SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Date of issue: 02.09.2013 Version 1.0

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Catalogue No.	105387
Product name	Leishman's eosin methylene blue solution modified for microscopy
REACH Registration Number	This product is a mixture. REACH Registration Number see section 3.

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

Identified uses	In vitro diagnostic reagent, Reagent for analysis For additional information on uses please refer to the Merck Chemicals portal (www.merck-chemicals.com).

1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	EHS Manager *+61 (3) 8727 6300 * Monday through Friday, 8:00am to 5:00pm (EST)
Regional representation	Merck Pty. Limited ABN 80 001 239 818 Ground Floor, Building 1 885 Mountain Highway Bayswater VIC 3153 Australia www.merckmillipore.com

1.4 Emergency telephone number

+61 (3) 8727 6300
After hours: CHEMCALL +64 4 917 9888
Poisons Information Centre: 13 1126

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquid, Category 2, H225
Acute toxicity, Category 3, Oral, H301
Acute toxicity, Category 3, Inhalation, H331
Acute toxicity, Category 3, Dermal, H311
Specific target organ toxicity - single exposure, Category 1, Eyes, H370

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification (67/548/EEC or 1999/45/EC)

F	Highly flammable	R11
T	Toxic	R23/24/25 - 39/23/24/25

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

Signal word
Danger

Hazard statements
H225 Highly flammable liquid and vapour.
H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled
H370 Causes damage to organs (Eyes).

Precautionary statements
Prevention
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P280 Wear protective gloves/ protective clothing.
Response
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.
Storage
P403 + P235 Store in a well-ventilated place. Keep cool.

Reduced labelling (≤125 ml)

Hazard pictograms

Signal word
Danger

Hazard statements
H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled
H370 Causes damage to organs (Eyes).

Precautionary statements
P280 Wear protective gloves/ protective clothing.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

Contains: methanol

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature Methanolic dye solution.

3.1 Substance
not applicable

3.2 Preparation

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical Name (Concentration)

CAS-No. Registration number Classification

methanol *(>= 50 % - <= 100 %)*

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

67-56-1 *)

Flammable liquid, Category 2, H225
Acute toxicity, Category 3, H301
Acute toxicity, Category 3, H331
Acute toxicity, Category 3, H311
Specific target organ toxicity - single exposure, Category 1, H370

ethylene glycol *(>= 1 % - < 10 %)*

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

107-21-1 *) Acute toxicity, Category 4, H302

*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

For the full text of the H-Statements mentioned in this Section, see Section 16.

Hazardous components (1999/45/EC)

Chemical Name (Concentration)

CAS-No. Classification

methanol *(>= 50 % - <= 100 %)*

67-56-1 F, Highly flammable; R11
T, Toxic; R23/24/25-39/23/24/25

ethylene glycol *(>= 1 % - < 10 %)*

107-21-1 Xn, Harmful; R22

For the full text of the R-phrases mentioned in this Section, see Section 16.

SECTION 4. First aid measures

4.1 Description of first aid measures

General advice

First aider needs to protect himself.

After inhalation: fresh air. If breathing stops: immediately apply artificial respiration, if necessary oxygen. Immediately call in physician.

After skin contact: wash off with plenty of water. Remove contaminated clothing. Consult a physician.

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist if necessary.

After swallowing: fresh air. Make victim drink ethanol (e.g. 1 drinking glass of a 40% alcoholic beverage). Call a doctor immediately (mention methanol ingestion). Only in exceptional cases, if no medical care is available within one hour, induce vomiting (only in fully conscious persons) and make victim drink ethanol again (approx. 0.3 ml of a 40% alcoholic beverage/kg body weight/hour).

4.2 Most important symptoms and effects, both acute and delayed

irritant effects, Drowsiness, Dizziness, narcosis, agitation, spasms, inebriation, Nausea, Vomiting, Headache, blindness, Impairment of vision, Coma
Drying-out effect resulting in rough and chapped skin.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Carbon dioxide (CO2), Foam, Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Combustible.
Vapours are heavier than air and may spread along floors.
Forms explosive mixtures with air at ambient temperatures.
Pay attention to flashback.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Special protective equipment for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information
Cool closed containers exposed to fire with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

6.2 Environmental precautions

Do not empty into drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. Observe label precautions.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep locked up or in an area accessible only to qualified or authorised persons. Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.

Store at +15°C to +25°C.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

methanol (67-56-1)

AU OEL	Skin designation:		Can be absorbed through the skin.
	Short Term Exposure Limit (STEL):	250 ppm 328 mg/m³	
	Time Weighted Average (TWA):	200 ppm 262 mg/m³	

ethylene glycol (107-21-1)

AU OEL	Skin designation:		Can be absorbed through the skin. Form of exposure: Particulate.
	Skin designation:		Can be absorbed through the skin. Form of exposure: Vapor.
	Time Weighted Average (TWA):	10 mg/m³	Form of exposure: Particulate.
	Short Term Exposure Limit (STEL):	40 ppm 104 mg/m³	Form of exposure: Vapor.
	Time Weighted Average (TWA):	20 ppm 52 mg/m³	Form of exposure: Vapor.

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures
Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection
Safety glasses

Hand protection

full contact:

Glove material:	butyl-rubber
Glove thickness:	0,7 mm
Break through time:	> 480 min

splash contact:

Glove material:	Viton (R)
Glove thickness:	0,70 mm
Break through time:	> 120 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 890 Vitoject® (splash contact).
The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.
This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment
Flame retardant antistatic protective clothing

Respiratory protection
required when vapours/aerosols are generated.
Recommended Filter type: Filter AX (EN 371)
The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls
Do not empty into drains.
Risk of explosion.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	blue
Odour	of methanol

Odour Threshold	No information available.
pH	No information available.
Melting point	No information available.
Boiling point/boiling range	65 °C at 1.013 hPa
Flash point	12 °C
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	5,5 %(V) Methanol
Upper explosion limit	44 %(V) Methanol
Vapour pressure	128 hPa at 20 °C
Relative vapour density	No information available.
Relative density	0,79 g/cm³ at 20 °C
Water solubility	at 20 °C soluble
Partition coefficient: n-octanol/water	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	No information available.
Oxidizing properties	No information available.

9.2 Other data

Ignition temperature	ca. 455 °C Methanol

SECTION 10. Stability and reactivity

10.1 Reactivity

Vapours may form explosive mixture with air.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions
Risk of explosion with:

Oxidizing agents, perchloric acid, perchlorates, salts of oxyhalogenic acids, chromium(VI) oxide, halogen oxides, nitrogen oxides, nonmetallic oxides, chromosulfuric acid, chlorates, hydrides, zinc diethyl, halogens, magnesium, hydrogen peroxide, Nitric acid

Exothermic reaction with:

acid halides, Acid anhydrides, Reducing agents, acids

Generates dangerous gases or fumes in contact with:

Alkaline earth metals, Alkali metals

10.4 Conditions to avoid
Warming.

10.5 Incompatible materials
Aluminium, various plastics, zinc alloys

10.6 Hazardous decomposition products
no information available

SECTION 11. Toxicological information

11.1 Information on toxicological effects
Preparation

Acute oral toxicity
absorption
Symptoms: Nausea, Vomiting

Acute toxicity estimate: 104,17 mg/kg
Calculation method

Acute inhalation toxicity
absorption
Symptoms: Irritation symptoms in the respiratory tract.
Acute toxicity estimate: 3,15 mg/l; 4 h ; vapour
Calculation method

Acute dermal toxicity
absorption
Acute toxicity estimate : 315,23 mg/kg
Calculation method

Skin irritation
Drying-out effect resulting in rough and chapped skin.

Eye irritation
mucosal irritations

Sensitisation
This information is not available.

Germ cell mutagenicity
This information is not available.

Carcinogenicity
This information is not available.

Reproductive toxicity
This information is not available.

Teratogenicity
This information is not available.

Specific target organ toxicity - single exposure
This information is not available.

Specific target organ toxicity - repeated exposure
This information is not available.

Aspiration hazard
This information is not available.

11.2 Further information

Systemic effects:
acidosis, drop in blood pressure, agitation, spasms, inebriation, Dizziness, Drowsiness, Headache, Impairment of vision, blindness
narcosis, Coma
Symptoms may be delayed.
Damage to:
Liver, Kidney, Cardiac, Irreversible damage of the optical nerve.
Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.

Components

methanol

Acute oral toxicity
LDLO human: 143 mg/kg (RTECS)

LD50 rat: 5.628 mg/kg (IUCLID)

Acute inhalation toxicity
LC50 rat: 85,26 mg/l; 4 h (IUCLID)

Acute dermal toxicity
LD50 rabbit: ca. 17.100 mg/kg (External MSDS)

Sensitisation
Sensitisation test: guinea pig
Result: negative
(IUCLID)

Germ cell mutagenicity
Genotoxicity in vivo
Mutagenicity (mammal cell test): micronucleus.
Result: negative
(IUCLID)

Genotoxicity in vitro
Ames test
Result: negative
(IUCLID)

ethylene glycol

Acute oral toxicity
LD50 rat: > 2.000 mg/kg (IUCLID)

LDLO human: 786 mg/kg (RTECS)

Skin irritation
rabbit
Result: slight irritation
(IUCLID)

Eye irritation
rabbit
Result: slight irritation
(IUCLID)

Sensitisation
Patch test:
Result: negative
(IUCLID)

Germ cell mutagenicity
Genotoxicity in vitro
Ames test
Result: negative
(IUCLID)

Mutagenicity (mammal cell test): chromosome aberration.
Result: negative
(National Toxicology Program)

Mutagenicity (mammal cell test):
Result: negative
(IUCLID)

SECTION 12. Ecological information

Preparation

12.1 Toxicity
No information available.

12.2 Persistence and degradability
No information available.

12.3 Bioaccumulative potential
No information available.

12.4 Mobility in soil
No information available.

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects
Discharge into the environment must be avoided.

Components

methanol

Toxicity to fish
LC50 Lepomis macrochirus (Bluegill sunfish): 15.400 mg/l; 96 h (in soft water) (ECOTOX Database)

Toxicity to daphnia and other aquatic invertebrates
EC5 E.sulcatum: > 10.000 mg/l; 72 h (Lit.)

EC50 Daphnia magna (Water flea): > 10.000 mg/l; 48 h (IUCLID)

Toxicity to algae
EC50 Pseudokirchneriella subcapitata (green algae): ca. 22.000 mg/l; 96 h (External MSDS)

IC5 Scenedesmus quadricauda (Green algae): 8.000 mg/l; 8 d (IUCLID)

Toxicity to bacteria
EC5 Pseudomonas fluorescens: 6.600 mg/l; 16 h (IUCLID)

Toxicity to fish (Chronic toxicity)
NOEC Oryzias latipes (Orange-red killifish): 7.900 mg/l; 200 h
(External MSDS)

Biodegradability
99 %; 30 d
OECD Test Guideline 301D
Readily biodegradable.

Biochemical Oxygen Demand (BOD)
600 - 1.120 mg/g (5 d)
(IUCLID)

Chemical Oxygen Demand (COD)
1.420 mg/g
(IUCLID)

Theoretical oxygen demand (ThOD)
1.500 mg/g
(Lit.)

Ratio BOD/ThBOD
BOD5 76 %
Closed Bottle test

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

Stability in water
2,2 yr
reaction with hydroxyl radicals (IUCLID)

ethylene glycol

Toxicity to fish
LC50 Oncorhynchus mykiss (rainbow trout): > 18.500 mg/l; 96 h (External MSDS)

Toxicity to daphnia and other aquatic invertebrates
EC50 Daphnia magna (Water flea): 74.000 mg/l; 24 h (Lit.)

EC5 E.sulcatum: > 10.000 mg/l; 72 h (Lit.)

Toxicity to algae
IC5 Scenedesmus quadricauda (Green algae): > 10.000 mg/l; 7 d (Lit.)

Toxicity to bacteria
microtox test EC50 Photobacterium phosphoreum: 112.000 mg/l; 5 min

EC5 Pseudomonas putida: > 10.000 mg/l; 16 h (Lit.)

EC50 Pseudomonas putida: > 10.000 mg/l; 16 h (Lit.)

Biodegradability
83 - 96 %; 14 d
OECD Test Guideline 301C
Readily biodegradable.

Biochemical Oxygen Demand (BOD)
780 mg/g (5 d)
(IUCLID)

Chemical Oxygen Demand (COD)
1.190 mg/g
(IUCLID)

Theoretical oxygen demand (ThOD)
1.290 mg/g
(IUCLID)

Ratio BOD/ThBOD
BOD5 60 %
(IUCLID)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

SECTION 13. Disposal considerations

Waste treatment methods
Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 UN number	UN 1230
14.2 Proper shipping name	METHANOL
14.3 Class	3 (6.1)
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	D/E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 UN number	UN 1230
14.2 Proper shipping name	METHANOL
14.3 Class	3 (6.1)
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	no

Sea transport (IMDG)

14.1 UN number	UN 1230
14.2 Proper shipping name	METHANOL
14.3 Class	3 (6.1)
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
EmS	F-E S-D

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

Other regulations
Hazchem Code *2WE

SECTION 15. Regulatory information

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

National legislation
Storage class 3

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

SECTION 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H370	Causes damage to organs.

Full text of R-phrases referred to under sections 2 and 3

R11	Highly flammable.
R22	Harmful if swallowed.
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

Training advice
Provide adequate information, instruction and training for operators.

Labelling (67/548/EEC or 1999/45/EC)

Symbol(s)	F	Highly flammable
	T	Toxic
R-phrase(s)	11-23/24/25-39/23/24/25	Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
S-phrase(s)	16-36/37-45	Keep away from sources of ignition - No smoking. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Reduced labelling (≤125 ml)

Symbol(s)	F	Highly flammable
	T	Toxic
R-phrase(s)	23/24/25-39/23/24/25	Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
S-phrase(s)	36/37-45	Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label

where possible).

Contains: methanol

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.