

# SAFETY DATA SHEET

According to EC Directive 1907/2006/EC



## DIG Gel Shift Kit, 2nd generation

Version 2.2  
Processing date 19.02.2009

Page 1/8  
Printing date 26.02.2010

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Product information

Commercial Product Name:	DIG Gel Shift Kit, 2nd generation	
Mat.-No./ Genisys-No.:	03353591910	
Intended use:	Laboratory use	
Company:	Roche Diagnostics GmbH Sandhoferstrasse 116 68305 Mannheim	
E-mail:	mannheim.umweltschutz@roche.com	
Telephone:	+496217590	
Telefax:	+496217592890	
Responsible Department:	+49(0)621-759-2012 +49(0)621-759-4848 +49(0)8856-60-2629	
In case of emergencies:	Central Works Security Roche Diagnostics GmbH	+49(0)621-759-2203
Centre for detoxification:	Mainz Munich	+49(0)6131-19240 +49(0)89-19240

### 2. HAZARDS IDENTIFICATION

#### Risk advice to man and the environment

Is to be classified according to EEC directive 67/548 and 99/45 as hazardous. Substance resp. ingredient according to candidate list for attachment XIV of the REACH Regulation 1907/2006/EG

The usual precautions taken when handling chemicals should be observed.

Classification:	Toxic Dangerous for the environment	
Warnings:	R49 R23/25 R51/53	May cause cancer by inhalation. Toxic by inhalation and if swallowed. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Note:	hazardous to water and ground	

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Components

*Reaction Buffer*: 1 piece(s)

Labelling: T, N; R23/25-R51/53; S28-S36/37-S45

Ingredients	17,6 % Potassium cacodylate; CAS-No. 21416-85-3 Labelling: T, N ; R23/25-R50/53; S20/21-S28-S45-S60-S61
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# SAFETY DATA SHEET

According to EC Directive 1907/2006/EC



## DIG Gel Shift Kit, 2nd generation

Version 2.2  
Processing date 19.02.2009

Page 2/8  
Printing date 26.02.2010

*CoCl<sub>2</sub> solution*: 1 piece(s)  
Labelling: T; R49-R52/53; S53-S45  
Ingredients 0,3 % Cobalt dichloride hexahydrate; CAS-No. 7791-13-1  
Labelling: T, N ; R49-R22-R42/43-R50/53; S53-S22-S45-S60-S61

*DIG-ddUTP solution*: 1 piece(s)  
Labelling: Xn; R20/22; S7-S13  
Ingredients 0,1 % Digoxigenin-11-2',3'-dideoxy-uridine-5'-triphosphate; CAS-No. 127264-48-6  
Labelling: T+ ; R26/28-R33-R36; S1-S22-S25-S45

*Terminal transferase*: 1 piece(s)  
Labelling: not required  
Ingredients 50 % Glycerol; CAS-No. 56-81-5  
Labelling: not required  
  
0,5 % Triton X-100; CAS-No. 9036-19-5  
Labelling: Xn ; R22-R41; S24-S26-S39  
Terminal transferase; CAS-No. 9027-67-2  
Labelling: not required

*CSPD*: 1 piece(s)  
Labelling: not required  
Ingredients < 2 % Diethanolamine; CAS-No. 111-42-2  
Labelling: Xn ; R22-R38-R41-R48/22; S26-S36/37/39-S46

*remaining bottles*: 11 piece(s)  
Labelling: not required  
Contains no hazardous substances in concentrations to be declared

#### 4. FIRST AID MEASURES

Inhalation:	Remove victim to fresh air, seek medical advice.
Skin contact:	Wash skin with water thoroughly or use a shower.
Eye contact:	Promptly wash eyes with water for at least 15 minutes, seek medical advice.
Ingestion:	If accidentally swallowed obtain immediate medical attention.
Instructions for physician:	Symptomatic treatment by a physician.

#### 5. FIRE-FIGHTING MEASURES

Extinguishing media:	No restriction.
Decomposition:	Gases which are damaging to health do not form in dangerous quantities.

#### 6. ACCIDENTAL RELEASE MEASURES

Actions to be taken on spillage:	Absorb spilled substance with fluid binders.
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# SAFETY DATA SHEET

According to EC Directive 1907/2006/EC



## DIG Gel Shift Kit, 2nd generation

Version 2.2  
Processing date 19.02.2009

Page 3/8  
Printing date 26.02.2010

Absorbent material: No restriction.

Actions to be taken to limit damage: Consult a specialist for disposal of the spilled substance. If substance has entered a water course or sewer or contaminated soil, advise police or fire brigade. Inform the police.

### 7. HANDLING AND STORAGE

Handling: The product itself does not burn. Open and handle vessels carefully.

Storage: at -25~-15°C |-13~ 5°F.

Do not store together with: Flammable and oxidising substance, organic peroxides.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### CSPD

*Diethanolamine*

TLV: 1 mg/m<sup>3</sup>

#### Personal protective equipment

Respiratory protection: No personal respiratory protective equipment normally required.

Eye protection: Safety glasses

Hand protection: Protective gloves

Hygiene measures: Adopt general hygienic measures.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### *Reaction Buffer*

Form: liquid  
Miscibility with water: completely miscible  
pH: 6,6

#### *CoCl<sub>2</sub> solution*

Form: liquid  
Miscibility with water: completely miscible

#### *DIG-ddUTP solution*

Form: liquid  
Miscibility with water: completely miscible

# SAFETY DATA SHEET

According to EC Directive 1907/2006/EC



## DIG Gel Shift Kit, 2nd generation

Version 2.2  
Processing date 19.02.2009

Page 4/8  
Printing date 26.02.2010

### *Terminal transferase*

Form: liquid  
Miscibility with water: completely miscible  
pH: 7,2

### *CSPD*

Form: liquid  
Miscibility with water: completely miscible  
pH: 10,75

### *remaining bottles*

Form: solid+liquid  
Miscibility with water: partly miscible

## 10. STABILITY AND REACTIVITY

Hazardous reactions: none under normal use  
Hazardous decomposition products: Only in small concentrations

## 11. TOXICOLOGICAL INFORMATION

### **Reaction Buffer**

#### *Potassium cacodylate*

Oral toxicity: LD50 rat 2.600 mg/kg

### **CoCl<sub>2</sub> solution**

#### *Cobalt dichloride hexahydrate*

Oral toxicity: LD50 rat 766 mg/kg  
Toxicity (skin contact): LC50 rat > 2.000 mg/kg  
Toxicity (others): LD50 intraperitoneal rat 35 mg/kg  
LD50 intraperitoneal mouse 90 mg/kg  
LD50 intravenous guinea pig 26 mg/kg  
LD<sub>10</sub> subcutane rat 121 mg/kg  
LD<sub>10</sub> subcutane mouse 100 mg/kg

### **DIG-ddUTP solution**

#### *Digoxigenin-11-2',3'-dideoxy-uridine-5'-triphosphate*

Oral toxicity: LD50 dog 0,422 mg/kg  
Toxicity (others): LD50 oral cat 0,2 mg/kg

### **Terminal transferase**

#### *Glycerol*

Oral toxicity: LD50 rat 12.600 mg/kg  
LD50 mouse 4.090 mg/kg  
LD50 guinea pig 7.750 mg/kg  
Toxicity (inhalation): LC50 rat 1 h > 570 mg/m<sup>3</sup> (1 h)  
Toxicity (skin contact): LD50 rabbit > 10.000 mg/kg  
Toxicity (others): LD50 subcutane rat 100 mg/kg  
LD50 subcutane mouse 91 mg/kg  
LD50 intravenous rat 5.566 mg/kg  
LD50 intravenous mouse 4.250 mg/kg  
LD50 intraperitoneal rat 4.420 mg/kg

# SAFETY DATA SHEET

According to EC Directive 1907/2006/EC



## DIG Gel Shift Kit, 2nd generation

Version 2.2  
Processing date 19.02.2009

Page 5/8  
Printing date 26.02.2010

LD50 intraperitoneal mouse 8.700 mg/kg

### *Triton X-100*

Oral toxicity: LD50 rat 1.900 - 5.000 mg/kg  
Toxicity (skin contact): LD50 rabbit > 3.000 mg/kg

### **CSPD**

#### *Diethanolamine*

Oral toxicity: LD50 rat 620 µl/kg  
LD50 mouse 3.300 mg/kg  
LD50 rabbit 2.200 mg/kg  
Toxicity (skin contact): LD50 rabbit 7640 µl/kg  
Toxicity (others): LD50 intravenous rat 778 mg/kg  
LD50 intraperitoneal rat 120 mg/kg  
LD50 intraperitoneal mouse 210 mg/kg  
LD50 intramuscular rat 1.500 mg/kg  
LD50 subcutane rat 2.200 mg/kg

### **Toxicological information for the product**

Toxic substance/product.

## 12. ECOLOGICAL INFORMATION

Water hazard class: 2 hazardous to water and ground  
Classification according to German regulations (VwVwS)

### **Terminal transferase**

#### *Glycerol*

Toxicity to fish : LC50 *Leuciscus idus* > 10.000 mg/l  
LC50 *Carassius auratus* (Goldfish) > 5.000 mg/l (2 d)

Toxicity to algae : IC5 *Scenedesmus quadricauda* > 10.000 mg/l (168 h)

Toxicity to bacteria: EC5 *Pseudomonas putida* > 10.000 mg/l (16 h)

Toxicity to daphnia: EC50 *Daphnia magna* > 10.000 mg/l (24 h)

Value log P(o/w): -2,66  
Biodegradability: > 60 % 28 d Closed bottle test  
71 % 5 d BSB method  
95 % COD (chemical oxygen demand)

### *Triton X-100*

Toxicity to fish : LC50 *Pimephales promelas* 8,9 mg/l (4 d)

Toxicity to daphnia: EC50 *Daphnia magna* 26 mg/l (48 h)

Biodegradability: > 60 % OECD 301 B Readily decomposed biologically.

Additional ecological information (ingredients): Do not allow to get into waste water or surface water.

# SAFETY DATA SHEET

According to EC Directive 1907/2006/EC



## DIG Gel Shift Kit, 2nd generation

Version 2.2  
Processing date 19.02.2009

Page 6/8  
Printing date 26.02.2010

### CSPD

#### *Diethanolamine*

Toxicity to fish :	LC50 Leuciscus idus 1.850 mg/l (48 h) LC50 Carassius auratus (Goldfish) 800 mg/l (24 h)
Toxicity to algae :	IC50 Desmodesmus subspicatus 75 mg/l (72 h)
Toxicity to bacteria:	EC50 Pseudomonas putida > 1.000 mg/l (16 h)
Toxicity to daphnia:	EC50 Daphnia magna 180 mg/l (48 h)
Value log P(o/w):	ca.-1,8
Biodegradability:	94 % 30 d Closed bottle test Readily decomposed biologically.

### 13. DISPOSAL CONSIDERATIONS

Waste disposal route: Generally disposed off as problem waste; disposal as waste water only in accordance with local regulations.

Disposal of empty packaging: Dispose of empty packs via local recycling or waste disposal routes- if necessary, clean them beforehand.

Retail packages of biochemical and diagnostics catalog merchandise are recycled through the acquisition of licenses in "Der Grüne Punkt". Contaminated primary packaging materials of diagnostics catalog merchandise in the sense of § 7 of the Packaging Ordinance are disposed of legally through the company Interseroh.

### 14. TRANSPORT INFORMATION

**High Consequent Dangerous Goods:** No

#### ADR

UN-No:	1556
Proper shipping name:	Arsenic compound, liquid, n.o.s.
ADR/RID-Labels:	6.1
Packaging group:	III
Classification code:	(T3/III)
Limited Quantities (Chapter 3.4):	30,00 KG
Transportation Category (Chapter 1.1.3.6.3):	2

#### IMDG

UN-No:	1556
Proper shipping name:	Arsenic compound, liquid, n.o.s.
ADR/RID-Labels:	6.1
Packaging group:	III
EMS :	F-AS-A

# SAFETY DATA SHEET

According to EC Directive 1907/2006/EC



## DIG Gel Shift Kit, 2nd generation

Version 2.2  
Processing date 19.02.2009

Page 7/8  
Printing date 26.02.2010

### IATA / ICAO Cargo

UN-No: 1556  
Proper shipping name: Arsenic compound, liquid, n.o.s.  
ADR/RID-Labels: 6.1  
Packaging group: III  
Packing instruction: 618  
Limited Quantities  
(Chapter 2.8): 1,00 L

### IATA / ICAO Passenger

UN-No: 1556  
Proper shipping name: Arsenic compound, liquid, n.o.s.  
ADR/RID-Labels: 6.1  
Packaging group: III  
Packing instruction: 611  
Limited Quantities  
(Chapter 2.8): 1,00 L

## 15. REGULATORY INFORMATION

### Labelling according to EC-Directives

Note: This product must be labeled in accordance with EEC directive 67/548 and 99/45.

Hazard symbol: T Toxic  
N Dangerous for the environment

Warnings: R49 May cause cancer by inhalation.  
R23/25 Toxic by inhalation and if swallowed.  
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety advice: S53 Avoid exposure - obtain special instructions before use.  
S7 Keep container tightly closed.  
S13 Keep away from food, drink and animal feeding stuffs.  
S28 After contact with skin, wash immediately with plenty of water.  
S36/37 Wear suitable protective clothing and gloves.  
S45 In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).

### National regulations

German BetriebssicherheitsVO: Not subject to German Ordinance on Industrial Health and Safety (formerly Regulations on Flammable Liquids).  
Substance Number of German Major Incident Regulation: 2

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According to EC Directive 1907/2006/EC



## DIG Gel Shift Kit, 2nd generation

Version 2.2  
Processing date 19.02.2009

Page 8/8  
Printing date 26.02.2010

### 16. OTHER INFORMATION

#### Further 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 product is responsible for ensuring that, where applicable, existing laws and guidelines are observed.