

Product name: LC201C, LC203C, LC205C, LC211C, LC213C,
LC215C, LC221C, LC223C, LC225XLC, LC231C, LC233C,
LC235XLC, LC261C, LC263C, LC645C, LC663C, LC665XLC,
LC673C, LC675XLC, LC695XLC.

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product Name (Product code) : LC201C (LK9289001), LC203C (LK7747001), LC205C (LK8309001), LC211C (LK9345001), LC213C (LK8547001), LC215C (LK8645001), LC221C (LK9317001), LC223C (LK8387001), LC225XLC (LK8419001), LC231C, LC233C, LC235XLC (LK8921001), LC261C, LC263C, LC645C, LC663C (LK8945001), LC665XLC (LK8969001), LC673C (LK9077001), LC675XLC (LK9047001), LC695XLC.

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

Use of the substance/mixture : These products are dark blue ink in a cartridge for Brother Industries, Ltd. inkjet multifunction devices and fax receivers. The cartridge should be used as supplied by Brother and for use in the products stated. Information provided on this SDS is only consistent with the use specified by Brother

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Manufacturer Brother Industries, Ltd.
15-1 Naeshiro-cho, Mizuho-ku, Nagoya 467-8561, Japan
Telephone (for information): +81-52-824-2735

Importer (USA) Brother International Corporation
200 Crossing Boulevard, Bridgewater, NJ 08807, USA
Telephone (for information): +1-877-276-8437

Importer (Canada) Brother International Corporation (Canada) Ltd.
1 Hotel de Ville, Dollard des Ormeaux, Quebec, H9B 3H6, Canada
Telephone (for information): +1-514-685-0600

Importer (Europe) Brother International Europe Ltd.
Brother House, 1 Tame Street, Guide Bridge, Audenshaw, Manchester M34 5JE, UK
Telephone (for information): +44-161-330-6531

Importer (Australia) Brother International (Aust.) Pty. Ltd. ACN 001 393 835
Level 3, Building A, 11 Talavera Road, Macquarie Park, NSW 2113, Australia
Telephone (for information): +61-2-9887-4344

E-mail Address sds.info@brother.co.jp

1.4. Emergency telephone number

Emergency number : CHEMTREC
+1-703-527-3887 (International)
+1-800-424-9300 (North America)

For France only:
Antipoison Center telephone number: ORFILA +33-1-45-425-959

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

Australia Classification

Not classified as hazardous according to the criteria of NOHSC

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2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

No labeling applicable

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH, annex XIII

SECTION 3: Composition/information on ingredients

3.2. Mixture

Name	Product identifier	%	Classification according to Directive 67/548/EEC	Classification according to Regulation (EC) No. 1272/2008 [CLP]
glycerol	(CAS No) 56-81-5 (EC no) 200-289-5	20 - 50	Not classified	Not classified
Diethylene glycol	(CAS No) 111-46-6 (EC no) 203-872-2 (EC index no) 603-140-00-6	3 - 10	Xn; R22	Acute Tox. 4 (Oral), H302
Cyan Dye	(CAS No) * (EC no) *	3 - 10	Not classified	Not classified
Triethylene glycol monobutyl ether	(CAS No) 143-22-6 (EC no) 205-592-6 (EC index no) 603-183-00-0	3 - 10	Xi; R41	Eye Dam. 1, H318
Water	(CAS No) 7732-18-5 (EC no) 231-791-2	65 - 75	Not classified	Not classified

*Registered

Full text of R- and H- phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : If symptoms persist, obtain medical attention.
- First-aid measures after inhalation : Obtain medical attention. In case of accident by inhalation : remove casualty to fresh air and keep at rest.
- First-aid measures after skin contact : Remove contaminated clothing immediately and wash affected skin with plenty of water or soap and water.
- First-aid measures after eye contact : Obtain medical attention. If substance has got into the eyes, immediately wash out with plenty of water for at least 15 minutes.
- First-aid measures after ingestion : Obtain immediate medical attention. Wash out mouth with water and give 100-200 ml of water to drink.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : Unlikely route of exposure.
- Symptoms/injuries after skin contact : Repeated and/or prolonged skin contact may cause irritation.
- Symptoms/injuries after eye contact : May cause eye irritation.
- Symptoms/injuries after ingestion : Ingestion may cause irritation of the gastrointestinal tract. Unlikely route of exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Extinguish preferably with dry chemical, carbon dioxide, water, foam.
- Unsuitable extinguishing media : None.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Thermal decomposition of organic components may result in occurrence of oxides of carbon.
- Hazardous decomposition products in case of fire : Toxic gases may be formed upon combustion and represents a hazard to firefighters. Combustion products: See Section: 10.

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5.3. Advice for firefighters

Firefighting instructions : Use appropriate respirator for carbon monoxide and carbon dioxide. Wear positive pressure self-contained breathing apparatus (SCBA) during the attack phase of firefighting operations and during cleanup in enclosed or poorly ventilated areas immediately after a fire. Personnel not having suitable respiratory protection must leave the area to prevent significant exposure to toxic combustion gases from any source.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

Emergency procedures : Ensure adequate ventilation. Avoid contact with eyes.

6.2. Environmental precautions

Prevent substance entering sewers. Washings must be prevented from entering surface water drains.

6.3. Methods and material for containment and cleaning up

For containment : Wipe up ink with absorbent towel.

Methods for cleaning up : Wash with water to remove remaining traces of ink.

6.4. Reference to other sections

SECTION 8: Exposure controls/personal protection. SECTION 13: Disposal considerations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep out of the reach of children. Avoid contact with skin, eyes and clothing.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep away from oxidizing agents.

7.3. Specific end use(s)

Cartridge containing water based ink for inkjet printing machine.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

glycerol (56-81-5)		
Belgium	Local name	Glycérine (brouillard)
Belgium	Limit value (mg/m ³)	10 mg/m ³
Czech Republic	Local name	Glycerol, mlha
Czech Republic	Exposure limits (PEL) (mg/m ³)	10 mg/m ³
Czech Republic	Exposure limits (PEL) (ppm)	2.4 ppm
Czech Republic	Exposure limits (NPK-P) (mg/m ³)	15 mg/m ³
Czech Republic	Exposure limits (NPK-P) (ppm)	3.7 ppm
Finland	Local name	Glyseroli
Finland	HTP-arvo (8h) (mg/m ³)	20 mg/m ³
France	Local name	Glycérine (aérosols de)
France	VME (mg/m ³)	10 mg/m ³
Ireland	Local name	Glycerol, mist
Ireland	OEL (8 hours ref) (mg/m ³)	10 mg/m ³
Poland	Local name	Glicerol aerozole
Poland	NDS (mg/m ³)	10 mg/m ³
Portugal	Local name	Glicerina, névoas
Portugal	OEL TWA (mg/m ³)	10 mg/m ³

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glycerol (56-81-5)		
United Kingdom	Local name	Glycerol, mist
United Kingdom	WEL TWA (mg/m ³)	10 mg/m ³
USA - ACGIH	Local name	Glycerin mist
USA - ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³ mist
USA - ACGIH	Remark (ACGIH)	URT irr
USA - OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ Total dust 5 mg/m ³ Respirable Fraction

Diethylene glycol (111-46-6)		
Austria	Local name	Diethylenglykol
Austria	MAK (mg/m ³)	44 mg/m ³
Austria	MAK (ppm)	10 ppm
Austria	MAK Short time value (mg/m ³)	176 mg/m ³
Austria	MAK Short time value (ppm)	40 ppm
Denmark	Local name	Diethylenglycol
Denmark	Limit (long-term) (mg/m ³)	11 mg/m ³
Denmark	Limit (long-term) (ppm)	2.5 ppm
Germany	Local name	2,2'-Oxydiethanol
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	44 mg/m ³
Germany	TRGS 900 Occupational exposure limit value (ppm)	10 ppm
Germany	Remark (TRGS 900)	DFG, Y
Ireland	Local name	Diethylene glycol
Ireland	OEL (8 hours ref) (mg/m ³)	100 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	23 ppm
Latvia	Local name	Dietilēnglikols (2,2'oksibisetanols,2,2'dihidroksidietilēteris)
Latvia	OEL TWA (mg/m ³)	10 mg/m ³
Lithuania	Local name	2,2-oksidietanolis (dietilenglikolis, diglikolis)
Lithuania	IPRV (mg/m ³)	45 mg/m ³
Lithuania	IPRV (ppm)	10 ppm
Lithuania	TPRV (mg/m ³)	90 mg/m ³
Lithuania	TPRV (ppm)	20 ppm
Lithuania	Remark (LT)	O
Poland	Local name	2,2'-Oksydietanol (glikol dwuetylenowy) aerozol
Poland	NDS (mg/m ³)	10 mg/m ³
Romania	Local name	Dietilenglicol
Romania	OEL TWA (mg/m ³)	500 mg/m ³
Romania	OEL TWA (ppm)	115 ppm
Romania	OEL STEL (mg/m ³)	800 mg/m ³
Romania	OEL STEL (ppm)	184 ppm
Spain	Local name	Dietilenglicol
Spain	VLA-ED (mg/m ³)	44 mg/m ³
Spain	VLA-ED (ppm)	10 ppm
Spain	VLA-EC (mg/m ³)	176 mg/m ³
Spain	VLA-EC (ppm)	40 ppm
Sweden	Local name	Diethylene glycol
Sweden	nivågränsvärde (NVG) (mg/m ³)	45 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	10 ppm
Sweden	kortidsvärde (KTV) (mg/m ³)	90 mg/m ³

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Diethylene glycol (111-46-6)		
Sweden	kortidsvärde (KTV) (ppm)	20 ppm
United Kingdom	Local name	2,2'-Oxydiethanol
United Kingdom	WEL TWA (mg/m ³)	101 mg/m ³
United Kingdom	WEL TWA (ppm)	23 ppm

8.2. Exposure controls

Appropriate engineering controls	: Good general ventilation should be sufficient under normal use.
Personal protective equipment	: Not normally required. For use other than in normal operating procedures (such as in the event of large spill), the following should be applied:
Hand protection	: protective gloves.
Eye protection	: Safety goggles.
Skin and body protection	: Long sleeved clothing and long pants.
Respiratory protection	: In case of large spillages: Wear suitable respiratory protective equipment.
Environmental exposure controls	: Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Dark blue
Color	: Dark blue
Odor	: Slight odor
Odor threshold	: No information available
pH	: 7 - 9
Relative evaporation rate (butyl acetate=1)	: No information available
Relative evaporation rate (ether=1)	: Not available
Melting point	: < 5 °C
Freezing point	: No data available
Boiling point	: > 100 °C
Flash point	: Does not flash at 93.3°C or lower (Tag closed cup & Cleveland opened cup)
Auto-ignition temperature	: > 400 °C
Decomposition temperature	: Not available
Flammability (solid, gas)	: Not applicable
Vapor pressure	: Not available
Relative vapor density at 20 °C	: Not available
Relative density	: No data available
Specific gravity / density	: 1 - 1.1 g/ml
Solubility	: Soluble in water
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: 2 - 5 mPa·s
Viscosity, dynamic	: No data available
Explosive properties	: Not explosive
Oxidizing properties	: Not available
Explosion limits	: Not available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

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10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

No information available.

10.4. Conditions to avoid

No information available.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
LD ₅₀ oral rat	> 2000 mg/kg (OECD 420 method)
Skin corrosion/irritation	: Non-irritant. (OECD 404 method) pH: 7 - 9
Serious eye damage/irritation	: Minimal irritant to the eye. (OECD 405 method) pH: 7 - 9
Respiratory or skin sensitization	: It is not a skin sensitizer. (OECD 429 method)
Germ cell mutagenicity	: Negative. (OECD 471 method)
Carcinogenicity	: Ingredients of this product have not been classified as carcinogens according to IARC monographs, NTP and OSHA
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

glycerol (56-81-5)	
LC ₅₀ fish	51 - 57 ml/l 96 h - Oncorhynchus mykiss
EC ₅₀ Daphnia	> 500 mg/l 24 h - Daphnia magna
Diethylene glycol (111-46-6)	
LC ₅₀ fish	75200 mg/kg 96 h - Pimephales promelas
EC ₅₀ Daphnia	84000 mg/l 48 h - Daphnia magna
Triethylene glycol monobutyl ether (143-22-6)	
LC ₅₀ fish	2200 - 4600 mg/kg 96 h - Leuciscus idus
LC ₅₀ other aquatic organisms	2400 mg/kg 96 h - Pimephales promelas
EC ₅₀ Daphnia	> 500 mg/l 48 h - Daphnia magna
EC ₅₀ other aquatic organisms 1	> 500 mg/l 72 h - Desmodesmus subspicatus

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

glycerol (56-81-5)	
Log Pow	-1.76

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Diethylene glycol (111-46-6)	
Log Pow	-1.98
Triethylene glycol monobutyl ether (143-22-6)	
Log Pow	0.51

12.4. Mobility in soil

Ecology - soil : No information available.

12.5. Results of PBT and vPvB assessment

This substance/mixture does not meet the PBT criteria of REACH, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH, annex XIII
Results of PBT assessment : Not available

12.6. Other adverse effects

Other adverse effects : No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in accordance with federal, state and local regulations.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / DOT / UN

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (ADR/RID) : None
Proper Shipping Name (IATA) : None
Proper Shipping Name (IMDG) : None

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

14.5. Environmental hazards

Other information : None

14.6. Special precautions for user

Special transport precautions : None

14.6.1. Overland transport

No additional information available

14.6.2. Transport by sea

No additional information available

14.6.3. Air transport

No additional information available

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

IBC code : Not applicable

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SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Contains no REACH candidate substance

15.1.2. National regulations

Regional legislation

: EU:Not classified as dangerous for supply/use. (1999/45/EC)

USA: All chemical substances contained in this product are and had been listed on the TSCA Chemical Substances Inventory, and none is subject to any of the following TSCA requirements: section 4 test rules; proposed or final section 5(a)(2) significant new use rules; section 5(e) consent orders; section 8(a) preliminary assessment information rules; and section 8(d) health and safety data reporting rules.

Canada: WHMIS: Not applicable. (Manufactured article).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:
Newly issued.

Data sources

: U.S. 29CFR Part 1910
ACGIH Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices
IARC Monographs on the Evaluation Carcinogenic Risks to Humans World Health Organization
EU Directive 91/322/EEC and 2000/39/EC
NTP 11th Report on Carcinogens.

Abbreviations and acronyms

: IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG (International Maritime Dangerous Goods Code)
IOELV (Indicative Occupational Exposure Limit)
REACH (Registration, Evaluation and Authorisation of CHemicals)
WHMIS (Workplace Hazardous Material Information System (Canada))
ACGIH (American Conference of Governement Industrial Hygienists)
DOT (Department Of Transportation (US))
ICAO (International Civil Aviation Organization)
NOHSC (National Occupational Health and Safety Commission (Australia))
NTP (National Toxicology Program) (US)
OSHA (Occupational Safety and Health Administration) (US)
PEL (Permissible Exposure Limit)
STEL (Short Term Exposure Limit)
TLV (Threshold Limit Value) (ACGIH)
TSCA (Toxic Substances Control Act) (US)
TWA (Time Weighted Average).

Other information

: The information only relates to this specific product. It may not be valid, if used in combination with any other materials or in any other process, and it is based on our best knowledge as of the date of preparation (revision).

Full text of R-, H- and EUH-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Eye Dam. 1	Serious eye damage/eye irritation Category 1
H302	Harmful if swallowed
H318	Causes serious eye damage
R22	Harmful if swallowed
R41	Risk of serious damage to eyes
Xi	Irritant
Xn	Harmful