

Safety data sheet

MoleStrips™ RNA Cells (Lysis buffer)

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

Product use: Extraction of total RNA.

Distributor:

Mole Genetics AS

Vollsveien 13D

N-1366 Lysaker

Norway

Tel:+47 67101820 Fax:+47 67101821

Emergency telephone number: +47 67101820

The emergency telephone is open between 8 a.m. and 4 p.m. on workdays.

Email: mail@molegenetics.com

2. Hazards identification

Harmful by inhalation, in contact with skin and if swallowed. Contact with acids liberates very toxic gas.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. Composition/information on ingredients

| Einecs no. | Substances | Classification | w/w% |
|------------|-------------------------|--------------------------|-------|
| 209-812-1 | Guanidinium-thiocyanate | Xn; R20/21/22 R32 R52/53 | 50-75 |

Please see section 16 for the full text of the R-phrases

4. First aid measures

Inhalation

Seek fresh air. Seek medical advice in case of persistent discomfort.

Ingestion

Wash out mouth thoroughly and drink 1-2 glasses of water in small sips. Seek medical advice in case of discomfort.

Skin

Remove contaminated clothing. Rinse with water. Seek medical advice in case of persistent discomfort.

Eyes

Flush with water (preferably using eye wash equipment) until irritation subsides. Seek medical advice if symptoms persist.

Other information

When obtaining medical advice, show the safety data sheet or label.

5. Fire-fighting measures

The product is not directly flammable. Avoid inhalation of vapour and fumes – seek fresh air.

6. Accidental release measures

Use the same personal protective equipment as stated in section 8. Prevent spillage from entering drains and/or surface water. Contain and absorb spill with sand or other absorbent material and transfer to suitable waste containers. See section 13 for instructions on disposal.

7. Handling and storage

Handling

See section 8 for information about precautions for use and personal protective equipment.

Storage

Store safely, out of reach of children and away from food, animal feeding stuffs, medicines, etc.

8. Exposure controls/ personal protection

Precautions for use

Work under effective process ventilation (e.g. local exhaust ventilation). Wash hands before breaks, before using restroom facilities, and at the end of work.

Respiratory protection

In case of insufficient ventilation, wear respiratory protective equipment with filter B.

Gloves and protective clothing

Wear suitable protective clothing. Wear protective gloves made of nitrile rubber.

Eye protection

Wear safety goggles.

Occupational exposure limits

Contains no substances subject to reporting requirements.

9. Physical and chemical properties

State: Liquid

Colour: Clear

Solubility in water: Soluble

10. Stability and reactivity

The product is stable when used in accordance with the supplier's directions. Reacts with strong acids to form very toxic gases.

11. Toxicological information

Acute

Inhalation

Harmful by inhalation.

Ingestion

Harmful if swallowed.

Skin contact

Harmful in contact with skin.

Eye contact

Temporary irritation.

Long-term effects

None known.

12. Ecological information

Avoid discharge to drain or surface water.

Ecotoxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Mobility

Mixable with water. May spread in the aquatic environment.

13. Disposal considerations

Collect spills and waste in closed, leak-proof containers for disposal at the local hazardous waste site.

EWC code: Depends on line of business and use, for instance 15 01 10 packaging containing residues of or contaminated by dangerous substances.

Absorbent/cloth contaminated with the product:

EWC code: 15 02 02 absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances.

14. Transport information

The classification is based on the content of ethanol in MoleStrips™ wells 2, 4 and 5 and on 2-propanol in MoleStrips™ well 3.

The product must be transported in accordance with national and/or international rules for transport of dangerous goods by road and sea according to ADR and IMDG.

ADR: UN 1170 ; ETHANOL SOLUTION ; 3 ; II ; D/E

UN 1219 ; ISOPROPANOL ; 3 ; II ; D/E

IMDG: UN 1170 ; ETHANOL SOLUTION ; 3 ; II

UN 1219 ; ISOPROPANOL ; 3 ; II

Classification code: F1 Label ADR: 3 Hazard identification number: 33

Flash point: 12°C Label IMDG: 3 IMDG EmS.: F-E, S-D

Transport according to ADR 1.1.3.6:Factor: 3. Maximum total quantity per transport unit: 333 l/kg.

Limited quantities

ADR: Maximum quantity: 3 L per inner packaging and 30 kg per package for combination packaging. When using shrink or stretch wrapping, the limit is 1 L per inner packaging and 20 kg per package (inner packagings must be made of metal or plastic which does not break or perforate easily).

IMDG:Maximum quantity: 3 L per inner packaging and 30 kg per package for combination packaging. When using shrink or stretch wrapping, the limit is 20 kg gross per package (inner packagings must be made of metal or plastic which does not break or perforate easily).

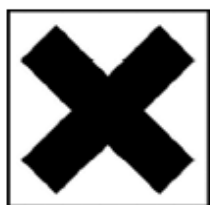
15. Regulatory information

Hazard designation: Harmful

Hazard symbols: Xn

Contains

Guanidinium-thiocyanate



Harmful

R-phrases

Harmful by inhalation, in contact with skin and if swallowed. (R20/21/22)

Contact with acids liberates very toxic gas. (R32)

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. (R52/53)

S-phrases

Wear suitable protective clothing and gloves. (S36/37)

Avoid release to the environment. Refer to special instructions/safety data sheet. (S61)

Other labelling

None.

Chemical safety assessment

Chemical safety assessment has not been performed.

Restrictions on use

None.

Training requirement

No special training is required, but a thorough knowledge of this safety data sheet should be a prerequisite condition.

16. Other information**Sources used**

ADR 2007 edition and IMDG 2006 edition.

Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations + Directive 2006/8/EC.

Commission Directive 2004/73/EC of 29 April 2004 adapting to technical progress for the twenty-ninth time Council Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances.

Directive 2000/39/EC + 2006/15/EC (Occupational Exposure Limits).

2001/118/EC: Commission Decision of 16 January 2001 amending Decision 2000/532/EC as regards the list of wastes.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency

Other information

This safety data sheet was prepared from information provided by the supplier about the product at the time of preparation (e.g. data sheets and the like).

Full text of the R-phrases that are stated in section 3.

R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R32 Contact with acids liberates very toxic gas.

R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety data sheet

MoleStrips™ RNA Cells (Glycogen)

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

Product use: Extraction of total RNA.

Distributor:

Mole Genetics AS

Vollsveien 13D

N-1366 Lysaker

Norway

Tel:+47 67101820 Fax:+47 67101821

Emergency telephone number: +47 67101820

The emergency telephone is open between 8 a.m. and 4 p.m. on workdays.

Email: mail@molegenetics.com

2. Hazards identification

Risk advice to man and the environment

There is at present no information or indication of hazardous properties.

The usual precautions taken when handling chemicals should be observed.

Note: slightly hazardous to water and ground

3. Composition/information on ingredients

| CAS no. | EF no. | Substances | Classification | w/w% |
|-----------|-----------|------------|----------------|------|
| 9005-79-2 | 232-683-8 | Glycogen | - | - |

4. First aid measures

Inhalation

Seek fresh air. Seek medical advice in case of persistent discomfort.

Ingestion

Wash out mouth thoroughly.

Skin

Wash the skin thoroughly with soap and water.

Eyes

Flush with water (preferably using eye wash equipment) until irritation subsides.

Other information

When obtaining medical advice, show the safety data sheet or label.

5. Fire-fighting measures

Extinguishing media: No restrictions

Decomposition: Dangerous decomposition is not anticipated

6. Accidental release measures

Use the same personal protective equipment as stated in section 8. Prevent spillage from entering drains and/or surface water. Contain and absorb spill with sand or other absorbent material and transfer to suitable waste containers. See section 13 for instructions on disposal.

7. Handling and storage

Handling

See section 8 for information about precautions for use and personal protective equipment.

Storage

Store safely, out of reach of children and away from food, animal feeding stuffs, medicines, etc.

8. Exposure controls/ personal protection

Precautions for use

Work under effective process ventilation (e.g. local exhaust ventilation). Wash hands before breaks, before using restroom facilities, and at the end of work.

Respiratory protection

In case of insufficient ventilation, wear respiratory protective equipment with filter B.

Gloves and protective clothing

Wear suitable protective clothing. Wear protective gloves made of nitrile rubber.

Eye protection

Wear safety goggles.

Occupational exposure limits

Contains no substances subject to reporting requirements.

9. Physical and chemical properties

Physical properties

State: Crystalline

Colour: Beige

Solubility in water: Soluble

Safety properties

pH: No available data

Melting point: 270 - 280 °C

Boiling point: No available data

Flash point: No available data

Fire point: No available data

Lower explosive limit: No available data

Upper explosive limit: No available data

10. Stability and reactivity

The product is stable when used in accordance with the supplier's directions. Reacts with strong oxidizing agents.

11. Toxicological information

Acute Toxicity

Intoxication has so far not become known

Long-term effects

None known.

12. Ecological information

Avoid discharge to drain or surface water.

Ecotoxicity

None known.

Mobility

Mixable with water. May spread in the aquatic environment.

13. Disposal considerations

Can be disposed of according to local regulations.

14. Transport information

The classification is based on the content of ethanol in MoleStrips™ wells 2, 4 and 5 and on 2-propanol in MoleStrips™ well 3.

The product must be transported in accordance with national and/or international rules for transport of dangerous goods by road and sea according to ADR and IMDG.

ADR: UN 1170 ; ETHANOL SOLUTION ; 3 ; II ; D/E

UN 1219 ; ISOPROPANOL ; 3 ; II ; D/E

IMDG: UN 1170 ; ETHANOL SOLUTION ; 3 ; II

UN 1219 ; ISOPROPANOL ; 3 ; II

Classification code: F1 Label ADR: 3 Hazard identification number: 33

Flash point: 12°C Label IMDG: 3 IMDG EmS.: F-E, S-D

Transport according to ADR 1.1.3.6:Factor: 3. Maximum total quantity per transport unit: 333 l/kg.

Limited quantities

ADR: Maximum quantity: 3 L per inner packaging and 30 kg per package for combination packaging. When using shrink or stretch wrapping, the limit is 1 L per inner packaging and 20 kg per package (inner packagings must be made of metal or plastic which does not break or perforate easily).

IMDG:Maximum quantity: 3 L per inner packaging and 30 kg per package for combination packaging. When using shrink or stretch wrapping, the limit is 20 kg gross per package (inner packagings must be made of metal or plastic which does not break or perforate easily).

15. Regulatory information

Labeling according to EC-Directives

This product has not to be labeled in accordance with EEC directive 67/548 and 99/45

16. Other information

Other information

This safety data sheet was prepared from information provided by the supplier about the product at the time of preparation (e.g. data sheets and the like).

Safety data sheet

MoleStrips™ RNA Cells (Wells 2 - 6)

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

Product use: Extraction of total RNA.

Distributor:

Mole Genetics AS

Vollsveien 13D

N-1366 Lysaker

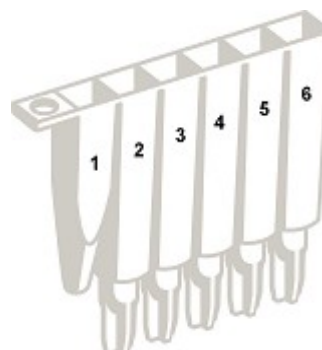
Norway

Tel:+47 67101820 Fax:+47 67101821

Emergency telephone number: +47 67101820

The emergency telephone is open between 8 a.m. and 4 p.m. on workdays.

Email: mail@molegenetics.com



2. Hazards identification

Highly flammable (wells 2, 3, 5)

The product shall not be classified as hazardous according to EU classification and labelling rules (wells 4, 6)

3. Composition/information on ingredients (This product is part of MoleStrips™ RNA Cells)

Wells 2, 5:

| Einecs no. | Substances | Classification | w/w% |
|------------|--|----------------------------|--------|
| 200-578-6 | Ethanol | F;R11 | 50-100 |
| 203-550-1 | 4-Methylpentan-2-one: Isobutyl methyl ketone | F;R11 Xn;R20 Xi;R36/37 R66 | 1-5 12 |

12) The substance is included in the EU list of limit values for occupational exposure

Well 3:

| Einecs no. | Substances | Classification | w/w% |
|------------|------------|------------------|--------|
| 200-661-7 | 2-propanol | F;R11 Xi;R36 R67 | 90-100 |

Well 4:

| Einecs no. | Substances | Classification | w/w% |
|------------|--------------------------------|-------------------------|-------|
| 200-578-6 | Ethanol | F;R11 | 10-25 |
| 231-511-9 | Sodium perchlorate monohydrate | O;R9 Xn;R22 | 10-25 |
| -- | Triton(R) X-100 | Xn;R22, Xi;R41 N;R51/53 | 0-1 |

Well 6:

| Einecs no. | Substances | Classification | w/w% |
|------------|---|----------------|------|
| | Contains no substances subject to reporting requirements. | | |

Please see section 16 for the full text of the R-phrases

4. First aid measures

Inhalation

Seek fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion

Wash out mouth thoroughly and drink 1-2 glasses of water in small sips. Seek medical advice.

Skin

Remove contaminated clothing. Wash the skin thoroughly with water and continue washing for a long time.

Eyes

Flush with water (preferably using eye wash equipment) until irritation subsides and at least for 15 minutes. Seek medical advice if symptoms persist.

Burns

Flush with water until pain ceases. Remove clothing that is not stuck to the skin – seek medical advice/transport to hospital. If possible, continue flushing until medical attention is obtained.

Other information

When obtaining medical advice, show the safety data sheet or label.

5. Fire-fighting measures

Extinguish with powder, foam, carbon dioxide or water mist. Do not use water stream, as it may spread the fire. Use water or water mist to cool non-ignited stock. Move containers from danger area if it can be done without risk. Avoid inhalation of vapour and flue gases – seek fresh air.

6. Accidental release measures

Use the same personal protective equipment as stated in section 8. Wipe up minor spills with a cloth.

Smoking and naked flames prohibited.

Contain and absorb spill with sand or other absorbent, non-combustible material and transfer to suitable waste containers. See section 13 for instructions on disposal.

7. Handling and storage

Handling

See section 8 for information about precautions for use and personal protective equipment. Smoking and naked flames prohibited.

Storage

Store safely, out of reach of children and away from food, animal feeding stuffs, medicines, etc.

8. Exposure controls/ personal protection

Precautions for use

Use the product under well-ventilated conditions. Running water and eye wash equipment should be available. Wash hands before breaks, before using restroom facilities, and at the end of work. Smoking and naked flames prohibited.

Respiratory protection

Not required.

Gloves and protective clothing

Wear protective gloves made of nitrile rubber.

Eye protection

Wear safety goggles.

Occupational exposure limits, wells 2, 5

| Ingredients | Exposure limit | Remarks |
|--|-----------------------------------|----------------|
| 4-Methylpentan-2-one: Isobutyl methyl ketone | 20 (8h), 50 (15m) ppm 980 (8h) | - |

Control methods

Compliance with the stated occupational exposure limits may be checked by occupational hygiene measurements.

83 (8h), 208 (15m) mg/m³

Occupational exposure limits, well 3

| Ingredients | Exposure limit (OSHA) | Remarks |
|--------------------|------------------------------|----------------|
| 2-propanol | 400 (8h) 980 (8h) | - |

Control methods

Compliance with the stated occupational exposure limits may be checked by occupational hygiene measurements.

Occupational exposure limits, wells 4, 6

Contains no substances subject to reporting requirements.

9. Physical and chemical properties

Physical properties, Well 2

State: Magnetic beads suspended in liquid.

Colour: Reddish brown beads in clear liquid.

Solubility in water: Insoluble beads in water soluble liquid.

Physical properties, Wells 3, 4, 5, 6

State: Liquid

Colour: Clear

Solubility in water: Soluble

Safety properties, Well 3

| | | | |
|------------------------|-------------------|------------------------|---------|
| pH: | No available data | Melting point: | -89.5°C |
| Boiling point: | 81 - 83°C | Flash point: | 12°C |
| Autoignition temp: | 399°C | Lower explosive limit: | 2.5% |
| Upper explosive limit: | 12% | | |

10. Stability and reactivity

The product is stable when used in accordance with the supplier's directions.

11. Toxicological information

Acute

Inhalation

The product releases organic solvent vapours which may cause lethargy and dizziness. At high concentrations, the vapours may cause headache and intoxication. Inhalation of vapours may cause irritation to the upper airways.

Ingestion

Ingestion may be harmful.

Skin contact

May cause slight irritation.

Eye contact

May cause eye irritation.

Long-term effects

None known.

12. Ecological information

Avoid discharge to drain or surface water.

13. Disposal considerations

Collect spills and waste in closed, leak-proof containers for disposal at the local hazardous waste site.

EWC code: Depends on line of business and use, for instance 15 01 10 packaging containing residues of or contaminated by dangerous substances.

Absorbent/cloth contaminated with the product:

EWC code: 15 02 02 absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances.

14. Transport information

The classification is based on the content of ethanol in wells 2, 4 and 5 and on 2-propanol in well 3.

The product must be transported in accordance with national and/or international rules for transport of dangerous goods by road and sea according to ADR and IMDG.

ADR: UN 1170 ; ETHANOL SOLUTION ; 3 ; II ; D/E
UN 1219 ; ISOPROPANOL ; 3 ; II ; D/E

IMDG: UN 1170 ; ETHANOL SOLUTION ; 3 ; II
UN 1219 ; ISOPROPANOL ; 3 ; II

Classification code: F1 Label ADR: 3 Hazard identification number: 33

Flash point: 12°C Label IMDG: 3 IMDG EmS.: F-E, S-D

Transport according to ADR 1.1.3.6:Factor: 3. Maximum total quantity per transport unit: 333 l/kg.

Limited quantities

ADR: Maximum quantity: 3 L per inner packaging and 30 kg per package for combination packaging. When using shrink or stretch wrapping, the limit is 1 L per inner packaging and 20 kg per package (inner packagings must be made of metal or plastic which does not break or perforate easily).

IMDG:Maximum quantity: 3 L per inner packaging and 30 kg per package for combination packaging. When using shrink or stretch wrapping, the limit is 20 kg gross per package (inner packagings must be made of metal or plastic which does not break or perforate easily).

15. Regulatory information

Wells 2, 5:

Hazard designation: Highly flammable

Hazard symbols: F

R-phrases

Highly flammable. (R11)

S-phrases

Keep container in a well ventilated place. (S9)

Keep away from sources of ignition - No smoking. (S16)

Other labelling

None.

Chemical safety assessment

Chemical safety assessment has not been performed.

Restrictions on use

None.

Training requirement

No special training is required, but a thorough knowledge of this safety data sheet should be a prerequisite condition.



Highly flammable

Well 3:

Hazard designation: Highly flammable

Hazard symbols: F

R-phrases

Highly flammable. (R11)

Irritating to eyes. (R36)

Vapours may cause drowsiness and dizziness. (R67)

S-phrases

Keep container tightly closed. (S7)

Keep away from sources of ignition - No smoking. (S16)

Avoid contact with skin and eyes. (S24/25)

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. (S26)

Other labelling

None.

Chemical safety assessment

Chemical safety assessment has not been performed.

Restrictions on use

None.

Training requirement

No special training is required, but a thorough knowledge of this safety data sheet should be a prerequisite condition.



Highly flammable

Wells 4, 6:

Hazard designation: It has been assessed that the product shall not be classified as hazardous according to EU classification and labelling rules.

Other labelling

None.

Chemical safety assessment

Chemical safety assessment has not been performed.

Restrictions on use

None.

Training requirement

No special training is required, but a thorough knowledge of this safety data sheet should be a prerequisite condition.

16. Other information

Sources used

ADR 2007 edition and IMDG 2006 edition.

Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations + Directive 2006/8/EC.

Commission Directive 2004/73/EC of 29 April 2004 adapting to technical progress for the twenty-ninth time Council Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances.

Directive 2000/39/EC + 2006/15/EC (Occupational Exposure Limits).

2001/118/EC: Commission Decision of 16 January 2001 amending Decision 2000/532/EC as regards the list of wastes.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency

Other information

This safety data sheet was prepared from information provided by the supplier about the product at the time of preparation (e.g. data sheets and the like).

Full text of the R-phrases that are stated in section 3.

Wells 2, 5:

R11 Highly flammable.

R20 Harmful by inhalation.

R36/37 Irritating to eyes and respiratory system.

R66 Repeated exposure may cause skin dryness or cracking.

Well 3:

R11 Highly flammable.

R36 Irritating to eyes.

R67 Vapours may cause drowsiness and dizziness.

Well 4:

R11 Highly flammable.

R22 Harmful if swallowed.

R41 Risk of serious damage to eyes.

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R9 Explosive when mixed with combustible material.

Well 6:

No R-phrases