

Product name: LC20EC, LC22EC, LC23EC, LC201C, LC203C, LC205C, LC211C, LC213C, LC215C, LC221C, LC223C, LC225XLC, LC231C, LC233C, LC235XLC, LC261C, LC263C, LC645C, LC663C, LC665XLC, LC673C, LC675XLC, LC695XLC Ink

Date of issue: 26 September 2013 Revision date: 1 April 2015 Version: 3.0 SDS No:BHC026-01-EUUSOTHER

# SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Name (Product code) : LC20EC(LK9833001), LC22EC(LK98450001), LC23EC(LK9450001), LC201C(LK9289001),

LC203C(LK7747001), LC205C(LK8309001), LC211C(LK9345001), LC213C(LK8547001), LC215C(LK8645001), LC221C(LK9317001), LC223C(LK8387001), LC225XLC(LK8419001), LC231C(LKB287001), LC233C(LK8897001), LC235XLC(LK8921001), LC261C(LKB323001), LC235XLC(LK8921001), LC261C(LKB323001), LC261C(LKB32001), LC261C(LKB3

LC263C(LKB263001), LC645C, LC663C(LK8945001), LC665XLC(LK8969001), LC673C(LK9077001), LC675XLC(LK9047001), LC695XLC(LK9664001)

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]

Hazard pictograms : None. Signal Word : None.

Hazard Statements : EUH208 - Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

Precautionary statements : None.

#### 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
1,2-benzisothiazol-3(2H)-one	(CAS No) 2634-33-5 (EC no) 220-120-9 (EC index no) 613-088-00-6	< 0.05	Xn; R22 Xi; R41 Xi; R38 R43 N; R50	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Acute 1, H400

<sup>\*</sup>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.

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# **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.

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/m³)	10 mg/m³
Czech Republic	Local name	Glycerol, mlha
Czech Republic	Exposure limits (PEL) (mg/m³)	10 mg/m³
Czech Republic	Exposure limits (PEL) (ppm)	2.4 ppm
Czech Republic	Exposure limits (NPK-P) (mg/m³)	15 mg/m³
Czech Republic	Exposure limits (NPK-P) (ppm)	3.7 ppm
Finland	Local name	Glyseroli
Finland	HTP-arvo (8h) (mg/m³)	20 mg/m³

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glycerol (56-81-5)		
France	Local name	Glycérine (aérosols de)
France	VME (mg/m³)	10 mg/m³
Ireland	Local name	Glycerol, mist
Ireland	OEL (8 hours ref) (mg/m³)	10 mg/m³
Poland	Local name	Glicerol aerozole
Poland	NDS (mg/m³)	10 mg/m³
Portugal	Local name	Glicerina, névoas
Portugal	OEL TWA (mg/m³)	10 mg/m³
United Kingdom	Local name	Glycerol, mist
United Kingdom	WEL TWA (mg/m³)	10 mg/m³
USA - ACGIH	Local name	Glycerin mist
USA - ACGIH	ACGIH TWA (mg/m³)	10 mg/m³ mist
USA - ACGIH	Remark (ACGIH)	URT irr
USA - OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ Total dust 5 mg/m³ Respirable Fraction

Austria         Local name         Diethylenglykol           Austria         MAK (mg/m²)         44 mg/m²           Austria         MAK (spm)         10 ppm           Austria         MAK Short time value (mg/m²)         176 mg/m³           Austria         MAK Short time value (ppm)         40 ppm           Denmark         Local name         Diethylenglycol           Denmark         Limit (long-term) (mg/m³)         11 mg/m³           Denmark         Limit (long-term) (ppm)         2.5 ppm           Germany         Local name         2.2°Oxydiethanol           Germany         TRGS 900 Occupational exposure limit value (mg/m³)         44 mg/m³           Germany         TRGS 900 Occupational exposure limit value (ppm)         10 ppm           Germany         TRGS 900 Cocupational exposure limit value (ppm)         10 ppm           Germany         Renark (TRGS 900)         DFG, Y           Ireland         Local name         Diethyleng glycol           Ireland         OEL (8 hours ref) (mg/m³)         100 mg/m³           Ireland         OEL (8 hours ref) (mg/m³)         10 mg/m³           Latvia         Deal name         2,2-oksidietanolis (dietilenglikolis, diglikolis)           Lithuania         IpRV (mg/m³)         10 mg/m³	Diethylene glycol (111-46-6)		
Austria         MAK (ppm)         10 ppm           Austria         MAK Short time value (mg/m³)         176 mg/m³           Austria         MAK Short time value (ppm)         40 ppm           Denmark         Local name         Diethylenglycol           Denmark         Limit (long-term) (mg/m³)         11 mg/m³           Denmark         Limit (long-term) (ppm)         2.5 ppm           Germany         Local name         2,2-Oxydiethanol           Germany         TRGS 900 Occupational exposure limit value (mg/m³)         44 mg/m³           Germany         TRGS 900 Occupational exposure limit value (ppm)         10 ppm           Germany         Remark (TRGS 900)         DFCY           Ireland         Local name         Diethylene glycol           Ireland         OEL (8 hours ref) (mg/m³)         100 mg/m³           Ireland         OEL (8 hours ref) (ppm)         23 ppm           Latvia         Local name         Dietilenglikols           Latvia         OEL TWA (mg/m³)         10 mg/m³           Lithuania         IPRV (mg/m³)         45 mg/m³           Lithuania         IPRV (pm/m²)         45 mg/m³           Lithuania         TPRV (ppm)         20 ppm           Lithuania         TPRV (ppm) <th< td=""><td>Austria</td><td></td><td>Diethylenglykol</td></th<>	Austria		Diethylenglykol
Austria         MAK Short time value (mg/m³)         176 mg/m³           Austria         MAK Short time value (ppm)         40 ppm           Denmark         Local name         Diethylenglycol           Denmark         Limit (long-term) (mg/m³)         11 mg/m³           Denmark         Limit (long-term) (ppm)         2.5 ppm           Germany         Local name         2.2°-Oxydiethanol           Germany         TRGS 900 Occupational exposure limit value (mg/m³)         44 mg/m³           Germany         RGS 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/m³)         100 mg/m³           Ireland         OEL (8 hours ref) (mg/m³)         100 mg/m³           Latvia         Local name         Dietlienglikols (2.2°oksibisetanols.2,2'dihidroksidietilēteris)           Latvia         DEL TWA (mg/m³)         10 mg/m³           Lithuania         IPRV (mg/m³)         45 mg/m³           Lithuania         IPRV (ppm)         10 ppm           Lithuania         TPRV (ppm)         20 ppm           Lithuania         TPRV (ppm)         20 ppm           L	Austria	MAK (mg/m³)	44 mg/m³
Austria         MAK Short time value (ppm)         40 ppm           Denmark         Local name         Diethylenglycol           Denmark         Limit (long-term) (mg/m³)         11 mg/m³           Denmark         Limit (long-term) (ppm)         2.5 ppm           Germany         Local name         2.2°-Oxydiethanol           Germany         TRGS 900 Occupational exposure limit value (mg/m²)         44 mg/m²           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/m³)         100 mg/m³           Ireland         OEL (8 hours ref) (ppm)         23 ppm           Latvia         Dect (8 hours ref) (ppm)         23 ppm           Latvia         Local name         Dietilenglikols (2,2°oksibisetanols,2,2'dihidroksidietileteris)           Latvia         DEL TWA (mg/m³)         10 mg/m³           Lithuania         IPRV (mg/m³)         45 mg/m³           Lithuania         IPRV (mg/m³)         45 mg/m³           Lithuania         TPRV (ppm)         10 ppm           Lithuania         TPRV (mg/m³)         90 mg/m³           Lithu	Austria		
Denmark         Local name         Diethylenglycol           Denmark         Limit (long-term) (mg/m³)         11 mg/m³           Denmark         Limit (long-term) (ppm)         2.5 ppm           Germany         Local name         2.2° Oxydiethanol           Germany         TRGS 900 Occupational exposure limit value (mg/m³)         44 mg/m³           Germany         Remark (TRGS 900 Occupational exposure limit value (ppm)         10 ppm           Germany         Remark (TRGS 900)         DFG,Y           Ireland         Local name         Diethylenglycol           Ireland         OEL (8 hours ref) (mg/m³)         100 mg/m³           Ireland         OEL (8 hours ref) (ppm)         23 ppm           Latvia         OEL (8 hours ref) (ppm)         23 ppm           Latvia         OEL TWA (mg/m³)         10 mg/m³           Latvia         Decl TWA (mg/m³)         10 mg/m³           Lithuania         IPRV (mg/m³)         45 mg/m³           Lithuania         IPRV (mg/m³)         45 mg/m³           Lithuania         IPRV (mg/m³)         90 mg/m³           Lithuania         TPRV (ppm)         20 ppm           Lithuania         TPRV (mg/m³)         0 mg/m³           Lithuania         TPRV (mg/m³)         0 m	Austria	MAK Short time value (mg/m³)	<u> </u>
Denmark         Limit (long-term) (mg/m³)         11 mg/m³           Denmark         Limit (long-term) (ppm)         2.5 ppm           Germany         Local name         2,2°-Oxydiethanol           Germany         TRGS 900 Occupational exposure limit value (mg/m³)         44 mg/m³           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/m³)         100 mg/m³           Ireland         OEL (8 hours ref) (mg/m³)         100 mg/m³           Latvia         Dietlienglikols (2,2°oksibisetanols,2,2°dihidroksidietileteris)           Latvia         OEL TWA (mg/m³)         10 mg/m³           Lithuania         Local name         2,2°oksidietanolis (dietilenglikolis, diglikolis)           Lithuania         IPRV (mg/m³)         45 mg/m³           Lithuania         IPRV (mg/m³)         90 mg/m³           Lithuania         TPRV (ppm)         20 ppm           Lithuania         TPRV (ppm)         20 ppm           Lithuania         Remark (LT)         O           Poland         Local name         Dietilenglicol           Romania	Austria	MAK Short time value (ppm)	40 ppm
Denmark         Limit (long-term) (ppm)         2.5 ppm           Germany         Local name         2,2 Oxydiethanol           Germany         TRGS 900 Occupational exposure limit value (mg/m³)         44 mg/m³           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/m³)         100 mg/m³           Latvia         OEL (8 hours ref) (ppm)         23 ppm           Latvia         Local name         Diettilenglikols (2,2 oksibisetanols, 2,2 dihidroksidietileteris)           Latvia         OEL TWA (mg/m³)         10 mg/m³           Lithuania         Local name         2,2 oksidietanolis (dietilenglikolis, diglikolis)           Lithuania         IPRV (mg/m³)         45 mg/m³           Lithuania         IPRV (mg/m³)         90 mg/m³           Lithuania         TPRV (mg/m³)         90 mg/m³           Lithuania         TPRV (ppm)         20 ppm           Lithuania         Remark (LT)         O           Poland         Local name         2,2 Oksydietanol (glikol dwuetylenowy) aerozol           Poland         NDS (mg/m³)         10 mg/m³ <td>Denmark</td> <td>Local name</td> <td>Diethylenglycol</td>	Denmark	Local name	Diethylenglycol
Germany         Local name         2,2'-Oxydiethanol           Germany         TRGS 900 Occupational exposure limit value (mg/m³)         44 mg/m³           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/m³)         100 mg/m³           Ireland         OEL (8 hours ref) (ppm)         23 ppm           Latvia         Local name         Dietilenglikols (2,2'oksibisetanols,2,2'dihidroksidietilēteris)           Latvia         OEL TWA (mg/m³)         10 mg/m³           Lithuania         Lecal name         2,2-oksidietanolis (dietilenglikolis, diglikolis)           Lithuania         IPRV (mg/m³)         45 mg/m³           Lithuania         IPRV (ppm)         10 ppm           Lithuania         TPRV (ppm)         20 ppm           Lithuania         TPRV (ppm)         20 ppm           Lithuania         Remark (LT)         O           Poland         Local name         2,2'-Oksydietanol (glikol dwuetylenowy) aerozol           Poland         NDS (mg/m³)         10 mg/m³           Romania         Local name         Dietilenglicol	Denmark	Limit (long-term) (mg/m³)	11 mg/m³
Germany         TRGS 900 Occupational exposure limit value (mg/m³)         44 mg/m³           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/m³)         100 mg/m³           Ireland         OEL (8 hours ref) (ppm)         23 ppm           Latvia         Local name         Dietilenglikols (2,2 oksibisetanols,2,2 'dihidroksidietilēteris)           Latvia         OEL TWA (mg/m³)         10 mg/m³           Lithuania         Local name         2,2 oksidietanolis (dietilenglikolis, diglikolis)           Lithuania         IPRV (mg/m³)         45 mg/m³           Lithuania         IPRV (ppm)         10 ppm           Lithuania         TPRV (ppm)         20 ppm           Lithuania         TPRV (ppm)         20 ppm           Lithuania         TPRV (ppm)         20 ppm           Lithuania         Remark (LT)         O           Poland         Local name         2,2'-Oksydietanol (glikol dwuetylenowy) aerozol           Poland         NDS (mg/m³)         10 mg/m³           Romania         Local name         Dietilenglicol           <	Denmark	Limit (long-term) (ppm)	2.5 ppm
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/m³)         100 mg/m³           Ireland         OEL (8 hours ref) (ppm)         23 ppm           Latvia         Local name         Dietilenglikols (c,2'oksibisetanols,2,2'dihidroksidietileteris)           Latvia         OEL TWA (mg/m³)         10 mg/m³           Lithuania         Local name         2,2'oksidietanolis (dietilenglikolis, diglikolis)           Lithuania         IPRV (mg/m³)         45 mg/m³           Lithuania         IPRV (ppm)         10 ppm           Lithuania         TPRV (mg/m³)         90 mg/m³           Lithuania         TPRV (ppm)         20 ppm           Lithuania         Remark (LT)         O           Poland         Local name         2,2'-Oksydietanol (glikol dwuetylenowy) aerozol           Poland         NDS (mg/m³)         10 mg/m³           Romania         Local name         Dietilenglicol           Romania         OEL TWA (mg/m³)         500 mg/m³           Romania         OEL STEL (mg/m²)         800 mg/m³           Romania	Germany	Local name	2,2'-Oxydiethanol
Germany         Remark (TRGS 900)         DFG,Y           Ireland         Local name         Diethylene glycol           Ireland         OEL (8 hours ref) (mg/m³)         100 mg/m³           Ireland         OEL (8 hours ref) (ppm)         23 ppm           Latvia         Local name         Dietilenglikols (2,2'oksibisetanols,2,2'dihidroksidietilēteris)           Latvia         OEL TWA (mg/m³)         10 mg/m³           Lithuania         Local name         2,2-oksidietanolis (dietilenglikolis, diglikolis)           Lithuania         IPRV (mg/m³)         45 mg/m³           Lithuania         IPRV (ppm)         10 ppm           Lithuania         TPRV (ppm)         90 mg/m³           Lithuania         TPRV (ppm)         20 ppm           Lithuania         TPRV (ppm)         20 ppm           Lithuania         Remark (LT)         O           Poland         Local name         2,2'-Oksydietanol (glikol dwuetylenowy) aerozol           Poland         NDS (mg/m³)         10 mg/m³           Romania         Local name         Dietilenglicol           Romania         OEL TWA (mg/m³)         500 mg/m³           Romania         OEL TWA (ppm)         115 ppm           Romania         OEL STEL (mg/m³)         800 m	Germany	TRGS 900 Occupational exposure limit value (mg/m³)	44 mg/m³
Ireland     Local name     Diethylene glycol       Ireland     OEL (8 hours ref) (mg/m³)     100 mg/m³       Ireland     OEL (8 hours ref) (ppm)     23 ppm       Latvia     Local name     Dietilenglikols (2,2'oksibisetanols,2,2'dihidroksidietilēteris)       Latvia     OEL TWA (mg/m³)     10 mg/m³       Lithuania     Local name     2,2-oksidietanolis (dietilenglikolis, diglikolis)       Lithuania     IPRV (mg/m³)     45 mg/m³       Lithuania     IPRV (ppm)     10 ppm       Lithuania     TPRV (mg/m³)     90 mg/m³       Lithuania     TPRV (ppm)     20 ppm       Lithuania     Remark (LT)     O       Poland     Local name     2,2'-Oksydietanol (glikol dwuetylenowy) aerozol       Poland     NDS (mg/m³)     10 mg/m³       Romania     Local name     Dietilenglicol       Romania     OEL TWA (mg/m³)     500 mg/m³       Romania     OEL TWA (ppm)     115 ppm       Romania     OEL STEL (mg/m³)     800 mg/m³       Romania     OEL STEL (ppm)     184 ppm       Spain     Local name     Dietilenglicol	Germany	TRGS 900 Occupational exposure limit value (ppm)	10 ppm
Ireland       OEL (8 hours ref) (mg/m³)       100 mg/m³         Ireland       OEL (8 hours ref) (ppm)       23 ppm         Latvia       Local name       Dietilenglikols (2,2'oksibisetanols,2,2'dihidroksidietileteris)         Latvia       OEL TWA (mg/m³)       10 mg/m³         Lithuania       Local name       2,2-oksidietanolis (dietilenglikolis, diglikolis)         Lithuania       IPRV (mg/m³)       45 mg/m³         Lithuania       IPRV (ppm)       10 ppm         Lithuania       TPRV (ppm)       20 ppm         Lithuania       TPRV (ppm)       20 ppm         Lithuania       Remark (LT)       O         Poland       Local name       2,2'-Oksydietanol (glikol dwuetylenowy) aerozol         Poland       NDS (mg/m³)       10 mg/m³         Romania       Local name       Dietilenglicol         Romania       OEL TWA (mg/m³)       500 mg/m³         Romania       OEL TWA (ppm)       115 ppm         Romania       OEL STEL (mg/m³)       800 mg/m³         Romania       OEL STEL (ppm)       184 ppm         Spain       Local name       Dietilenglicol	Germany	Remark (TRGS 900)	DFG,Y
Ireland         OEL (8 hours ref) (ppm)         23 ppm           Latvia         Local name         Dietilênglikols (2,2'oksibisetanols,2,2'dihidroksidietilêteris)           Latvia         OEL TWA (mg/m³)         10 mg/m³           Lithuania         Local name         2,2-oksidietanolis (dietilenglikolis, diglikolis)           Lithuania         IPRV (mg/m³)         45 mg/m³           Lithuania         IPRV (ppm)         10 ppm           Lithuania         TPRV (mg/m³)         90 mg/m³           Lithuania         TPRV (ppm)         20 ppm           Lithuania         Remark (LT)         O           Poland         Local name         2,2'-Oksydietanol (glikol dwuetylenowy) aerozol           Poland         NDS (mg/m³)         10 mg/m³           Romania         Local name         Dietilenglicol           Romania         OEL TWA (mg/m³)         500 mg/m³           Romania         OEL TWA (ppm)         115 ppm           Romania         OEL STEL (mg/m³)         800 mg/m³           Romania         OEL STEL (ppm)         184 ppm           Spain         Local name         Dietilenglicol	Ireland	Local name	Diethylene glycol
Latvia Local name Dietilēnglikols (2,2'oksibisetanols,2,2'dihidroksidietilēteris)  Latvia OEL TWA (mg/m³) 10 mg/m³  Lithuania Local name 2,2-oksidietanolis (dietilenglikolis, diglikolis)  Lithuania IPRV (mg/m³) 45 mg/m³  Lithuania IPRV (ppm) 10 ppm  Lithuania TPRV (mg/m³) 90 mg/m³  Lithuania TPRV (ppm) 20 ppm  Lithuania TPRV (ppm) 20 ppm  Lithuania Remark (LT) O  Poland Local name 2,2'-Oksydietanol (glikol dwuetylenowy) aerozol  Poland NDS (mg/m³) 10 mg/m³  Romania Local name Dietilenglicol  Romania OEL TWA (mg/m³) 500 mg/m³  Romania OEL TWA (ppm) 115 ppm  Romania OEL STEL (mg/m³) 800 mg/m³  Romania OEL STEL (mg/m³) 800 mg/m³  Romania OEL STEL (ppm) 184 ppm  Spain Local name Dietilenglicol	Ireland	OEL (8 hours ref) (mg/m³)	100 mg/m³
LatviaOEL TWA (mg/m³)10 mg/m³LithuaniaLocal name2,2-oksidietanolis (dietilenglikolis, diglikolis)LithuaniaIPRV (mg/m³)45 mg/m³LithuaniaIPRV (ppm)10 ppmLithuaniaTPRV (mg/m³)90 mg/m³LithuaniaTPRV (ppm)20 ppmLithuaniaTPRV (ppm)0LithuaniaRemark (LT)OPolandLocal name2,2'-Oksydietanol (glikol dwuetylenowy) aerozolPolandNDS (mg/m³)10 mg/m³RomaniaLocal nameDietilenglicolRomaniaOEL TWA (mg/m³)500 mg/m³RomaniaOEL TWA (ppm)115 ppmRomaniaOEL STEL (mg/m³)800 mg/m³RomaniaOEL STEL (ppm)184 ppmSpainLocal nameDietilenglicol	Ireland	OEL (8 hours ref) (ppm)	23 ppm
Lithuania Local name 2,2-oksidietanolis (dietilenglikolis, diglikolis)  Lithuania IPRV (mg/m³) 45 mg/m³  Lithuania IPRV (ppm) 10 ppm  Lithuania TPRV (mg/m³) 90 mg/m³  Lithuania TPRV (ppm) 20 ppm  Lithuania Remark (LT) O  Poland Local name 2,2'-Oksydietanol (glikol dwuetylenowy) aerozol  Poland NDS (mg/m³) 10 mg/m³  Romania Local name Dietilenglicol  Romania OEL TWA (mg/m³) 500 mg/m³  Romania OEL TWA (ppm) 115 ppm  Romania OEL STEL (mg/m³) 800 mg/m³  Romania OEL STEL (ppm) 184 ppm  Spain Local name Dietilenglicol	Latvia	Local name	
Lithuania IPRV (mg/m³) 45 mg/m³  Lithuania IPRV (ppm) 10 ppm  Lithuania TPRV (mg/m³) 90 mg/m³  Lithuania TPRV (ppm) 20 ppm  Lithuania Remark (LT) O  Poland Local name 2,2'-Oksydietanol (glikol dwuetylenowy) aerozol  Poland NDS (mg/m³) 10 mg/m³  Romania Local name Dietilenglicol  Romania OEL TWA (mg/m³) 500 mg/m³  Romania OEL TWA (ppm) 115 ppm  Romania OEL STEL (mg/m³) 800 mg/m³  Romania OEL STEL (ppm) 184 ppm  Spain Local name Dietilenglicol	Latvia	OEL TWA (mg/m³)	10 mg/m³
Lithuania IPRV (ppm) 10 ppm  Lithuania TPRV (mg/m³) 90 mg/m³  Lithuania TPRV (ppm) 20 ppm  Lithuania Remark (LT) O  Poland Local name 2,2'-Oksydietanol (glikol dwuetylenowy) aerozol  Poland NDS (mg/m³) 10 mg/m³  Romania Local name Dietilenglicol  Romania OEL TWA (mg/m³) 500 mg/m³  Romania OEL TWA (ppm) 115 ppm  Romania OEL STEL (mg/m³) 800 mg/m³  Romania OEL STEL (ppm) 184 ppm  Spain Local name Dietilenglicol	Lithuania	Local name	2,2-oksidietanolis (dietilenglikolis, diglikolis)
Lithuania TPRV (mg/m³) 90 mg/m³  Lithuania TPRV (ppm) 20 ppm  Lithuania Remark (LT) O  Poland Local name 2,2'-Oksydietanol (glikol dwuetylenowy) aerozol  Poland NDS (mg/m³) 10 mg/m³  Romania Local name Dietilenglicol  Romania OEL TWA (mg/m³) 500 mg/m³  Romania OEL TWA (ppm) 115 ppm  Romania OEL STEL (mg/m³) 800 mg/m³  Romania OEL STEL (ppm) 184 ppm  Spain Local name Dietilenglicol	Lithuania	IPRV (mg/m³)	45 mg/m³
Lithuania TPRV (ppm) 20 ppm  Lithuania Remark (LT) O  Poland Local name 2,2'-Oksydietanol (glikol dwuetylenowy) aerozol  Poland NDS (mg/m³) 10 mg/m³  Romania Local name Dietilenglicol  Romania OEL TWA (mg/m³) 500 mg/m³  Romania OEL TWA (ppm) 115 ppm  Romania OEL STEL (mg/m³) 800 mg/m³  Romania OEL STEL (mg/m³) 184 ppm  Spain Local name Dietilenglicol	Lithuania	IPRV (ppm)	10 ppm
Lithuania Remark (LT) O  Poland Local name 2,2'-Oksydietanol (glikol dwuetylenowy) aerozol  Poland NDS (mg/m³) 10 mg/m³  Romania Local name Dietilenglicol  Romania OEL TWA (mg/m³) 500 mg/m³  Romania OEL TWA (ppm) 115 ppm  Romania OEL STEL (mg/m³) 800 mg/m³  Romania OEL STEL (ppm) 184 ppm  Spain Local name Dietilenglicol	Lithuania	TPRV (mg/m³)	90 mg/m <sup>3</sup>
Poland Local name 2,2'-Oksydietanol (glikol dwuetylenowy) aerozol  Poland NDS (mg/m³) 10 mg/m³  Romania Local name Dietilenglicol  Romania OEL TWA (mg/m³) 500 mg/m³  Romania OEL TWA (ppm) 115 ppm  Romania OEL STEL (mg/m³) 800 mg/m³  Romania OEL STEL (ppm) 184 ppm  Spain Local name Dietilenglicol	Lithuania	TPRV (ppm)	20 ppm
Poland         NDS (mg/m³)         10 mg/m³           Romania         Local name         Dietilenglicol           Romania         OEL TWA (mg/m³)         500 mg/m³           Romania         OEL TWA (ppm)         115 ppm           Romania         OEL STEL (mg/m³)         800 mg/m³           Romania         OEL STEL (ppm)         184 ppm           Spain         Local name         Dietilenglicol	Lithuania	Remark (LT)	0
Romania         Local name         Dietilenglicol           Romania         OEL TWA (mg/m³)         500 mg/m³           Romania         OEL TWA (ppm)         115 ppm           Romania         OEL STEL (mg/m³)         800 mg/m³           Romania         OEL STEL (ppm)         184 ppm           Spain         Local name         Dietilenglicol	Poland	Local name	2,2'-Oksydietanol (glikol dwuetylenowy) aerozol
Romania         OEL TWA (mg/m³)         500 mg/m³           Romania         OEL TWA (ppm)         115 ppm           Romania         OEL STEL (mg/m³)         800 mg/m³           Romania         OEL STEL (ppm)         184 ppm           Spain         Local name         Dietilenglicol	Poland	NDS (mg/m³)	10 mg/m³
Romania         OEL TWA (ppm)         115 ppm           Romania         OEL STEL (mg/m³)         800 mg/m³           Romania         OEL STEL (ppm)         184 ppm           Spain         Local name         Dietilenglicol	Romania	Local name	Dietilenglicol
Romania         OEL STEL (mg/m³)         800 mg/m³           Romania         OEL STEL (ppm)         184 ppm           Spain         Local name         Dietilenglicol	Romania	OEL TWA (mg/m³)	500 mg/m³
Romania         OEL STEL (ppm)         184 ppm           Spain         Local name         Dietilenglicol	Romania	OEL TWA (ppm)	115 ppm
Spain Local name Dietilenglicol	Romania	OEL STEL (mg/m³)	800 mg/m³
	Romania	OEL STEL (ppm)	184 ppm
Spain         VLA-ED (mg/m³)         44 mg/m³	Spain	Local name	Dietilenglicol
	Spain	VLA-ED (mg/m³)	44 mg/m³

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Product name: LC20EC, LC22EC, LC23EC, LC201C, LC203C, LC205C, LC211C, LC213C, LC215C, LC221C, LC223C, LC225XLC, LC231C, LC233C, LC235XLC, LC261C, LC263C, LC645C, LC663C, LC665XLC, LC673C, LC675XLC, LC695XLC Ink

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Diethylene glycol (111	Diethylene glycol (111-46-6)		
Spain	VLA-ED (ppm)	10 ppm	
Spain	VLA-EC (mg/m³)	176 mg/m³	
Spain	VLA-EC (ppm)	40 ppm	
Sweden	Local name	Diethylene glycol	
Sweden	nivågränsvärde (NVG) (mg/m³)	45 mg/m³	
Sweden	nivågränsvärde (NVG) (ppm)	10 ppm	
Sweden	kortidsvärde (KTV) (mg/m³)	90 mg/m³	
Sweden	kortidsvärde (KTV) (ppm)	20 ppm	
United Kingdom	Local name	2,2'-Oxydiethanol	
United Kingdom	WEL TWA (mg/m³)	101 mg/m³	
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.

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Product name: LC20EC, LC22EC, LC23EC, LC201C, LC203C, LC205C, LC211C, LC213C, LC215C, LC221C, LC223C, LC225XLC, LC231C, LC233C, LC235XLC, LC261C, LC263C, LC645C, LC663C, LC665XLC, LC673C, LC675XLC, LC695XLC Ink

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# **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 :  $> 100 \, ^{\circ}\text{C}$ 

Flash point : Does not flash at 93.3°C or lower (Tag closed cup & Cleveland opened cup)

: Not available

Auto-ignition temperature : > 400 °C : Not available Decomposition temperature Flammability (solid, gas) : Not applicable : Not available Vapor pressure Relative vapor density at 20 °C : Not available : No data available Relative density 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

9.2. Other information

No additional information available

# **SECTION 10: Stability and reactivity**

## 10.1. Reactivity

No information available.

## 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.



Product name: LC20EC, LC22EC, LC23EC, LC201C, LC203C, LC205C, LC211C, LC213C, LC215C, LC221C, LC223C, LC225XLC, LC231C, LC233C, LC235XLC, LC261C, LC263C, LC645C, LC663C, LC665XLC, LC673C, LC675XLC, LC695XLC Ink

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# **SECTION 11: Toxicological information**

11.1. Information on toxicological effects

Acute toxicity : Not classified

LD<sub>50</sub> 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 : Not classified

exposure)

Aspiration hazard : Not classified

# **SECTION 12: Ecological information**

#### 12.1. Toxicity

glycerol (56-81-5)	
LC <sub>50</sub> fish	51 - 57 ml/l 96 h - Oncorhynchus mykiss
EC <sub>50</sub> Daphnia	> 500 mg/l 24 h - Daphnia magna

Diethylene glycol (111-46-6)	
LC <sub>50</sub> fish	75200 mg/kg 96 - Pimephales promelas
EC <sub>50</sub> Daphnia	84000 mg/l 48 h - Daphnia magna

Triethylene glycol monobutyl ether (143-22-6)	
LC <sub>50</sub> fish	2200 - 4600 mg/kg 96 h - Leuciscus idus
LC <sub>50</sub> other aquatic organisms	2400 mg/kg 96 h - Pimephales promelas
EC <sub>50</sub> Daphnia	> 500 mg/l 48 h - Daphnia magna
EC <sub>50</sub> 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

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

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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

# **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).

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Product name: LC20EC, LC22EC, LC23EC, LC201C, LC203C, LC205C, LC211C, LC213C, LC215C, LC221C, LC223C, LC225XLC, LC231C, LC233C, LC235XLC, LC261C, LC263C, LC645C, LC663C, LC665XLC, LC673C, LC675XLC, LC695XLC Ink

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#### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

# **SECTION 16: Other information**

Indication of changes: SECTION 1, 2, 3.

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 Government 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
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
H302	Harmful if swallowed
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H400	Very toxic to aquatic life
R22	Harmful if swallowed
R41	Risk of serious damage to eyes
R38	Irritating to skin
R43	May cause sensitization by skin contact
R50	Very toxic to aquatic organisms
N	Dangerous for the environment
Xi	Irritant
Xn	Harmful

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