



## **MATERIAL SAFETY DATA SHEET**

According to EC Directive 91/155 EC

Date: 01/05/10

### 1. Identification of the substance/preparation and of the company/ undertaking

#### 1.1 Product Details:

Trade Name: Chloramphenicol Solution

Catalogue Number: BIO-87027, 10ml

#### 1.2 Company Details:

Manufacturer/ Supplier: Bioline  
16 The Edge Business Centre  
Humber Road  
London  
NW2 6EW  
Tel: +44 (0)20 8830 5300  
Fax: +44 (0)20 8452 2822

Further Information Obtainable from:

Technical Services  
Details as above

#### 1.3 Emergency Details:

24-Hour Contact in case of emergency:

Vergiftungs-Informationen-Zentrale  
Mathilden Strasse 1  
79106 Freiburg  
GERMANY  
Tel: +49 (0) 761 19240

## 2. Composition/ Information on Ingredients

### 2.1 Chemical Characterisation:

Description: Mixture of substances listed below with non-hazardous additions.

Dangerous Components:

ETHYL ALCOHOL

CAS #	EC #	Annex I Index #	Symbols
64-17-5	200-578-6	603-002-00-5	F

R-Phrases: R11  
Highly Flammable

CHLORAMPHENICOL

CAS #	EC #	Annex I Index #	Symbols
56-75-7	200-287-4	None	T

R-Phrases: R45  
May cause cancer

## 3. Hazards Identification

### 3.1 Precautionary Statements:

R11: Highly Flammable  
R45: May cause cancer.

## 4. First Aid Measures

### 4.1 After Inhalation:

Remove to fresh air. If irritation persists consult a doctor immediately.

### 4.2 After Swallowing:

Wash mouth out with water provided the person is conscious. Consult a doctor immediately.

### 4.3 After Contact with Eyes:

Immediately flush eyes with copious amounts of water for several minutes. Ensure adequate flushing by separating the eyelids with fingers. Consult a doctor immediately.

### 4.4 After Contact with Skin:

Immediately wash with soap and copious amounts of water. Remove any contaminated clothing and shoes. If irritation develops consult a doctor immediately.

## 5. Fire Fighting Measures

### 5.1 Suitable Extinguishing Media:

Water spray, CO<sub>2</sub> or dry chemical powder. Large fires should be confronted with water spray or alcohol resistant foam.

### 5.2 Unusual Fire Hazard:

Emits toxic fumes when on fire. Combustible liquid.

### 5.3 Fire Fighting Protective Measures:

Wear protective clothing to prevent contact with the skin and eyes.

Wear self-contained breathing equipment to prevent inhalation of explosive or combustion gasses.

## 6. Accidental Release Measures

### 6.1 Personal Precautions:

Wear chemical safety goggles, rubber boots, respirator and heavy rubber gloves.

### 6.2 Environmental Precautions:

Do not allow to enter the surface or ground water. Do not allow to enter sewers.

### 6.3 Clean-up Measures:

Use a liquid-binding material (e.g. sand, sawdust, diatomite etc.) to absorb the spillage. Place in closed containers for disposal. Ventilate area well and wash spill site after clean-up procedures have taken place.

## 7. Handling and Storage

### 7.1 Handling:

Avoid inhalation of vapour. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure.

### 7.2 Storage:

Keep tightly closed. Keep away from heat and open flame.

Store at  $-20^{\circ}\text{C}$ .

## 8. Exposure Controls/ Personal Protection

### 8.1 Engineering Measures:

Mechanical exhaust required.

### 8.2 Personal Protection:

Respiratory Protection: Wear appropriate government approved respirator.

Hand Protection: Gloves should be worn, either rubber or chemical resistant.

Eye Protection: Wearing safety goggles is advised, as is the availability of eye-wash stations.

Skin Protection: Lab coats should be worn during handling. Safety deluge showers should be available.

Hygiene Practices: Avoid contact with skin or eyes. Do not place in mouth.

Do not eat, drink or smoke when handling this product. Upon completion of the use of this product, dispose of protective gloves safely and wash hands thoroughly with soap and water.

## 9. Physical and Chemical Properties

### 9.1 Physical Properties

Appearance: Liquid, colourless.

### 9.1 Chemical Properties

Concentration: 50mg/ml

Melting point/Melting range : Undetermined  
Boiling point/Boiling range: Undetermined  
Flash Point: Not Applicable  
Autoflammability: Product is not self-igniting  
Ignition Temperature: Undetermined  
Explosive Properties: None  
Relative Density: Undetermined  
Solubility in Water: Fully Soluble

## 10. Stability and Reactivity

### 10.1 Stability

Product is stable under normal handling and storage conditions.

Materials to avoid: Strong oxidising agents, Acids, Acid Chlorides, Acid Anhydrides.

### 10.2 Reactivity

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen Oxides, Hydrogen Chloride gas.

Hazardous Polymerisation: Will not occur.

## 11. Toxicological Information

### 11.1 Primary Irritant Effect:

R45: May cause cancer.

### 11.2 Sensitisation Effects:

RTECS NUMBER: AB6825000

ACUTE TOXICITY

LDLO

Oral

Woman

400 mg/kg

Remarks: Lungs, Thorax, or Respiration:Cyanosis. Vascular:Shock.

Behavioral:Coma.

LDLO

Intravenous

Infant

30 MG/KG

3D-I

Remarks: Vascular:BP lowering not characterized in autonomic section. Cardiac:Cardiac output.

LD50

Oral

Rat

2500 mg/kg

LD50

Intraperitoneal

Rat

1811 MG/KG

LD50

Subcutaneous

Rat

5 GM/KG

Remarks: Gastrointestinal:Hypermotility, diarrhoea.

LD50

Intravenous

Rat

171 MG/KG

LD50

Oral

Mouse

1500 mg/kg

LD50

Intraperitoneal

Mouse

1100 MG/KG

LD50

Subcutaneous

Mouse

400 MG/KG

LD50

Intravenous

Mouse

110 MG/KG

Remarks: Behavioral:Somnolence (general depressed activity).

Lungs, Thorax, or Respiration:Other changes. Behavioral:Ataxia.

LD50

Intravenous

Rabbit

117 MG/KG

LD50

Oral

Guinea pig

500 mg/kg

LD50

Intravenous

Guinea pig

560 MG/KG

SENSITIZATION

Sensitization: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

#### SIGNS AND SYMPTOMS OF EXPOSURE

Nausea, headache, and vomiting. Exposure may cause depression of the bone marrow and blood dyscrasias.

#### ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: May cause eye irritation.

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

#### 11.3 Further Toxicological Information

Target Organ information: Blood, Liver, Central Nervous System. Bone Marrow.

#### CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Woman

Route of Application: Oral

Exposure Time: 60W

Result: Tumorigenic:Carcinogenic by RTECS criteria.

Blood:Changes in bone marrow not included above. Blood:Leukemia

Mouse

Route of Application: Intraperitoneal  
Exposure Time: 5W  
Result: Blood:Lymphomas including Hodgkin's disease.  
Tumorigenic: Equivocal tumorigenic agent by RTECS criteria.  
Woman  
Route of Application: Oral  
Exposure Time: 6W  
Result: Blood:Leukemia Blood:Aplastic anemia.  
Tumorigenic: Carcinogenic by RTECS criteria.  
Man  
Route of Application: Oral  
Exposure Time: W  
Result: Tumorigenic: Carcinogenic by RTECS criteria.  
Blood: Aplastic anemia. Blood: Leukemia  
IARC CARCINOGEN LIST  
Rating: Group 2A  
CHRONIC EXPOSURE - MUTAGEN  
Result: Laboratory experiments have shown mutagenic effects.  
Human  
1 MMOL/L  
Cell Type: liver  
Unscheduled DNA synthesis  
Human  
1500 UMO/L  
Cell Type: Bone marrow  
DNA inhibition  
Human  
1 MMOL/L  
Cell Type: lymphocyte  
DNA inhibition  
Human  
100 MG/L  
Cell Type: leukocyte  
Cytogenetic analysis  
Human  
500 MG/L  
Cell Type: lymphocyte  
Cytogenetic analysis  
Rat  
1600 UMOL/L  
Cell Type: liver  
DNA repair  
Rat  
4 MMOL/L  
Cell Type: lung  
DNA damage  
Rat  
2 MMOL/L  
Cell Type: liver  
DNA damage  
Rat  
2 MMOL/L  
Cell Type: liver  
Unscheduled DNA synthesis  
Rat  
1 GM/KG  
Cell Type: HeLa cell  
Body fluid assay  
Mouse  
500 MG/KG

Intraperitoneal  
Cytogenetic analysis  
Mouse

50 MG/KG

Parenteral

Cytogenetic analysis

Hamster

30 MG/L

Cell Type: Embryo

Sister chromatid exchange

Domestic Animals

500 UG/L

Cell Type: leukocyte

Cytogenetic analysis

Pig

50 UG/L

Cell Type: leukocyte

Cytogenetic analysis

Cattle, Horse

5 MG/L

Cell Type: fibroblast

Sister chromatid exchange

Cattle, Horse

5 MG/L

Cell Type: lymphocyte

Sister chromatid exchange

CHRONIC EXPOSURE - TERATOGEN

Result: Possible risk of congenital malformation in the fetus.

Species: Rat

Dose: 23 GM/KG

Route of Application: Oral

Exposure Time: (1-21D PREG)

Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on

Embryo or Fetus: Other effects to embryo. Specific Developmental Abnormalities:

Homeostasis

Species: Rat

Dose: 2500 MG/KG

Route of Application: Oral

Exposure Time: (9D PREG)

Result: Specific Developmental Abnormalities: Central nervous system.

Species: Rat

Dose: 2500 MG/KG

Route of Application: Oral

Exposure Time: (11D PREG)

Result: Effects on Embryo or Fetus: Fetal death.

Species: Rat

Dose: 2 GM/KG

Route of Application: Oral

Exposure Time: (8D PREG)

Result: Specific Developmental Abnormalities: Body wall. Effects on Embryo or Fetus: Fetal

death. Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Rat

Dose: 3500 MG/KG

Route of Application: Subcutaneous

Exposure Time: (6 -10D PREG)

Result: Specific Developmental Abnormalities: Urogenital system.

Specific Developmental Abnormalities: Eye, ear.

Species: Rat

Dose: 2 GM/KG

Route of Application: Intravenous

Exposure Time: (10-14D PREG)  
Result: Effects on Embryo or Fetus: Other effects to embryo.  
Effects on Embryo or Fetus: Cytological changes (including somatic cell genetic material).  
Species: Mouse  
Dose: 5500 MG/KG  
Route of Application: Oral  
Exposure Time: (5-15D PREG)  
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).  
Species: Mouse  
Dose: 6 GM/KG  
Route of Application: Oral  
Exposure Time: (8-10D PREG)  
Result: Effects on Embryo or Fetus: Fetal death.  
Species: Mouse  
Dose: 2 GM/KG  
Route of Application: Parenteral  
Exposure Time: (12-14D PREG)  
Result: Specific Developmental Abnormalities: Central nervous system.  
Species: Rabbit  
Dose: 4 GM/KG  
Route of Application: Oral  
Exposure Time: (6-9D PREG)  
Result: Specific Developmental Abnormalities: Musculoskeletal system.  
CHRONIC EXPOSURE - REPRODUCTIVE HAZARD  
Species: Rat  
Dose: 250 MG/KG  
Route of Application: Intraperitoneal  
Exposure Time: (3D PREG)  
Result: Effects on Fertility: Other measures of fertility  
Species: Rat  
Dose: 2400 MG/KG  
Route of Application: Subcutaneous  
Exposure Time: (12-14D PREG)  
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).  
Species: Rat  
Dose: 3500 MG/KG  
Route of Application: Subcutaneous  
Exposure Time: (6-10D PREG)  
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.  
Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).  
Species: Mouse  
Dose: 7 GM/KG  
Route of Application: Oral  
Exposure Time: (6-12D PREG)  
Result: Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).  
Specific Developmental Abnormalities: Musculoskeletal system.  
Species: Mouse  
Dose: 175 MG/KG  
Route of Application: Oral  
Exposure Time: (15-21D PREG)  
Result: Effects on Newborn: Behavioral.  
Species: Rabbit  
Dose: 4 GM/KG  
Route of Application: Oral  
Exposure Time: (8-11D PREG)



Result: Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

Species: Rabbit

Dose: 2700 MG/KG

Route of Application: Parenteral

Exposure Time: (11-19D PREG)

Result: Effects on Fertility: Abortion. Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

Species: Rabbit

Dose: 2700 MG/KG

Route of Application: Parenteral

Exposure Time: (2-10D PREG)

Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated ).

## 12. Ecological Information

### 12.1 Environmental Effects

Environmental Fate/Stability: Unknown

Effects on Plants or Animals: Unknown

### 12.2 Water Hazard

Unknown.

Do not allow product to come into contact with surface or ground water, and do not allow it to reach the sewage system.

## 13. Disposal Considerations

### 13.1 Product Disposal:

This product must not be disposed of with household waste or in any other manner that may lead to it entering the sewage system. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all environmental regulations.

### 13.2 Packaging Disposal:

Unclean packaging should be disposed of according to official regulations.

## 14. Transport Information

### 14.1 Land Transport:

RID/ADR

UN#: 1170

Class: 3

PG: III

Proper Shipping Name: Ethanol solution

### 14.2 Maritime Transport:

IMDG

UN#: 1170

Class: 3

PG: III

Proper Shipping Name: ETHANOL SOLUTIONS

Marine Pollutant: No

Severe Marine Pollutant: No

### 14.3 Air Transport

IATA

UN#: 1170  
Class: 3  
PG: III  
Proper Shipping Name: Ethanol solution  
Inhalation Packing Group I: No

## 15. Regulatory Information

### 15.1 Labelling According to EU Guidelines

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: T: Toxic. F: Flammable

R-PHRASES: 45

May cause cancer.

S-PHRASES: 53-45

Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 3

## 16. Other Information

The information provided in this Material Safety Data Sheet (MSDS) is accurate to the best of our present knowledge. However, this shall not constitute a guarantee for any specific product features. All substances and preparations may present unknown hazards and should be used with caution. Bioline shall not be held liable for any damage resulting from the handling of or from contact with the above product. The information supplied in this MSDS shall not establish a legally valid contractual relationship.

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