

## Material Safety Data Sheet

According to EC Directive 2001/58/EC

Date prepared: 17.09.2009

Date changed: 17.09.2007

## 1 Product Information

**Product name:** MoleStrips™ mRNA**Product number:** MG18-101 & MG18-102**Manufacturer:** Mole Genetics AS, Vollsveien 13D, N-1366 Lysaker, Norway  
Phone: +47 6710 1820, Telefax: +47 6710 1821

## 2 Hazardous Components/ Identity Information

Hazardous/Non-hazardous Components	CAS no.	EC No	Labeling accord. EC Directives	Weight %
<b>Magnetic beads / Storage buffer</b>				
Proprietary magnetic microparticles	None	-	-	1.0 – 5.0 %
Water	7732-18-5	231-791-2	-	< 97,0 %
Proprietary buffer	None	-	-	< 2.5 %
Sodium azide	26628-22-8	247-852-1	R28/32/50/53, Xn	0.05 %
<b>Lysis, binding or washing buffers</b>				
Lithium chloride (LiCl)	7447-41-8	231-212-3	R22-36/37/38 Xn	1 – 5
TRIZMA BASE	77-86-1-	201-064-4	R36, Xn	1 - 5
Lithium dodecyl sulfate	2044-56-6	218-058-2	R36/37/38, Xi	0.1 – 1.0
Water, distilled, conductivity of similar purity	7732-18-5	231-791-2	-	60 - 100
The product contains no substance which at their given concentration, are considered to be hazardous to health				
<b>Elution buffer</b>				
TRIZMA BASE	77-86-1-	201-064-4	R36, Xn	1 - 5
Water, distilled, conductivity of similar purity	7732-18-5	231-791-2	-	60 - 100
The product contains no substance which at their given concentration, are considered to be hazardous to Health.				

### 3 Health Hazard Data

#### **Magnetic beads / Storage buffer**

**OSHA Hazard:** None

**Routes of entry:** Inhalation, skin contact or eye contact from splashes.

#### **Lysis, binding or washing buffers**

Classified and labeled in accordance with Directive 1999/45/EC

**Indication of danger:** Not hazardous

**Routes of entry:** Inhalation, skin contact or eye contact from splashes.

#### **Elution buffer**

Classified and labeled in accordance with Directive 1999/45/EC

**Indication of danger:** Not hazardous

**Routes of entry:** Inhalation, skin contact or eye contact from splashes.

### 4 Emergency and First Aid Procedures

#### **Magnetic beads / Storage buffer**

##### **Inhalation**

Remove to fresh air. Seek medical advice if breathing difficulty develops

##### **Ingestion**

Give water to victim, if conscious. If large amounts were swallowed, seek medical advice

##### **Skin contact**

Rinse affected area with water

##### **Eye contact**

Rinse eyes with copious amounts of water. If irritation develops, seek medical advice

#### **Lysis, binding or washing buffers**

##### **Inhalation**

Remove to fresh air

##### **Ingestion**

Clean mouth with water and afterwards drink plenty of water

##### **Skin contact**

Wash off immediately with plenty of water

##### **Eye contact**

Rinse thoroughly with plenty of water, also under the eyelids

##### **Notes to physician**

Treat symptomatically

#### **Elution buffer**

##### **Inhalation**

Remove to fresh air

**Ingestion**

Clean mouth with water and afterwards drink plenty of water

**Skin contact**

Wash off immediately with plenty of water

**Eye contact**

Rinse thoroughly with plenty of water, also under the eyelids

**Notes to physician**

Treat symptomatically

## 5 Fire-fighting Procedures

**Magnetic beads / Storage buffer**

These components are not considered to present a fire or explosion hazard when handled as directed.

**Suitable extinguishing media**

Water spray, alcohol-resistant foam, dry chemical or carbon dioxide

**Special protective equipment for firefighters**

If necessary, wear self-contained breathing apparatus

**Lysis, binding or washing buffers****Suitable extinguishing media**

Water spray, foam, dry powder, alcohol-resistant foam, dry chemical or carbon dioxide. This product is not flammable.

**Special protective equipment for firefighters**

Wear self-contained breathing apparatus and protective suit

**Elution buffer****Suitable extinguishing media**

Water spray, foam, dry powder, alcohol-resistant foam, dry chemical or carbon dioxide. This product is not flammable.

**Special protective equipment for firefighters**

Wear self-contained breathing apparatus and protective suit

## 6 Precautions for Safe Handling and Use

**Magnetic beads / Storage buffer****Personal precautions**

Ventilate area of leak or spill. Wear appropriate personal protective equipment as indicated in section 8.

**Methods for cleaning up**

Clean-up spill site using approved cleaning solution and warm water. Small amounts of liquid may be flushed to sewer followed by copious amount of water.

Sodium azide is used as a preservative in this product. Sodium azide may react with lead or copper plumbing to form potentially explosive metal azides. If material is disposed of using plumbing, always flush drain with a large volume of water. Contain any spillage with absorbent material and place in appropriate container. Wash and disinfect spill site after clean up.

**Waste Disposal**

Please consult local, state and federal regulations for additional guidance and disposal.

**Lysis, binding or washing buffers****Personal precautions**

Use personal protective equipment

**Methods for cleaning up**

Soak up with inert absorbent material

**Waste Disposal**

Prevent product from entering drains

**Elution buffer****Personal precautions**

Use personal protective equipment

**Methods for cleaning up**

Soak up with inert absorbent material

**Waste Disposal**

Prevent product from entering drains

**7 Precautions to be taken in handling and Storage****Magnetic beads / Storage buffer, lysis, binding or washing buffers**

<b>Handling</b>	No special handling advice required
<b>Storage</b>	Store in a dry and cool place (2-8 ° C)

**Elution buffer**

<b>Handling</b>	No special handling advice required
<b>Storage</b>	Store in a dry and cool place (2-8 ° C)

**8 Exposure controls / Personal protection****Magnetic beads/ Storage buffer, lysis, binding or washing buffer****Ventilation**

A system of local and/or general exhaust is recommended. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

**Respiratory protection**

In case of insufficient ventilation wear suitable respiratory equipment

**Protective gloves**

Wear appropriate gloves to prevent skin contact

**Eye protection**

Wear appropriate eye protection to prevent eye contact.

**Other protective clothing or equipment**

Wear appropriate body protection to prevent skin contact. Eye wash stations and deluge showers.

**Work and hygienic practices**

Good laboratory technique should be used when handling this product. Observe appropriate chemical hygiene. Avoid contact with skin or eyes. Do not place in mouth. Do not eat, drink or smoke while working with product. Upon completion of work activities involving this product, wash hands thoroughly with soap and water.

**Environmental exposure controls**

Prevent product from entering drains

**Elution buffer****Ventilation**

Ensure adequate ventilation. Especially in confined areas

**Respiratory protection**

In case of insufficient ventilation wear suitable respiratory equipment

**Protective gloves**

Wear appropriate gloves to prevent skin contact

**Eye protection**

Wear appropriate eye protection to prevent eye contact.

**Other protective clothing or equipment**

Wear appropriate body protection to prevent skin contact.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice

**Environmental exposure controls**

Prevent product from entering drains

**Sodium azide exposure limits**

Country	Source	Type	Value
USA	ACGIH	Ceiling	co 0.29 mg/m <sup>3</sup>
New Zealand	OEL		
Poland		NDS	0.1 mg/m <sup>3</sup>

**9 Physical and Chemical Characteristics****Magnetic beads / Storage buffer****Appearance and odor** Brown liquid emulsion**pH** 7.0 – 8.0

No other information is available

**Lysis, binding or washing buffer****Appearance and odor** Clear liquid

No other information is available

**Elution buffer****Appearance and odor** Clear liquid

No other information is available

## 10 Stability and Reactivity Data

### Magnetic beads/ Storage buffer, lysis, binding or washing buffers

<b>Stability</b>	Stabile under normal handling and storage conditions
<b>Incompatibility (materials to avoid)</b>	Not determined
<b>Hazardous decomposition or byproducts</b>	Not determined
<b>Hazardous polymerization</b>	Does not occur

### Elution buffer

<b>Stability</b>	Stable
<b>Incompatibility (materials to avoid)</b>	No information available
<b>Hazardous decomposition or byproducts</b>	No information available
<b>Hazardous polymerization</b>	Does not occur

## 11 Toxicological Information

### Magnetic beads/ Storage buffer, lysis, binding or washing buffers

To the best of our knowledge the toxicological properties of the product have not been fully investigated

#### Toxicity data

Proprietary Buffer Ingredient (Magnetic beads):	Oral, rat: 3000 mg/kg, LD50 Inhalation, rat: >42,000 mg/m <sup>3</sup> Oral, mouse: 4000 mg/kg, LD50 Intraperitoneal, mouse: 2602 mg/kg, LD50 Subcutaneous, mouse: 3 g/kg, LD50 Intravenous, mouse: 645 mg/kg, LD50 Intracervical, mouse: 131 mg/kg, LD50 Skin, rabbit: >10000 mg/kg, LD50
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Sodium azide:	Inhalation, mouse: 32,400 mg/m <sup>3</sup> , LC50 Inhalation, rat: 37 mg/m <sup>3</sup> , LC50 Oral, mouse: 27 mg/kg, LD50 Oral, rat: 27 mg/kg, LD50 Skin, rabbit: 20 mg/kg, LD50 Skin, rat: 50 mg/kg, LD50
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Lithium chloride (LiCl)	Oral, rat/mouse: 526 mg/kg, LD50
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#### Principle Routes of Exposure/ Potential Health effects:

<b>Inhalation</b>	May cause irritation of respiratory tract
<b>Ingestion</b>	May be harmful if swallowed
<b>Skin contact</b>	May cause skin irritation and/or dermatitis
<b>Eye contact</b>	May cause eye irritation

#### Specific effects:

<b>Carcinogenic effects</b>	No information available
<b>Mutagenic effects</b>	No information available
<b>Reproductive toxicity</b>	No information available

**Sensitisation** No information available

**Target Organ Effects:** No information available

**Elution buffer**

**Acute toxicity** No data available

**Principle Routes of Exposure/ Potential Health effects:**

**Inhalation** May cause irritation of respiratory tract  
**Ingestion** May be harmful if swallowed  
**Skin contact** May cause skin irritation and/or dermatitis  
**Eye contact** May cause eye irritation of susceptible persons

**Specific effects:**

**Carcinogenic effects** No information available  
**Mutagenic effects** No information available  
**Reproductive toxicity** No information available  
**Sensitisation** No information available

**Target Organ Effects:** No information available

## 12 Ecological Information

To the best of our knowledge, the ecological impact of this product has not been fully investigated.

**Sodium azide**

**Ecotoxicity effects**

Toxicity to fish LC50 – Rainbow trout – 0.8 – 1.6 mg/L – 96h  
LC50 – Bluegrill/Sunfish – 0.7 – 0.8 mg/L – 96h

**Magnetic beads, lysis, binding or washing buffers**

**Ecotoxicity effects** No information available  
**Mobility** No information available  
**Biodegradation** Inherently biodegradable  
**Bioaccumulation** Does not bioaccumulate

**Elution buffer**

**Ecotoxicity effects** No information available  
**Mobility** No information available  
**Biodegradation** Inherently biodegradable  
**Bioaccumulation** Does not bioaccumulate

## 13 Disposal considerations

### **Product**

There are no uniform EC regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste.

### **Packaging**

Disposal in compliance with official regulations. Handle contaminated packaging in the same way as the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

## 14 Transport Information

### **IATA:**

<b>Proper shipping name</b>	Not classified as dangerous in the meaning of transport regulations
<b>Hazard Class</b>	No information available
<b>Subsidiary Class</b>	No information available
<b>Packing group</b>	No information available
<b>UN-No</b>	No information available

## 15 Other Information

The information herein is believed to be correct as of the date hereof but is provided without warranty of any kind. The recipient of our products is responsible for ensuring that, where applicable, existing laws and guidelines are observed.

### **Reasons for alteration**

Change in constituent data  
General update