

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer[®] BLUE – liquid bulk
Product No: VB-01LB-0; VB-01LB-1; VB-01LB-3
Version: MSDS002-BLUE / EN

Print date: 13.05.2014
Revision date: 13.05.2014

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

1.1 Product identifier: Viromer[®] BLUE

Mixtures

Trade name / designation: Viromer BLUE – liquid bulk

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

1.2.1 Relevant identified uses

Reagent is used for transfection of nucleic acids (siRNAs/miRNAs) in vitro.

1.2.2 Uses advised against:

For research use only, the reagent is not intended for veterinary or human diagnostic or therapeutic use.

1.3 Details of the supplier of the safety data sheet:

Supplier: Lipocalyx GmbH
Weinbergweg 23
06120 Halle
info@lipocalyx.de
+49-345 55 59 620



Distributor:

1.4 EMERGENCY TELEPHONE NUMBER:

+49-61 31 19 24 0 (National poison information service Mainz, Germany; 24h in German and English)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture:

Classification according to directive criteria, 67/548/CE, 99/45/EC and following amendments thereof:

Properties / Symbols: None.
R Phrases: R10 Flammable.

Classification according to EC regulation criteria 1272/2008 (CLP):

Flam. Liq. 2, Flammable liquid and vapour, H225.
Adverse physicochemical, human health and environmental effects: No hazard.

2.2 Label elements

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

Mixtures: Viromer BLUE

Hazard components for labeling: Ethanol; ethyl alcohol CAS-Nr. : 64-17-5

Hazard pictograms: GHS02



Signal word: Flammable

Hazard statements: H226

Flammable liquid and vapour.

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Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P262 Avoid contact with eyes, skin and clothes.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Supplemental Hazard information (EU): none

Special rules for supplemental label elements for certain mixtures: none

2.3 Other hazards

Adverse physicochemical effects: none
Adverse human health effects and symptoms: none
Adverse environmental effects: none
Other adverse hazards: no other hazards

SECTION 3: Composition/information on ingredients

3.1 Mixtures

Hazardous components within the meaning of EEC directive 67/548 and CLP regulation and related classification:
ethanol; ethyl alcohol
Index number: 603-002-00-5, CAS: 64-17-5, EC: 200-578-6, REACH No: 01-2119457610-43
F; R11
Flam. Liq. 2; H225

3.2 Additional information:

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

This mixture does not contain further substances fulfilling the criteria of hazard class "acute toxicity" according to CLP regulation.

SECTION 4: First aid measures

4.1 Description of first aid measures

Following inhalation: Remove casualty to fresh air and keep warm and at rest.

Following skin contact: Wash with plenty of water and soap.

Following eye contact: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Following ingestion: Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

Self-protection of the first aider: none

4.2 Most important symptoms and effects, both acute and delayed: none

4.3 Indication of any immediate medical attention and special treatment needed: none

SECTION 5: Firefighting measures

5.1 Extinguishing media:

Suitable extinguishing media: Water, water spray with additive, multipurpose dry chemicals, CO₂, foams.
Unsuitable extinguishing media: None in particular.

5.2 Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Combustion produces volatile vapours heavier than air (risk of spreading along the ground and distant ignition: backfire).

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5.3 Advice for fire-fighters

Use suitable breathing apparatus. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.
Remove all sources of ignition.
Remove persons to safety.
See protective measures under point 7 and 8.

6.2 Environmental precautions:

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
Retain contaminated washing water and dispose it.
In case of entry into waterways, soil or drains, inform the responsible authorities.
Suitable material for taking up: absorbing material, sand.

6.3 Methods and material for containment and cleaning up

Wash with plenty of water.

6.4 Reference to other sections

See also section 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
Contaminated clothing should be changed before entering eating areas.
Do not eat or drink while working.
See also section 8 for recommended protective equipment.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions: indicated on the packaging and on the product.
Always keep the containers tightly closed.
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
Keep away from food, drink and feed.
Incompatible materials: none in particular.
Instructions as regards storage premises: cool and adequately ventilated.

7.3 Specific end uses: none

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Substance: ethanol; ethyl alcohol - CAS: 64-17-5
OEL Type: AT - LTE: 1900 mg/m³, 1000 ppm - STE: 3800 mg/m³, 2000 ppm
OEL Type: BE - LTE: 1907 mg/m³, 1000 ppm
OEL Type: DK - LTE: 1900 mg/m³, 1000 ppm - STE: 3800 mg/m³, 2000 ppm
OEL Type: FR - LTE: 1900 mg/m³, 1000 ppm - STE: 9500 mg/m³, 5000 ppm
OEL Type: DE - LTE: 960 mg/m³, 500 ppm - STE: 1920 mg/m³, 1000 ppm
OEL Type: HU - LTE: 1900 mg/m³

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OEL Type: PL - LTE: 1900 mg/m³
OEL Type: ES - LTE: 1910 mg/m³, 1000 ppm
OEL Type: SE - LTE: 1000 mg/m³, 500 ppm - STE: 1900 mg/m³, 1000 ppm
OEL Type: GB - LTE: 1920 mg/m³, 1000 ppm

8.2 Exposure controls

8.2.1 Appropriate engineering controls: Ensure adequate ventilation, especially in confined areas.

8.2.2 Personal protective equipment: Personal Protective Equipment requirements are dependent on the user institution's risk assessment and are specific to the risk assessment for each laboratory where this material may be used.

Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment
Hand protection	Impervious gloves
Eye protection	Safety glasses with side-shields.
Skin and body protection	Lightweight protective clothing.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice

8.2.3 Environmental exposure controls: Prevent product from entering drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Unless otherwise indicated, tests have been carried out at 20°C and at normal atmospheric pressure (760 mm Hg - 1 atm). Parameters indicated with * refer to anhydrous and undenatured ethanol.

Appearance and colour:	colorless liquid	
Odour:	N.A.	
Odour threshold:	N.A.	
pH:	alkaline	
Melting point / freezing point:	-114°C*	GESTIS data base
Initial boiling point and boiling range:	78°C*	GESTIS data base
Solid/gas flammability:	N.A.	GESTIS data base
lower flammability or explosive limits:	3,1 Vol.-% (59 g/m ³)	GESTIS data base
upper flammability or explosive limits:	27,7 Vol.-% (532 g/m ³)*	GESTIS data base
Vapour density:	1,59 g/cm ³ *	www.weka.de
Flash point:	22°C*	GESTIS data base
Evaporation rate:	N.A.	
Vapour pressure:	58,0 mbar	GESTIS data base
Relative density:	0,89 g/cm ³	calculated
Solubility in water:	Soluble	
Lipid solubility:	N.A.	
Partition coefficient (n-octanol/water):	-0,3*	GESTIS data base
Auto-ignition temperature:	N.A.	
Decomposition temperature:	N.A.	
Viscosity:	1,201 mPa*s (dynamic)	www.weka.de
Explosive properties:	Flammable liquid and vapour	
Oxidizing properties:	N.A.	

9.2. Other information: None

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

Stable under normal conditions.

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Trade name: Viromer[®] BLUE – liquid bulk
Product No: VB-01LB-0; VB-01LB-1; VB-01LB-3
Version: MSDS002-BLUE / EN

Print date: 13.05.2014
Revision date: 13.05.2014

10.3. Possibility of hazardous reactions

It may generate flammable gases on contact with elementary metals (alkalis and alkaline earth), nitrides, and powerful reducing agents. It may catch fire on contact with oxidizing mineral acids, elementary metals (alkalis and alkaline earth), nitrides, organic peroxides and hydroperoxides, oxidizing agents, and reducing agents.

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces.

10.5. Incompatible materials

Avoid contact with combustible materials. The product could catch fire.

10.6. Hazardous decomposition products

None under normal use

SECTION 11. Toxicological information

11.1. Information on toxicological effects

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture. Since the mixture has not been generally tested to establish its effects on health, the information pertaining to substances set out in section 3 is provided below.

Acute toxicity: ethanol; ethyl alcohol

Index No: 603-002-00-5, CAS: 64-17-5, EC: 200-578-6, REACH No: 01-2119457610-43

Test: LD50 - Route: Oral - Species: Rat 6200 mg/kg

Test: LD50 - Route: Oral - Species: Rabbit 6300 mg/kg

Test: LC50 - Route: Inhalation - Species: Rat 124,7mg/l/4h

Irritation: May cause skin and eye irritation in susceptible persons.

Corrosivity: none

Sensitization: not tested

Repeated dose toxicity: not tested

Carcinogenicity: not tested

Mutagenicity: not tested

Toxicity for reproduction: not tested

Inhalation and Ingestion: May be harmful after inhalation or if swallowed.

SECTION 12. Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment. Since no ecotoxicological data about the mixture is available, the concentration of each substance must be considered to assess the ecotoxicological effects resulting from exposure to the mixture.

ethanol; ethyl alcohol - CAS: 64-17-5

Test: LC50 Fish - Duration: 48h - mg/l: 8.14

Test: EC50 BACTERIA - Duration: 30 min - mg/l: 34634

Test: EC50 Daphnia - Duration: 48h - mg/l: 9268

12.2. Persistence and degradability

Ethanol: none persistent; volatile and inherently biodegradable

12.3. Bioaccumulative potential

Not known for the mixture; Ethanol log K_{ow} = -0,3

12.4. Mobility in soil

Not known for the mixture; ethanol is volatile and easily evaporates from the soil surface.

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects None.

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SECTION 13. Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.

SECTION 14. Transport information

14.1. UN number ADR/IATA/IMDG-UN number: 1170

14.2. UN proper shipping name ADR-Shipping /IATA/IMDG technical Name: ETHANOL IN SOLUTION

14.3. Transport hazard class(es) ADR/IATA/IMDG-Label: 3

14.4. Packing Group ADR/IATA/IMDG-Packing Group: III

14.5. Environmental hazards ADR/RID / IMDG-Code / ICAO-TI / IATA-DGR: none

Marine pollutant: No

14.6. Special Precautions for User IMDG-Technical name: ETHANOL IN SOLUTION

See also section 6-8

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code no

SECTION 15. Regulatory information

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

Information according to 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline)

Directive 2004/42/CE on the limitation of emissions of volatile organic compounds

Regulation (EC) No. 842/2006 on certain fluorinated greenhouse gases

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer

15.2. Chemical Safety Assessment Mixture did not undergo a safety assessment.

SECTION 16: Other information

16.1 Indication of changes

This is the first English version of the (M)SDS for Viromer BLUE. This safety data sheet has been completely updated in compliance with Regulation 453/2010/EU.

16.2 Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

CLP: Classification, Labeling, Packaging.

EC50: Median effective concentration.

IATA: International Air Transport Association.

IMDG: International Maritime Code for Dangerous Goods.

LC50: Lethal concentration, for 50 percent of test population.

LD50: Lethal dose, for 50 percent of test population.

LTE: Long-term exposure.

N.A.: Not available

OEL: Occupational exposure limit.

PBT: Persistent, Bioaccumulative and Toxic.

REACH Registration, Evaluation, Authorization and Restriction of Chemicals

RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.

STE: Short-term exposure.

VOC Volatile Organic Compounds

vPvB: very Persistent and very Bioaccumulative.

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Product No: VB-01LB-0; VB-01LB-1; VB-01LB-3
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16.3 Key literature references and sources for data

www.baua.de; www.gischem.de; gestis.itrust.de; www.reach-clp-helpdesk.de

REACH regulation (EC) No. 1907/2006, No. 836/2012; CLP regulation (EC) No. 1272/2008; Guidance 67/548/EWG and 1999/45/EWG; TRGS 900 / 500 (national guidance)

ECHA CHEM (European Chemicals Agency); GESTIS International Limit Values (IFA)

16.4 Relevant R-, H- and EUH-phrases (number and full text):

R11	Highly flammable (Guidance 67/548/EWG)
H225; Flam. Liq. 2	Highly flammable liquid and vapour (CLP regulation (EC) No. 1272/2008)

16.5 Training advice: Employees handling with the aforementioned product have been scheduled regarding accompanying risks and appropriate safety precautions.

16.6 Further information: The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer® GREEN – liquid bulk
Product No: VG-01LB-0; VG-01LB-1; VG-01LB-3
Version: MSDS002-GREEN / EN

Print date: 13.05.2014
Revision date: 13.05.2014

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

1.1 Product identifier: Viromer® GREEN

Mixtures

Trade name / designation: Viromer GREEN – liquid bulk

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

1.2.1 Relevant identified uses

Reagent is used for transfection of nucleic acids (siRNAs/miRNAs) in vitro.

1.2.2 Uses advised against:

For research use only, the reagent is not intended for veterinary or human diagnostic or therapeutic use.

1.3 Details of the supplier of the safety data sheet:

Supplier: Lipocalyx GmbH
Weinbergweg 23
06120 Halle
info@lipocalyx.de
+49-345 55 59 620



Distributor:

1.4 EMERGENCY TELEPHONE NUMBER:

+49-61 31 19 24 0 (National poison information service Mainz, Germany; 24h in German and English)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture:

Classification according to directive criteria, 67/548/CE, 99/45/EC and following amendments thereof:

Properties / Symbols: None.
R Phrases: R10 Flammable.

Classification according to EC regulation criteria 1272/2008 (CLP):

Flam. Liq. 2, Flammable liquid and vapour, H225.
Adverse physicochemical, human health and environmental effects: No hazard.

2.2 Label elements

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

Mixtures: Viromer GREEN

Hazard components for labeling: Ethanol; ethyl alcohol CAS-Nr. : 64-17-5

Hazard pictograms: GHS02



Signal word: Flammable

Hazard statements: H226

Flammable liquid and vapour.

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer[®] GREEN – liquid bulk
Product No: VG-01LB-0; VG-01LB-1; VG-01LB-3
Version: MSDS002-GREEN / EN

Print date: 13.05.2014
Revision date: 13.05.2014

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P262 Avoid contact with eyes, skin and clothes.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Supplemental Hazard information (EU): none

Special rules for supplemental label elements for certain mixtures: none

2.3 Other hazards

Adverse physicochemical effects: none
Adverse human health effects and symptoms: none
Adverse environmental effects: none
Other adverse hazards: no other hazards

SECTION 3: Composition/information on ingredients

3.1 Mixtures

Hazardous components within the meaning of EEC directive 67/548 and CLP regulation and related classification:
ethanol; ethyl alcohol
Index number: 603-002-00-5, CAS: 64-17-5, EC: 200-578-6, REACH No: 01-2119457610-43
F; R11
Flam. Liq. 2; H225

3.2 Additional information:

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

This mixture does not contain further substances fulfilling the criteria of hazard class "acute toxicity" according to CLP regulation.

SECTION 4: First aid measures

4.1 Description of first aid measures

Following inhalation: Remove casualty to fresh air and keep warm and at rest.

Following skin contact: Wash with plenty of water and soap.

Following eye contact: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Following ingestion: Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

Self-protection of the first aider: none

4.2 Most important symptoms and effects, both acute and delayed: none

4.3 Indication of any immediate medical attention and special treatment needed: none

SECTION 5: Firefighting measures

5.1 Extinguishing media:

Suitable extinguishing media: Water, water spray with additive, multipurpose dry chemicals, CO₂, foams.
Unsuitable extinguishing media: None in particular.

5.2 Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Combustion produces volatile vapours heavier than air (risk of spreading along the ground and distant ignition: backfire).

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer[®] GREEN – liquid bulk
Product No: VG-01LB-0; VG-01LB-1; VG-01LB-3
Version: MSDS002-GREEN / EN

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Revision date: 13.05.2014

5.3 Advice for fire-fighters

Use suitable breathing apparatus. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.
Remove all sources of ignition.
Remove persons to safety.
See protective measures under point 7 and 8.

6.2 Environmental precautions:

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
Retain contaminated washing water and dispose it.
In case of entry into waterways, soil or drains, inform the responsible authorities.
Suitable material for taking up: absorbing material, sand.

6.3 Methods and material for containment and cleaning up

Wash with plenty of water.

6.4 Reference to other sections

See also section 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
Contaminated clothing should be changed before entering eating areas.
Do not eat or drink while working.
See also section 8 for recommended protective equipment.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions: indicated on the packaging and on the product.
Always keep the containers tightly closed.
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
Keep away from food, drink and feed.
Incompatible materials: none in particular.
Instructions as regards storage premises: cool and adequately ventilated.

7.3 Specific end uses: none

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Substance: ethanol; ethyl alcohol - CAS: 64-17-5
OEL Type: AT - LTE: 1900 mg/m³, 1000 ppm - STE: 3800 mg/m³, 2000 ppm
OEL Type: BE - LTE: 1907 mg/m³, 1000 ppm
OEL Type: DK - LTE: 1900 mg/m³, 1000 ppm - STE: 3800 mg/m³, 2000 ppm
OEL Type: FR - LTE: 1900 mg/m³, 1000 ppm - STE: 9500 mg/m³, 5000 ppm
OEL Type: DE - LTE: 960 mg/m³, 500 ppm - STE: 1920 mg/m³, 1000 ppm
OEL Type: HU - LTE: 1900 mg/m³

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Trade name: Viromer[®] GREEN – liquid bulk
Product No: VG-01LB-0; VG-01LB-1; VG-01LB-3
Version: MSDS002-GREEN / EN

Print date: 13.05.2014
Revision date: 13.05.2014

OEL Type: PL - LTE: 1900 mg/m³
OEL Type: ES - LTE: 1910 mg/m³, 1000 ppm
OEL Type: SE - LTE: 1000 mg/m³, 500 ppm - STE: 1900 mg/m³, 1000 ppm
OEL Type: GB - LTE: 1920 mg/m³, 1000 ppm

8.2 Exposure controls

8.2.1 Appropriate engineering controls: Ensure adequate ventilation, especially in confined areas.

8.2.2 Personal protective equipment: Personal Protective Equipment requirements are dependent on the user institution's risk assessment and are specific to the risk assessment for each laboratory where this material may be used.

Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment
Hand protection	Impervious gloves
Eye protection	Safety glasses with side-shields.
Skin and body protection	Lightweight protective clothing.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice

8.2.3 Environmental exposure controls: Prevent product from entering drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Unless otherwise indicated, tests have been carried out at 20°C and at normal atmospheric pressure (760 mm Hg - 1 atm). Parameters indicated with * refer to anhydrous and undenatured ethanol.

Appearance and colour:	colorless liquid	
Odour:	N.A.	
Odour threshold:	N.A.	
pH:	alkaline	
Melting point / freezing point:	-114°C*	GESTIS data base
Initial boiling point and boiling range:	78°C*	GESTIS data base
Solid/gas flammability:	N.A.	GESTIS data base
lower flammability or explosive limits:	3,1 Vol.-% (59 g/m ³)	GESTIS data base
upper flammability or explosive limits:	27,7 Vol.-% (532 g/m ³)*	GESTIS data base
Vapour density:	1,59 g/cm ³ *	www.weka.de
Flash point:	22°C*	GESTIS data base
Evaporation rate:	N.A.	
Vapour pressure:	58,0 mbar	GESTIS data base
Relative density:	0,89 g/cm ³	calculated
Solubility in water:	Soluble	
Lipid solubility:	N.A.	
Partition coefficient (n-octanol/water):	-0,3*	GESTIS data base
Auto-ignition temperature:	N.A.	
Decomposition temperature:	N.A.	
Viscosity:	1,201 mPa*s (dynamic)	www.weka.de
Explosive properties:	Flammable liquid and vapour	
Oxidizing properties:	N.A.	

9.2. Other information: None

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

Stable under normal conditions.

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10.3. Possibility of hazardous reactions

It may generate flammable gases on contact with elementary metals (alkalis and alkaline earth), nitrides, and powerful reducing agents. It may catch fire on contact with oxidizing mineral acids, elementary metals (alkalis and alkaline earth), nitrides, organic peroxides and hydroperoxides, oxidizing agents, and reducing agents.

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces.

10.5. Incompatible materials

Avoid contact with combustible materials. The product could catch fire.

10.6. Hazardous decomposition products

None under normal use

SECTION 11. Toxicological information

11.1. Information on toxicological effects

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture. Since the mixture has not been generally tested to establish its effects on health, the information pertaining to substances set out in section 3 is provided below.

Acute toxicity: ethanol; ethyl alcohol

Index No: 603-002-00-5, CAS: 64-17-5, EC: 200-578-6, REACH No: 01-2119457610-43

Test: LD50 - Route: Oral - Species: Rat 6200 mg/kg

Test: LD50 - Route: Oral - Species: Rabbit 6300 mg/kg

Test: LC50 - Route: Inhalation - Species: Rat 124,7mg/l/4h

Irritation: May cause skin and eye irritation in susceptible persons.

Corrosivity: none

Sensitization: not tested

Repeated dose toxicity: not tested

Carcinogenicity: not tested

Mutagenicity: not tested

Toxicity for reproduction: not tested

Inhalation and Ingestion: May be harmful after inhalation or if swallowed.

SECTION 12. Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment. Since no ecotoxicological data about the mixture is available, the concentration of each substance must be considered to assess the ecotoxicological effects resulting from exposure to the mixture.

ethanol; ethyl alcohol - CAS: 64-17-5

Test: LC50 Fish - Duration: 48h - mg/l: 8.14

Test: EC50 BACTERIA - Duration: 30 min - mg/l: 34634

Test: EC50 Daphnia - Duration: 48h - mg/l: 9268

12.2. Persistence and degradability

Ethanol: none persistent; volatile and inherently biodegradable

12.3. Bioaccumulative potential

Not known for the mixture; Ethanol log K_{ow} = -0,3

12.4. Mobility in soil

Not known for the mixture; ethanol is volatile and easily evaporates from the soil surface.

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects None.

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer[®] GREEN – liquid bulk
Product No: VG-01LB-0; VG-01LB-1; VG-01LB-3
Version: MSDS002-GREEN / EN

Print date: 13.05.2014
Revision date: 13.05.2014

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.

SECTION 14. Transport information

14.1. UN number ADR/IATA/IMDG-UN number: 1170

14.2. UN proper shipping name ADR-Shipping /IATA/IMDG technical Name: ETHANOL IN SOLUTION

14.3. Transport hazard class(es) ADR/IATA/IMDG-Label: 3

14.4. Packing Group ADR/IATA/IMDG-Packing Group: III

14.5. Environmental hazards ADR/RID / IMDG-Code / ICAO-TI / IATA-DGR: none

Marine pollutant: No

14.6. Special Precautions for User IMDG-Technical name: ETHANOL IN SOLUTION

See also section 6-8

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code no

SECTION 15. Regulatory information

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

Information according to 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline)

Directive 2004/42/CE on the limitation of emissions of volatile organic compounds

Regulation (EC) No. 842/2006 on certain fluorinated greenhouse gases

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer

15.2. Chemical Safety Assessment Mixture did not undergo a safety assessment.

SECTION 16: Other information

16.1 Indication of changes

This is the first English version of the (M)SDS for Viromer GREEN. This safety data sheet has been completely updated in compliance with Regulation 453/2010/EU.

16.2 Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

CLP: Classification, Labeling, Packaging.

EC50: Median effective concentration.

IATA: International Air Transport Association.

IMDG: International Maritime Code for Dangerous Goods.

LC50: Lethal concentration, for 50 percent of test population.

LD50: Lethal dose, for 50 percent of test population.

LTE: Long-term exposure.

N.A.: Not available

OEL: Occupational exposure limit.

PBT: Persistent, Bioaccumulative and Toxic.

REACH Registration, Evaluation, Authorization and Restriction of Chemicals

RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.

STE: Short-term exposure.

VOC Volatile Organic Compounds

vPvB: very Persistent and very Bioaccumulative.

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer® GREEN – liquid bulk
Product No: VG-01LB-0; VG-01LB-1; VG-01LB-3
Version: MSDS002-GREEN / EN

Print date: 13.05.2014
Revision date: 13.05.2014

16.3 Key literature references and sources for data

www.baua.de; www.gischem.de; gestis.itrust.de; www.reach-clp-helpdesk.de

REACH regulation (EC) No. 1907/2006, No. 836/2012; CLP regulation (EC) No. 1272/2008; Guidance 67/548/EWG and 1999/45/EWG; TRGS 900 / 500 (national guidance)

ECHA CHEM (European Chemicals Agency); GESTIS International Limit Values (IFA)

16.4 Relevant R-, H- and EUH-phrases (number and full text):

R11	Highly flammable (Guidance 67/548/EWG)
H225; Flam. Liq. 2	Highly flammable liquid and vapour (CLP regulation (EC) No. 1272/2008)

16.5 Training advice: Employees handling with the aforementioned product have been scheduled regarding accompanying risks and appropriate safety precautions.

16.6 Further information: The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer[®] RED – liquid bulk
Product No: VR-01LB-0; VR-01LB-1; VR-01LB-3
Version: MSDS002-RED / EN

Print date: 13.05.2014
Revision date: 13.05.2014

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

1.1 Product identifier: Viromer[®] RED

Mixtures

Trade name / designation: Viromer RED – liquid bulk

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

1.2.1 Relevant identified uses

Reagent is used for transfection of nucleic acids (plasmid DNA, mRNAs) in vitro.

1.2.2 Uses advised against:

For research use only, the reagent is not intended for veterinary or human diagnostic or therapeutic use.

1.3 Details of the supplier of the safety data sheet:

Supplier: Lipocalyx GmbH
Weinbergweg 23
06120 Halle
info@lipocalyx.de
+49-345 55 59 620



Distributor:

1.4 EMERGENCY TELEPHONE NUMBER:

+49-61 31 19 24 0 (National poison information service Mainz, Germany; 24h in German and English)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture:

Classification according to directive criteria, 67/548/CE, 99/45/EC and following amendments thereof:

Properties / Symbols: None.
R Phrases: R10 Flammable.

Classification according to EC regulation criteria 1272/2008 (CLP):

Flam. Liq. 2, Flammable liquid and vapour, H225.
Adverse physicochemical, human health and environmental effects: No hazard.

2.2 Label elements

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

Mixtures: Viromer RED

Hazard components for labeling: Ethanol; ethyl alcohol CAS-Nr. : 64-17-5

Hazard pictograms: GHS02



Signal word: Flammable

Hazard statements: H226

Flammable liquid and vapour.

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer[®] RED – liquid bulk
Product No: VR-01LB-0; VR-01LB-1; VR-01LB-3
Version: MSDS002-RED / EN

Print date: 13.05.2014
Revision date: 13.05.2014

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P262 Avoid contact with eyes, skin and clothes.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Supplemental Hazard information (EU): none

Special rules for supplemental label elements for certain mixtures: none

2.3 Other hazards

Adverse physicochemical effects: none
Adverse human health effects and symptoms: none
Adverse environmental effects: none
Other adverse hazards: no other hazards

SECTION 3: Composition/information on ingredients

3.1 Mixtures

Hazardous components within the meaning of EEC directive 67/548 and CLP regulation and related classification:
ethanol; ethyl alcohol
Index number: 603-002-00-5, CAS: 64-17-5, EC: 200-578-6, REACH No: 01-2119457610-43
F; R11
Flam. Liq. 2; H225

3.2 Additional information:

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

This mixture does not contain further substances fulfilling the criteria of hazard class "acute toxicity" according to CLP regulation.

SECTION 4: First aid measures

4.1 Description of first aid measures

Following inhalation: Remove casualty to fresh air and keep warm and at rest.

Following skin contact: Wash with plenty of water and soap.

Following eye contact: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Following ingestion: Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

Self-protection of the first aider: none

4.2 Most important symptoms and effects, both acute and delayed: none

4.3 Indication of any immediate medical attention and special treatment needed: none

SECTION 5: Firefighting measures

5.1 Extinguishing media:

Suitable extinguishing media: Water, water spray with additive, multipurpose dry chemicals, CO₂, foams.
Unsuitable extinguishing media: None in particular.

5.2 Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Combustion produces volatile vapours heavier than air (risk of spreading along the ground and distant ignition: backfire).

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer[®] RED – liquid bulk
Product No: VR-01LB-0; VR-01LB-1; VR-01LB-3
Version: MSDS002-RED / EN

Print date: 13.05.2014
Revision date: 13.05.2014

5.3 Advice for fire-fighters

Use suitable breathing apparatus. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.
Remove all sources of ignition.
Remove persons to safety.
See protective measures under point 7 and 8.

6.2 Environmental precautions:

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
Retain contaminated washing water and dispose it.
In case of entry into waterways, soil or drains, inform the responsible authorities.
Suitable material for taking up: absorbing material, sand.

6.3 Methods and material for containment and cleaning up

Wash with plenty of water.

6.4 Reference to other sections

See also section 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
Contaminated clothing should be changed before entering eating areas.
Do not eat or drink while working.
See also section 8 for recommended protective equipment.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions: indicated on the packaging and on the product.
Always keep the containers tightly closed.
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
Keep away from food, drink and feed.
Incompatible materials: none in particular.
Instructions as regards storage premises: cool and adequately ventilated.

7.3 Specific end uses: none

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Substance: ethanol; ethyl alcohol - CAS: 64-17-5
OEL Type: AT - LTE: 1900 mg/m³, 1000 ppm - STE: 3800 mg/m³, 2000 ppm
OEL Type: BE - LTE: 1907 mg/m³, 1000 ppm
OEL Type: DK - LTE: 1900 mg/m³, 1000 ppm - STE: 3800 mg/m³, 2000 ppm
OEL Type: FR - LTE: 1900 mg/m³, 1000 ppm - STE: 9500 mg/m³, 5000 ppm
OEL Type: DE - LTE: 960 mg/m³, 500 ppm - STE: 1920 mg/m³, 1000 ppm
OEL Type: HU - LTE: 1900 mg/m³

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer[®] RED – liquid bulk
Product No: VR-01LB-0; VR-01LB-1; VR-01LB-3
Version: MSDS002-RED / EN

Print date: 13.05.2014
Revision date: 13.05.2014

OEL Type: PL - LTE: 1900 mg/m³
OEL Type: ES - LTE: 1910 mg/m³, 1000 ppm
OEL Type: SE - LTE: 1000 mg/m³, 500 ppm - STE: 1900 mg/m³, 1000 ppm
OEL Type: GB - LTE: 1920 mg/m³, 1000 ppm

8.2 Exposure controls

8.2.1 Appropriate engineering controls: Ensure adequate ventilation, especially in confined areas.

8.2.2 Personal protective equipment: Personal Protective Equipment requirements are dependent on the user institution's risk assessment and are specific to the risk assessment for each laboratory where this material may be used.

Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment
Hand protection	Impervious gloves
Eye protection	Safety glasses with side-shields.
Skin and body protection	Lightweight protective clothing.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice

8.2.3 Environmental exposure controls: Prevent product from entering drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Unless otherwise indicated, tests have been carried out at 20°C and at normal atmospheric pressure (760 mm Hg - 1 atm). Parameters indicated with * refer to anhydrous and undenatured ethanol.

Appearance and colour:	colorless liquid	
Odour:	N.A.	
Odour threshold:	N.A.	
pH:	alkaline	
Melting point / freezing point:	-114°C*	GESTIS data base
Initial boiling point and boiling range:	78°C*	GESTIS data base
Solid/gas flammability:	N.A.	GESTIS data base
lower flammability or explosive limits:	3,1 Vol.-% (59 g/m ³)	GESTIS data base
upper flammability or explosive limits:	27,7 Vol.-% (532 g/m ³)*	GESTIS data base
Vapour density:	1,59 g/cm ³ *	www.weka.de
Flash point:	22°C*	GESTIS data base
Evaporation rate:	N.A.	
Vapour pressure:	58,0 mbar	GESTIS data base
Relative density:	0,89 g/cm ³	calculated
Solubility in water:	Soluble	
Lipid solubility:	N.A.	
Partition coefficient (n-octanol/water):	-0,3*	GESTIS data base
Auto-ignition temperature:	N.A.	
Decomposition temperature:	N.A.	
Viscosity:	1,201 mPa*s (dynamic)	www.weka.de
Explosive properties:	Flammable liquid and vapour	
Oxidizing properties:	N.A.	

9.2. Other information: None

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

Stable under normal conditions.

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viomer[®] RED – liquid bulk
Product No: VR-01LB-0; VR-01LB-1; VR-01LB-3
Version: MSDS002-RED / EN

Print date: 13.05.2014
Revision date: 13.05.2014

10.3. Possibility of hazardous reactions

It may generate flammable gases on contact with elementary metals (alkalis and alkaline earth), nitrides, and powerful reducing agents. It may catch fire on contact with oxidizing mineral acids, elementary metals (alkalis and alkaline earth), nitrides, organic peroxides and hydroperoxides, oxidizing agents, and reducing agents.

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces.

10.5. Incompatible materials

Avoid contact with combustible materials. The product could catch fire.

10.6. Hazardous decomposition products

None under normal use

SECTION 11. Toxicological information

11.1. Information on toxicological effects

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture. Since the mixture has not been generally tested to establish its effects on health, the information pertaining to substances set out in section 3 is provided below.

Acute toxicity: ethanol; ethyl alcohol

Index No: 603-002-00-5, CAS: 64-17-5, EC: 200-578-6, REACH No: 01-2119457610-43

Test: LD50 - Route: Oral - Species: Rat 6200 mg/kg

Test: LD50 - Route: Oral - Species: Rabbit 6300 mg/kg

Test: LC50 - Route: Inhalation - Species: Rat 124,7mg/l/4h

Irritation: May cause skin and eye irritation in susceptible persons.

Corrosivity: none

Sensitization: not tested

Repeated dose toxicity: not tested

Carcinogenicity: not tested

Mutagenicity: not tested

Toxicity for reproduction: not tested

Inhalation and Ingestion: May be harmful after inhalation or if swallowed.

SECTION 12. Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment. Since no ecotoxicological data about the mixture is available, the concentration of each substance must be considered to assess the ecotoxicological effects resulting from exposure to the mixture.

ethanol; ethyl alcohol - CAS: 64-17-5

Test: LC50 Fish - Duration: 48h - mg/l: 8.14

Test: EC50 BACTERIA - Duration: 30 min - mg/l: 34634

Test: EC50 Daphnia - Duration: 48h - mg/l: 9268

12.2. Persistence and degradability

Ethanol: none persistent; volatile and inherently biodegradable

12.3. Bioaccumulative potential

Not known for the mixture; Ethanol log K_{ow} = -0,3

12.4. Mobility in soil

Not known for the mixture; ethanol is volatile and easily evaporates from the soil surface.

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects None.

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer[®] RED – liquid bulk
Product No: VR-01LB-0; VR-01LB-1; VR-01LB-3
Version: MSDS002-RED / EN

Print date: 13.05.2014
Revision date: 13.05.2014

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.

SECTION 14. Transport information

14.1. UN number ADR/IATA/IMDG-UN number: 1170

14.2. UN proper shipping name ADR-Shipping /IATA/IMDG technical Name: ETHANOL IN SOLUTION

14.3. Transport hazard class(es) ADR/IATA/IMDG-Label: 3

14.4. Packing Group ADR/IATA/IMDG-Packing Group: III

14.5. Environmental hazards ADR/RID / IMDG-Code / ICAO-TI / IATA-DGR: none

Marine pollutant: No

14.6. Special Precautions for User IMDG-Technical name: ETHANOL IN SOLUTION

See also section 6-8

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code no

SECTION 15. Regulatory information

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

Information according to 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline)

Directive 2004/42/CE on the limitation of emissions of volatile organic compounds

Regulation (EC) No. 842/2006 on certain fluorinated green house gases

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer

15.2. Chemical Safety Assessment Mixture did not undergo a safety assessment.

SECTION 16: Other information

16.1 Indication of changes

This is the first English version of the (M)SDS for Viromer RED. This safety data sheet has been completely updated in compliance with Regulation 453/2010/EU.

16.2 Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

CLP: Classification, Labeling, Packaging.

EC50: Median effective concentration.

IATA: International Air Transport Association.

IMDG: International Maritime Code for Dangerous Goods.

LC50: Lethal concentration, for 50 percent of test population.

LD50: Lethal dose, for 50 percent of test population.

LTE: Long-term exposure.

N.A.: Not available

OEL: Occupational exposure limit.

PBT: Persistent, Bioaccumulative and Toxic.

REACH Registration, Evaluation, Authorization and Restriction of Chemicals

RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.

STE: Short-term exposure.

VOC Volatile Organic Compounds

vPvB: very Persistent and very Bioaccumulative.

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer[®] RED – liquid bulk
Product No: VR-01LB-0; VR-01LB-1; VR-01LB-3
Version: MSDS002-RED / EN

Print date: 13.05.2014
Revision date: 13.05.2014

16.3 Key literature references and sources for data

www.baua.de; www.gischem.de; gestis.itrust.de; www.reach-clp-helpdesk.de

REACH regulation (EC) No. 1907/2006, No. 836/2012; CLP regulation (EC) No. 1272/2008; Guidance 67/548/EWG and 1999/45/EWG; TRGS 900 / 500 (national guidance)

ECHA CHEM (European Chemicals Agency); GESTIS International Limit Values (IFA)

16.4 Relevant R-, H- and EUH-phrases (number and full text):

R11	Highly flammable (Guidance 67/548/EWG)
H225; Flam. Liq. 2	Highly flammable liquid and vapour (CLP regulation (EC) No. 1272/2008)

16.5 Training advice: Employees handling with the aforementioned product have been scheduled regarding accompanying risks and appropriate safety precautions.

16.6 Further information: The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer[®] YELLOW – liquid bulk
Product No: VY-01LB-0; VY-01LB-1; VY-01LB-3
Version: MSDS002-YELLOW / EN

Print date: 13.05.2014
Revision date: 13.05.2014

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

1.1 Product identifier: Viromer[®] YELLOW

Mixtures

Trade name / designation: Viromer YELLOW – liquid bulk

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

1.2.1 Relevant identified uses

Reagent is used for transfection of nucleic acids (plasmid DNA, mRNAs) in vitro.

1.2.2 Uses advised against:

For research use only, the reagent is not intended for veterinary or human diagnostic or therapeutic use.

1.3 Details of the supplier of the safety data sheet:

Supplier: Lipocalyx GmbH
Weinbergweg 23
06120 Halle
info@lipocalyx.de
+49-345 55 59 620



Distributor:

1.4 EMERGENCY TELEPHONE NUMBER:

+49-61 31 19 24 0 (National poison information service Mainz, Germany; 24h in German and English)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture:

Classification according to directive criteria, 67/548/CE, 99/45/EC and following amendments thereof:

Properties / Symbols: None.
R Phrases: R10 Flammable.

Classification according to EC regulation criteria 1272/2008 (CLP):

Flam. Liq. 2, Flammable liquid and vapour, H225.
Adverse physicochemical, human health and environmental effects: No hazard.

2.2 Label elements

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

Mixtures: Viromer YELLOW

Hazard components for labeling: Ethanol; ethyl alcohol CAS-Nr. : 64-17-5

Hazard pictograms: GHS02



Signal word: Flammable

Hazard statements: H226

Flammable liquid and vapour.

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer[®] YELLOW – liquid bulk
Product No: VY-01LB-0; VY-01LB-1; VY-01LB-3
Version: MSDS002-YELLOW / EN

Print date: 13.05.2014
Revision date: 13.05.2014

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P262 Avoid contact with eyes, skin and clothes.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Supplemental Hazard information (EU): none

Special rules for supplemental label elements for certain mixtures: none

2.3 Other hazards

Adverse physicochemical effects: none
Adverse human health effects and symptoms: none
Adverse environmental effects: none
Other adverse hazards: no other hazards

SECTION 3: Composition/information on ingredients

3.1 Mixtures

Hazardous components within the meaning of EEC directive 67/548 and CLP regulation and related classification:
ethanol; ethyl alcohol
Index number: 603-002-00-5, CAS: 64-17-5, EC: 200-578-6, REACH No: 01-2119457610-43
F; R11
Flam. Liq. 2; H225

3.2 Additional information:

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

This mixture does not contain further substances fulfilling the criteria of hazard class "acute toxicity" according to CLP regulation.

SECTION 4: First aid measures

4.1 Description of first aid measures

Following inhalation: Remove casualty to fresh air and keep warm and at rest.

Following skin contact: Wash with plenty of water and soap.

Following eye contact: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Following ingestion: Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

Self-protection of the first aider: none

4.2 Most important symptoms and effects, both acute and delayed: none

4.3 Indication of any immediate medical attention and special treatment needed: none

SECTION 5: Firefighting measures

5.1 Extinguishing media:

Suitable extinguishing media: Water, water spray with additive, multipurpose dry chemicals, CO₂, foams.
Unsuitable extinguishing media: None in particular.

5.2 Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Combustion produces volatile vapours heavier than air (risk of spreading along the ground and distant ignition: backfire).

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer[®] YELLOW – liquid bulk
Product No: VY-01LB-0; VY-01LB-1; VY-01LB-3
Version: MSDS002-YELLOW / EN

Print date: 13.05.2014
Revision date: 13.05.2014

5.3 Advice for fire-fighters

Use suitable breathing apparatus. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.
Remove all sources of ignition.
Remove persons to safety.
See protective measures under point 7 and 8.

6.2 Environmental precautions:

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
Retain contaminated washing water and dispose it.
In case of entry into waterways, soil or drains, inform the responsible authorities.
Suitable material for taking up: absorbing material, sand.

6.3 Methods and material for containment and cleaning up

Wash with plenty of water.

6.4 Reference to other sections

See also section 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
Contaminated clothing should be changed before entering eating areas.
Do not eat or drink while working.
See also section 8 for recommended protective equipment.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions: indicated on the packaging and on the product.
Always keep the containers tightly closed.
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
Keep away from food, drink and feed.
Incompatible materials: none in particular.
Instructions as regards storage premises: cool and adequately ventilated.

7.3 Specific end uses: none

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Substance: ethanol; ethyl alcohol - CAS: 64-17-5
OEL Type: AT - LTE: 1900 mg/m³, 1000 ppm - STE: 3800 mg/m³, 2000 ppm
OEL Type: BE - LTE: 1907 mg/m³, 1000 ppm
OEL Type: DK - LTE: 1900 mg/m³, 1000 ppm - STE: 3800 mg/m³, 2000 ppm
OEL Type: FR - LTE: 1900 mg/m³, 1000 ppm - STE: 9500 mg/m³, 5000 ppm
OEL Type: DE - LTE: 960 mg/m³, 500 ppm - STE: 1920 mg/m³, 1000 ppm
OEL Type: HU - LTE: 1900 mg/m³

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Trade name: Viromer[®] YELLOW – liquid bulk
Product No: VY-01LB-0; VY-01LB-1; VY-01LB-3
Version: MSDS002-YELLOW / EN

Print date: 13.05.2014
Revision date: 13.05.2014

OEL Type: PL - LTE: 1900 mg/m³
OEL Type: ES - LTE: 1910 mg/m³, 1000 ppm
OEL Type: SE - LTE: 1000 mg/m³, 500 ppm - STE: 1900 mg/m³, 1000 ppm
OEL Type: GB - LTE: 1920 mg/m³, 1000 ppm

8.2 Exposure controls

8.2.1 Appropriate engineering controls: Ensure adequate ventilation, especially in confined areas.

8.2.2 Personal protective equipment: Personal Protective Equipment requirements are dependent on the user institution's risk assessment and are specific to the risk assessment for each laboratory where this material may be used.

Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment
Hand protection	Impervious gloves
Eye protection	Safety glasses with side-shields.
Skin and body protection	Lightweight protective clothing.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice

8.2.3 Environmental exposure controls: Prevent product from entering drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Unless otherwise indicated, tests have been carried out at 20°C and at normal atmospheric pressure (760 mm Hg - 1 atm). Parameters indicated with * refer to anhydrous and undenatured ethanol.

Appearance and colour:	colorless liquid	
Odour:	N.A.	
Odour threshold:	N.A.	
pH:	alkaline	
Melting point / freezing point:	-114°C*	GESTIS data base
Initial boiling point and boiling range:	78°C*	GESTIS data base
Solid/gas flammability:	N.A.	GESTIS data base
lower flammability or explosive limits:	3,1 Vol.-% (59 g/m ³)	GESTIS data base
upper flammability or explosive limits:	27,7 Vol.-% (532 g/m ³)*	GESTIS data base
Vapour density:	1,59 g/cm ³ *	www.weka.de
Flash point:	22°C*	GESTIS data base
Evaporation rate:	N.A.	
Vapour pressure:	58,0 mbar	GESTIS data base
Relative density:	0,89 g/cm ³	calculated
Solubility in water:	Soluble	
Lipid solubility:	N.A.	
Partition coefficient (n-octanol/water):	-0,3*	GESTIS data base
Auto-ignition temperature:	N.A.	
Decomposition temperature:	N.A.	
Viscosity:	1,201 mPa*s (dynamic)	www.weka.de
Explosive properties:	Flammable liquid and vapour	
Oxidizing properties:	N.A.	

9.2. Other information: None

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

Stable under normal conditions.

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Trade name: Viromer[®] YELLOW – liquid bulk
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10.3. Possibility of hazardous reactions

It may generate flammable gases on contact with elementary metals (alkalis and alkaline earth), nitrides, and powerful reducing agents. It may catch fire on contact with oxidizing mineral acids, elementary metals (alkalis and alkaline earth), nitrides, organic peroxides and hydroperoxides, oxidizing agents, and reducing agents.

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces.

10.5. Incompatible materials

Avoid contact with combustible materials. The product could catch fire.

10.6. Hazardous decomposition products

None under normal use

SECTION 11. Toxicological information

11.1. Information on toxicological effects

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture. Since the mixture has not been generally tested to establish its effects on health, the information pertaining to substances set out in section 3 is provided below.

Acute toxicity: ethanol; ethyl alcohol

Index No: 603-002-00-5, CAS: 64-17-5, EC: 200-578-6, REACH No: 01-2119457610-43

Test: LD50 - Route: Oral - Species: Rat 6200 mg/kg

Test: LD50 - Route: Oral - Species: Rabbit 6300 mg/kg

Test: LC50 - Route: Inhalation - Species: Rat 124,7mg/l/4h

Irritation: May cause skin and eye irritation in susceptible persons.

Corrosivity: none

Sensitization: not tested

Repeated dose toxicity: not tested

Carcinogenicity: not tested

Mutagenicity: not tested

Toxicity for reproduction: not tested

Inhalation and Ingestion: May be harmful after inhalation or if swallowed.

SECTION 12. Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment. Since no ecotoxicological data about the mixture is available, the concentration of each substance must be considered to assess the ecotoxicological effects resulting from exposure to the mixture.

ethanol; ethyl alcohol - CAS: 64-17-5

Test: LC50 Fish - Duration: 48h - mg/l: 8.14

Test: EC50 BACTERIA - Duration: 30 min - mg/l: 34634

Test: EC50 Daphnia - Duration: 48h - mg/l: 9268

12.2. Persistence and degradability

Ethanol: none persistent; volatile and inherently biodegradable

12.3. Bioaccumulative potential

Not known for the mixture; Ethanol log K_{ow} = -0,3

12.4. Mobility in soil

Not known for the mixture; ethanol is volatile and easily evaporates from the soil surface.

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects None.

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SECTION 13. Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.

SECTION 14. Transport information

14.1. UN number ADR/IATA/IMDG-UN number: 1170

14.2. UN proper shipping name ADR-Shipping /IATA/IMDG technical Name: ETHANOL IN SOLUTION

14.3. Transport hazard class(es) ADR/IATA/IMDG-Label: 3

14.4. Packing Group ADR/IATA/IMDG-Packing Group: III

14.5. Environmental hazards ADR/RID / IMDG-Code / ICAO-TI / IATA-DGR: none

Marine pollutant: No

14.6. Special Precautions for User IMDG-Technical name: ETHANOL IN SOLUTION

See also section 6-8

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code no

SECTION 15. Regulatory information

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

Information according to 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline)

Directive 2004/42/CE on the limitation of emissions of volatile organic compounds

Regulation (EC) No. 842/2006 on certain fluorinated green house gases

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer

15.2. Chemical Safety Assessment Mixture did not undergo a safety assessment.

SECTION 16: Other information

16.1 Indication of changes

This is the first English version of the (M)SDS for Viromer YELLOW. This safety data sheet has been completely updated in compliance with Regulation 453/2010/EU.

16.2 Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

CLP: Classification, Labeling, Packaging.

EC50: Median effective concentration.

IATA: International Air Transport Association.

IMDG: International Maritime Code for Dangerous Goods.

LC50: Lethal concentration, for 50 percent of test population.

LD50: Lethal dose, for 50 percent of test population.

LTE: Long-term exposure.

N.A.: Not available

OEL: Occupational exposure limit.

PBT: Persistent, Bioaccumulative and Toxic.

REACH Registration, Evaluation, Authorization and Restriction of Chemicals

RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.

STE: Short-term exposure.

VOC Volatile Organic Compounds

vPvB: very Persistent and very Bioaccumulative.

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16.3 Key literature references and sources for data

www.baua.de; www.gischem.de; gestis.itrust.de; www.reach-clp-helpdesk.de

REACH regulation (EC) No. 1907/2006, No. 836/2012; CLP regulation (EC) No. 1272/2008; Guidance 67/548/EWG and 1999/45/EWG; TRGS 900 / 500 (national guidance)

ECHA CHEM (European Chemicals Agency); GESTIS International Limit Values (IFA)

16.4 Relevant R-, H- and EUH-phrases (number and full text):

R11	Highly flammable (Guidance 67/548/EWG)
H225; Flam. Liq. 2	Highly flammable liquid and vapour (CLP regulation (EC) No. 1272/2008)

16.5 Training advice: Employees handling with the aforementioned product have been scheduled regarding accompanying risks and appropriate safety precautions.

16.6 Further information: The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.