatus. 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.

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
Recommended storage temperature	5 - 35 °C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
(2-Methoxymethyle-thoxy)propanol	34590-94-8	TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
		TWA	100 ppm 600 mg/m3	NIOSH REL
		ST	150 ppm 900 mg/m3	NIOSH REL
		TWA	100 ppm 600 mg/m3	OSHA Z-1

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	
Respiratory protection	General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided

	by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.
Hand protection	
Material:	Nitrile rubber butyl-rubber
Remarks:	Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. 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.
Eye protection:	Wear the following personal protective equipment: Chemical resistant goggles must be worn. If splashes are likely to occur, wear:Face-shield
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).
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.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	liquid
Color:	red
Odor	solvent-like
Odor Threshold:	No data available
pH:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point:	71 °C Method: Cleveland open cup
Evaporation rate:	No data available
Flammability (solid, gas)	Not applicable
Upper explosion limit:	No data available
Lower explosion limit:	No data available
Vapour pressure:	No data available
Relative vapour density:	No data available
Density:	0.9-1.1g/cm3 (25˚C)
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 of exposure:	Inhalation Skin contact Ingestion Eye contact
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
<γ-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
IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
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 development	Test Type: Embryo-foetal 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.
<γ-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 invertebrates:	LC50 : 6,600 mg/l 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 invertebrates (Chronic toxicity):	EC10: 7.38 mg/l 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 invertebrates:	EC50 (Daphnia magna (Water flea)): > 500 mg/l 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 invertebrates:	EC50 (Daphnia magna (Water flea)): 1,919 mg/l 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 invertebrates (Chronic toxicity):	NOEC: >= 0.5 mg/l 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

Disposal methods

Waste from residues	Dispose of in accordance with local regulations.
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

International Regulation

UNRTDG	Not regulated as a dangerous good
IATA-DGR	Not regulated as a dangerous good
IMDG-Code	Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR	UN/ID/NA number:NA 1993 Proper shipping name:COMBUSTIBLE LIQUID, N.O.S. (Bis(2-ethoxyethyl) ether , (2-Methoxymethylethoxy)propanol) Class:CBL Packing group:III Labels:None ERG Code:128 Marine pollutant:no Remarks:Above applies only to containers over 119 gallons or 450 liters. Not regulated if shipped in packages less than or equal to 119 gallons (450 liters).

15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards:	Fire Hazard Acute Health Hazard
SARA 302:	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313:	The following components are subject to reporting levels established by SARA Title III, Section 313: Bis(2-ethoxyethyl) ether 112-36-7 75 %

US State Regulations

Pennsylvania Right To Know

Bis(2-ethoxyethyl) ether
112-36-7 70 - 80 %
(2-Methoxymethylethoxy)propanol

	34590-94-8 <10% γ-Butyrolactone 96-48-0 <10 %
New Jersey Right To Know	
	Bis(2-ethoxyethyl) ether 112-36-7 70 - 80 % (2-Methoxymethylethoxy)propanol 34590-94-8 <10% γ-Butyrolactone 96-48-0 <10 %
NFPA Hazard Rating	Health (2), Flammability (2), Instability(0), Other (0)
HMIS Hazard Rating	Health (3), Flammability (2), Physical Hazard (0), Other (0)

16. OTHER INFORMATION

ACGIH:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL:	USA. NIOSH Recommended Exposure Limits
OSHA Z-1:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA:	8-hour, time-weighted average
ACGIH / STEL:	Short-term exposure limit
NIOSH REL / TWA:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA Z-1 / TWA:	8-hour time weighted average

Sources of key data used to compile the Material 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.