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## MATERIAL SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name	LC41BK BL	LC47BK BL	LC900BK BL
Product Code	LK1307001	LK1569001	LK1410001
Product Name	LC41BK	LC47BK	LC900BK
Product Code	LK1119001	LK1558001	LK1384001
Product Name	LC41HYBK	LC47HYBK	LC900HYBK
Product Code	LK1159001	LK1562001	LK1388001

Other Designation Ink cartridge for the ink-jet printing machine

These products are water based ink in cartridge. Ink volume in each cartridge is under 35ml. All components in ink are listed on TSCA inventory. All components in ink are listed in EINECS or NLP Inventory. All components in ink are listed on IECSC inventory.

Ink manufacturer BROTHER INDUSTRIES, LTD.

5-1, Hamada-cho, Minami-ku, Nagoya 457-0822, JAPAN  
Telephone Number for Information +81-52-824-3445

Importer  
in USA BROTHER INTERNATIONAL CORPORATION  
100 Somerset Corporate Boulevard, P.O.Box 6911, Bridgewater,  
NJ 08807-0911, USA  
Telephone Number for Information +1-800-284-4329  
Emergency Telephone Number +1-800-284-4329

Importer  
in Canada BROTHER INTERNATIONAL CORP. (Canada) LTD.  
1 rue Hôtel de Ville, Dollard-des-Ormeaux, Québec, H9B 3H6, CANADA  
Telephone Number for Information +1-514-685-0600  
Emergency Telephone Number +1-514-685-0600

Importer  
in Australia BROTHER INTERNATIONAL (AUST.) PTY. LTD. ACN 001 393 835  
7 Khartoum Road, North Ryde, N.S.W. 2113 08875-6714, AUSTRALIA  
Telephone Number for Information +61-2-9887-4344  
Emergency Telephone Number +61-2-9887-4344

Importer  
in Europe BROTHER INTERNATIONAL EUROPE LTD.  
Brother house, 1 Tame Street, Guide Bridge, Audenshaw, Manchester  
M34 5JE, UK  
Telephone Number for Information +44-161-330-6531  
Emergency Telephone Number +44-161-330-6531

Date of Preparation: March 12, 2004 MSDS #BHK010  
Date of Revision:

**2. COMPOSITION / INFORMATION ON INGREDIENTS**

**HAZARDOUS INGREDIENTS** in accordance with Hazard Communication Standard issued by Occupational Safety and Health Administration (OSHA HCS).

<u>INGREDIENT NAME</u> <u>CAS#</u>	<u>EXPOSURE LIMITS</u>	<u>% by weight</u>
Glycerol 56-81-5	OSHA PEL : (as mist) Total dust TWA 10mg/m <sup>3</sup> Respirable fraction TWA 5mg/m <sup>3</sup> ACGIH TLV : (as mist) Total dust TWA 10mg/m <sup>3</sup>	<30
Carbon black 1333-86-4	OSHA PEL : Limits for air contaminant: TWA 3.5mg/m <sup>3</sup> ACGIH TLV : TWA 3.5mg/m <sup>3</sup> Not classifiable as a human carcinogen.	<5

Remaining ingredients are considered non-hazardous in accordance with OSHA HCS.

**HAZARDOUS INGREDIENTS** in accordance with the latest EC-Directive 67/548/EEC.

<u>INGREDIENT NAME</u> <u>CAS#</u>	<u>EEC#</u>	<u>% by weight</u>	<u>Symbol</u>	<u>R phrases</u>
1,2-Benzisothiazolin-3-one 2634-33-5	220-120-9	< 0.05	Xn, N	R22, R38, R41, R43, R50

EU Hazard Symbols : Xn : Harmful  
N : Dangerous for the environment

EU Risk(R) Phrase definitions : R22 : Harmful if swallowed.  
R38 : Irritant to skin.  
R41 : Risk of serious damage to eyes.  
R43 : May cause sensitization by skin contact.  
R50 : Very toxic to aquatic organisms.

Remaining ingredients of the ink are considered non-hazardous in accordance with the latest EU-Directive 67/548/EEC and Approved Criteria of Worksafe Australia.

**3. HAZARDS IDENTIFICATION****EMERGENCY OVERVIEW**

Ink in cartridge is black liquid with slight odor.  
Keep out of reach of children.  
Ink poses little or no immediate hazard if spilled.

**POTENTIAL HEALTH EFFECTS**

EYE CONTACT : Ink may cause slight irritation.  
SKIN CONTACT : Prolonged exposure to ink may cause irritation.  
INGESTION : Ink may cause gastrointestinal or other adverse effects.  
INHALATION : Not expected to be a route of exposure under normal use.



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**CHRONIC EFFECTS / CARCINOGENICITY :**

Specific data are not available. Carbon black has been classified by the IARC as group 2B. Other ingredients of ink have not been classified as carcinogens according to IARC monographs, NTP, and OSHA regulated.

**4. FIRST AID MEASURES**

- EYE CONTACT : Flush immediately with running water for at least 15 minutes and get medical attention.
- SKIN CONTACT : Wash with water and soap.
- INGESTION : Dilute with water and get medical attention.
- INHALATION : Remove to fresh air and get medical attention.

**5. FIRE FIGHTING MEASURES**

- AUTOIGNITION TEMPERATURE : 439°C
- FLAMMABLE LIMITS : LEL : Not available UEL : Not available
- FLASH POINT : Does not flash (>90C)  
(Tag closed cup & Cleveland opened cup)
- EXTINGUISHING MEDIA :
  - SUITABLE: Water, CO<sub>2</sub>, Foam, Dry chemical.
  - NOT TO BE USED :
- SPECIAL EXPOSURE HAZARDS : Refer to section 10.
- SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS :  
Use self-contained breathing apparatus.

**6. ACCIDENTAL RELEASE MEASURES**

- PERSONAL PRECAUTION : In case of ink vapor formation use respirator.
- ENVIRONMENTAL PRECAUTION : Take care to minimize ink that reaches to a sewer.
- METHODS FOR CLEANING UP : Wipe up ink with absorbent towel. Wash with water to remove remaining traces of ink.

**7. HANDLING AND STORAGE**

- HANDLING : Avoid skin contact with ink. Prevent eye contact with ink.
- STORAGE : Keep out of reach of children. Store in a cool, dark, and dry place.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

- ENGINEERING CONTROLS : Ventilation is not required under normal use.
- RESPIRATORY PROTECTION : Not required under normal use.
- HAND PROTECTION : Not required under normal use.
- EYE PROTECTION : Not required under normal use.
- SKIN PROTECTION : Not required under normal use.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE :	Black liquid
BOILING POINT :	104°C
COLOR :	Black
DENSITY :	1.08 g/ml
FREEZING POINT :	-13°C
ODOR :	Slight odor
pH :	7 – 9
PHYSICAL STATE :	Liquid
SOLUBILITY IN WATER :	Soluble
VAPOR DENSITY (AIR=1) :	Not available
VAPOR PRESSURE :	Not available

**10. STABILITY AND REACTIVITY**

STABILITY :	Stable.
CONDITIONS TO AVOID :	None.
MATERIALS TO AVOID :	Strong oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS :	Carbon monoxide, Carbon dioxide.
HAZARDOUS POLYMERIZATION :	Does not occur.

**11. TOXICOLOGICAL INFORMATION**

EYE EFFECTS :	Ink is classified as a MINIMAL IRRITANT.
SKIN EFFECTS :	Ink is classified as a Non IRRITANT.
ACUTE ORAL EFFECTS :	LD <sub>50</sub> of ink is greater than 2500mg/kg.

**12. ECOLOGICAL INFORMATION**

Ink does not contain halogenated compounds.

**13. DISPOSAL CONSIDERATIONS**

Dispose in accordance with federal, state and local regulations.

**14. TRANSPORT INFORMATION**

Not regulated under DOT, IATA and IMDG.

**15. REGULATORY INFORMATION**

All components in ink are listed on TSCA inventory.  
All components in ink are listed in EINECS or NLP Inventory.  
All components in ink are listed on IECSC inventory.  
Ink does not need to be labeled in accordance with EC-Directive 1999/45/EC.

**16. OTHER INFORMATION**

The information relates only to this specific ink cartridge. It may not be valid for this ink cartridge, 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).

## Key

ACGIH TLV	TLV (Threshold Limit Value) under American Conference of Governmental Industrial Hygienists
AICS	Australian Inventory of Chemical Substances
DOT	Department Of Transportation (USA)
EINECS	European Inventory of Existing Commercial Chemical Substances (EU)
ELINCS	European List of Notified Chemical Substances (EU)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IECSC	The Inventory of the Existing Chemical Substances in China
IMDG	International Maritime Dangerous Goods
NLP	No-Longer Polymers List (EU)
NTP	National Toxicology Program (USA)
OSHA	Occupational Safety and Health Administration (USA)
OSHA HCS	Hazard Communication Standard issued by Occupational Safety and Health Administration (USA)
OSHA PEL	PEL (Permissible Exposure Limit) under Occupational Safety and Health Administration (USA)
TSCA	Toxic Substances Control Act (USA)