


Date: 28.09.2011

Former date: --

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

<b>1.1</b>	<b>Product identifier</b>	
	<b>Trade name</b>	Constitutional BoBs (RUO)
	<b>Company product code</b>	4500-0020 (packages P1 and P2)
	<b>Reach registration number</b>	N/A
<b>1.2</b>	<b>Relevant identified uses of the substance or mixture and uses advised against</b>	
	<b>The uses of the chemical</b>	Constitutional BoBs is intended only for research use for the detection of abnormalities of DNA.
	<b>The chemical can be used by the general public</b>	<input type="checkbox"/>
	<b>The chemical is used by the general public only</b>	<input type="checkbox"/>
<b>1.3</b>	<b>Details of the supplier of the safety data sheet</b>	
	<b>Manufacturer, importer, other undertaking</b>	PerkinElmer, Wallac Oy
	<b>Street address</b>	Mustionkatu 6
	<b>Postcode and post office</b>	FIN-20750 Turku
	<b>Post-office box</b>	PO Box 10
	<b>Postcode and post office</b>	FIN-20101 Turku
	<b>Telephone number</b>	+358-2-2678 111
	<b>Telefax</b>	+358-2-2678 357
	<b>E-mail address</b>	<a href="mailto:MSDS_Turku@perkinelmer.com">MSDS_Turku@perkinelmer.com</a> <a href="http://www.perkinelmer.com">www.perkinelmer.com</a>
	<b>Finnish Business ID (Y code)</b>	0937168-4
<b>1.4</b>	<b>Emergency telephone number</b>	SAFETY: +1-800-424-9300 (US) +358-9-471 977

**SECTION 2: HAZARDS IDENTIFICATION**

<b>2.1</b>	<b>Classification of the substance or mixture</b>	
	<b>Hybridization buffer and Wash Buffer 1 may cause harm to (or damage) the unborn child, see enclosed MSDS</b>	
	Avoid exposure - obtain special instructions before use. Restricted to professional users.	
<b>2.2</b>	<b>Label elements</b>	
		
	<b>Danger</b>	
<b>2.3</b>	<b>Other hazards</b>	
	N/A	

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

**Hazardous ingredients**

CAS/EC number and the registration number	Name of the ingredient	Concentration	Classification
75-12-7	Formamide	See below	T, R 61, Repr. Cat. 2 GHS: Repr 1B, H360D, GHS08 Dgr

The product contains following components and hazardous chemicals as ingredients:

- Wash Buffer 1 ([75-12-7] Formamide 50%)
- Hybridization Buffer ([75-12-7] Formamide 50%)

**Note! These solutions may cause harm to (or damage) the unborn child, see enclosed MSDS**

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- Random Primer Solution
- Biotin-dNTP Mix
- Polymerase
- Sample Diluent
- BACs-on-Beads Mix
- Reporter Concentrate
- Reporter Diluent
- Wash Buffer 2

The concentrations of hazardous chemicals in these other components are so low that the reagents are not classified as hazardous material

#### SECTION 4: FIRST AID MEASURES

- 4.1 Description of first aid measures**  
Wash with plenty of water.
- 4.2 Most important symptoms and effects, both acute and delayed**  
See enclosed MSDS for Wash Buffer 1 and Hybridization Buffer
- 4.3 Indication of any immediate medical attention and special treatment needed**  
If irritation occurs or if feeling unwell, seek medical advice

#### SECTION 5: FIREFIGHTING MEASURES

- 5.1 Extinguishing media**  
Water, appropriate foam, dry chemical or carbon dioxide
- 5.2 Special hazards arising from the substance or mixture**  
Emits toxic fumes and nitrogen oxides
- 5.3 Advice for firefighters**  
N/A

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures**  
Wear suitable protective clothes. Avoid contact, do not inhale vapours/aerosols.
- 6.2 Environmental precautions**  
See enclosed MSDS for Wash Buffer 1 and Hybridization Buffer
- 6.3 Methods and material for containment and cleaning up**  
Absorb on sand, paper, vermiculite or other appropriate material and place in a closed container for disposal. Ventilate and wash the area with water and detergent.
- 6.4 Reference to other sections**  
N/A

#### SECTION 7: HANDLING AND STORAGE

- 7.1 Precautions for safe handling**  
Wear suitable protective clothes and gloves.
- 7.2 Conditions for safe storage, including any incompatibilities**  
Store package P1 at -30...-16°C and package P2 at +2...+8°C. The expiry date of the complete packages are stated on the outer labels.
- 7.3 Specific end use(s)**  
For Research Use Only. Not for use in diagnostic procedures.

#### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

##### 8.1 Control parameters

**National occupational exposure limit values**

see enclosed MSDS for Hybridization Buffer and Wash Buffer 1

**Other limit values**

see enclosed MSDS for Hybridization Buffer and Wash Buffer 1

**DNEL**

N/A

**PNEC**

N/A

##### 8.2 Exposure controls

**Appropriate engineering controls**

Use good laboratory practices

**Eye/face protection**

At source of great extent of splashing use safety goggles

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**Skin protection**

Workwear

**Hand protection**

Disposable gloves. see enclosed MSDS for Hybridization Buffer and Wash Buffer 1

**Respiratory protection**

Not needed in laboratory scale. Filter A, if needed.

**Thermal hazards**

N/A

**Environmental exposure controls**

see enclosed MSDS for Hybridization Buffer and Wash Buffer 1

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**9.1 Information on basic physical and chemical properties**

<b>Appearance</b>	Small vials, liquids.
<b>Odour</b>	N/A
<b>Odour threshold</b>	N/A
<b>pH</b>	N/A
<b>Melting point/freezing point</b>	N/A
<b>Initial boiling point and boiling range</b>	N/A
<b>Flash point</b>	N/A
<b>Evaporation rate</b>	N/A
<b>Flammability (solid, gas)</b>	N/A
<b>Upper/lower flammability or explosive limits</b>	N/A
<b>Vapour pressure</b>	N/A
<b>Vapour density</b>	N/A
<b>Relative density</b>	N/A
<b>Solubility(ies)</b>	Water
<b>Partition coefficient: n-octanol/water</b>	N/A
<b>Auto-ignition temperature</b>	N/A
<b>Decomposition temperature</b>	N/A
<b>Viscosity</b>	N/A
<b>Explosive properties</b>	N/A
<b>Oxidising properties</b>	N/A

**9.2 Other information**

N/A

**SECTION 10: STABILITY AND REACTIVITY**

**10.1 Reactivity**

N/A

**10.2 Chemical stability**

N/A

**10.3 Possibility of hazardous reactions**

N/A

**10.4 Conditions to avoid**

N/A

**10.5 Incompatible materials**

N/A

**10.6 Hazardous decomposition products**

N/A

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## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

see enclosed MSDS for Hybridization Buffer and Wash Buffer 1. The product is not fully tested

#### Skin corrosion/irritation

The components of this kit may irritate very sensitive persons

#### Serious eye damage/irritation

No data available

#### Respiratory or skin sensitisation

No data available

#### Germ cell mutagenicity

No data available

#### Carcinogenicity

No data available

#### Reproductive toxicity

see enclosed MSDS for Hybridization Buffer and Wash Buffer 1

#### STOT-single exposure

No data available

#### STOT-repeated exposure

No data available

#### Aspiration hazard

No data available

#### Other information

May cause congenital malformations in the foetus. The components of this kit may irritate very sensitive persons

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Toxicity

see enclosed MSDS for Hybridization Buffer and Wash Buffer 1

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

No data available

### 12.6 Other adverse effects

The product is not fully tested

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Disposal of all waste should be in accordance with local regulations. Hybridization Buffer and Wash Buffer 1 are classified as hazardous chemical waste .

## SECTION 14: TRANSPORT INFORMATION

### 14.1 UN number

This product is not regulated under the transport regulations

### 14.2 UN proper shipping name

N/A

### 14.3 Transport hazard class(es)

N/A

### 14.4 Packing group

N/A

### 14.5 Environmental hazards

N/A

**Trade name:** Constitutional BoBs (RUO)

**Date:** 28.09.2011

**Former date:** --

**14.6 Special precautions for user**

N/A

**14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

N/A

#### **SECTION 15: REGULATORY INFORMATION**

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

For research use only. Not for use in diagnostic procedures. Hybridization Buffer and Wash Buffer 1 are restricted to professional users.

**15.2 Chemical safety assessment**

N/A

#### **SECTION 16: OTHER INFORMATION**

Product has been labelled according to 98/79/EC

See instructions for use. This product should only be used by adequately trained personnel

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. Wallac shall not be held liable for any damage resulting from handling or from contact with the above

**SAFETY DATA SHEET**

Date: 28.09.2011

Former date: --

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1 Product identifier****Trade name**

Hybridization Buffer and Wash Buffer 1 (Components of BoBs kit)

**Company product code**

N/A

**Reach registration number**

N/A

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

Components of a BoBs kit.

**The chemical can be used by the general public** **The chemical is used by the general public only** **1.3 Details of the supplier of the safety data sheet****Manufacturer, importer, other undertaking**

PerkinElmer, Wallac Oy

**Street address**

Mustionkatu 6

**Postcode and post office**

FIN-20750 Turku

**Post-office box**

PO Box 10

**Postcode and post office**

FIN-20101 Turku

**Telephone number**

+358-2-2678 111

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+358-2-2678 357

**E-mail address**[MSDS\\_Turku@perkinelmer.com](mailto:MSDS_Turku@perkinelmer.com)[www.perkinelmer.com](http://www.perkinelmer.com)**Finnish Business ID (Y code)**

0937168-4

**1.4 Emergency telephone number**SAFETY: +1-800-424-9300 (US)  
+358-9-471 977**SECTION 2: HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture**

These solutions (Hybridization Buffer and Wash Buffer 1) may cause harm to (or damage) the unborn child.

Avoid exposure - obtain special instructions before use.

Restricted to professional users.

**2.2 Label elements****Danger****2.3 Other hazards**

N/A

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS****Hazardous ingredients**

CAS/EC number and the registration number	Name of the ingredient	Concentration	Classification
75-12-7	Formamide	40-60%	T, R 61, Repr. Cat. 2 GHS: Repr 1B, H360D, GHS08 Dgr

**Other information**

The solutions contain also other chemicals not classified as hazardous

Trade name: Hybridization Buffer and Wash Buffer 1

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#### SECTION 4: FIRST AID MEASURES

- 4.1 Description of first aid measures**  
Wash with plenty of water. If inhaled, remove to fresh air.
- 4.2 Most important symptoms and effects, both acute and delayed**  
May irritate and may cause harm to (or damage) the unborn child.
- 4.3 Indication of any immediate medical attention and special treatment needed**  
If irritation occurs or if feeling unwell or if you are pregnant, seek medical advice

#### SECTION 5: FIREFIGHTING MEASURES

- 5.1 Extinguishing media**  
Water, appropriate foam, dry chemical or carbon dioxide
- 5.2 Special hazards arising from the substance or mixture**  
Emits toxic fumes and nitrogen oxides
- 5.3 Advice for firefighters**  
N/A

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures**  
Wear suitable protective clothes. Avoid contact, do not inhale vapours/aerosols.
- 6.2 Environmental precautions**  
Do not allow run off to sewer, waterway or ground
- 6.3 Methods and material for containment and cleaning up**  
Absorb on sand, paper, vermiculite or other appropriate material and place in a closed container for disposal. Ventilate and wash the area with water and detergent.
- 6.4 Reference to other sections**  
N/A

#### SECTION 7: HANDLING AND STORAGE

- 7.1 Precautions for safe handling**  
Wear suitable protective clothes, gloves and at source of great extent of splashing use safety goggles. Restricted to professional users.
- 7.2 Conditions for safe storage, including any incompatibilities**  
Store at temperature specified on package. The expiry dates of the complete packages are stated on the outer labels. Accessible only for authorized persons
- 7.3 Specific end use(s)**  
See instructions for use.

#### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

##### 8.2 Control parameters

**National occupational exposure limit values**  
10ppm (8h), 20ppm (15min), (2009) skin (formamide)

**Other limit values**  
10ppm (8h), 20ppm (15min), (2009) skin (formamide)

**DNEL**  
N/A

**PNEC**  
N/A

##### 8.2 Exposure controls

**Appropriate engineering controls**  
Use good laboratory practices

**Eye/face protection**  
At source of great extent of splashing use safety goggles

**Skin protection**  
Workwear

**Hand protection**  
Disposable gloves, latex or nitrile

**Respiratory protection**  
Not needed in laboratory scale. Filter A, if needed.

**Thermal hazards**  
N/A

**Environmental exposure controls**  
Do not allow run off to sewer, waterway or ground

Trade name: Hybridization Buffer and Wash Buffer 1

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.3 Information on basic physical and chemical properties

<b>Appearance</b>	Small vials, colourless liquids.
<b>Odour</b>	Slight odour of ammonia.
<b>Odour threshold</b>	N/A
<b>pH</b>	4-5
<b>Melting point/freezing point</b>	N/A
<b>Initial boiling point and boiling range</b>	N/A
<b>Flash point</b>	175°C (oc., formamide)
<b>Evaporation rate</b>	Henry's Law constant: $H = 1.21 \times 10^{-9}$ atm m <sup>3</sup> /mol (formamide)
<b>Flammability (solid, gas)</b>	N/A
<b>Upper/lower flammability or explosive limits</b>	2,7 - 19,0 % (formamide)
<b>Vapour pressure</b>	0,08 hPa (formamide)
<b>Vapour density</b>	1,56 (formamide)
<b>Relative density</b>	ca. 1 g/cm <sup>3</sup>
<b>Solubility(ies)</b>	Water
<b>Partition coefficient: n-octanol/water</b>	N/A
<b>Auto-ignition temperature</b>	N/A
<b>Decomposition temperature</b>	N/A
<b>Viscosity</b>	N/A
<b>Explosive properties</b>	N/A
<b>Oxidising properties</b>	N/A

9.4 Other information  
N/A

## SECTION 10: STABILITY AND REACTIVITY

- 10.1 **Reactivity**  
N/A
- 10.2 **Chemical stability**  
N/A
- 10.3 **Possibility of hazardous reactions**  
N/A
- 10.4 **Conditions to avoid**  
N/A
- 10.5 **Incompatible materials**  
Iodine, pyridine, sulphur trioxide, oxidizing agents
- 10.6 **Hazardous decomposition products**  
Carbon and nitrogen oxides

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 6000 mg/kg (rat, oral) (formamide)

LD50 3500 mg/kg (mouse, oral) (formamide)

The product is not fully tested



**Trade name:** Hybridization Buffer and Wash Buffer 1

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**Skin corrosion/irritation**

The solutions may irritate very sensitive persons

**Serious eye damage/irritation**

No data available

**Respiratory or skin sensitisation**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

No data available

**Reproductive toxicity**

May cause congenital malformations in the foetus

**STOT-single exposure**

No data available

**STOT-repeated exposure**

No data available

**Aspiration hazard**

No data available

**Other information**

May cause congenital malformations in the foetus. The solutions may irritate very sensitive persons

**SECTION 12: ECOLOGICAL INFORMATION**

**12.1 Toxicity**

LC<sub>50</sub> = 4600 – 9300 mg/l/96h (L.idus, DIN 38412) (formamide)

EC<sub>50</sub> = >500 mg/l/48h (Daphnia) (formamide)

IC<sub>50</sub> = >500 mg/l/72h (Algae) (formamide)

EC<sub>50</sub> = >10 g/l/17h (Pseudomonas putida) (formamide)

**12.2 Persistence and degradability**

>30%/14d (MITI test) (formamide)

>70%/28d (OECD 302B) (formamide)

**12.3 Bioaccumulative potential**

no bioaccumulation, log Pow -0.82 (OECD 107) (formamide)

**12.4 Mobility in soil**

No data available mobile, log Koc 1.101(IUCLID) (formamide)

**12.5 Results of PBT and vPvB assessment**

No data available

**12.6 Other adverse effects**

The product is not fully tested

**SECTION 13: DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods**

Disposal of all waste should be in accordance with local regulations. The solutions are classified as hazardous chemical waste .

**SECTION 14: TRANSPORT INFORMATION**

**14.1 UN number**

This product is not regulated under the transport regulations

**14.2 UN proper shipping name**

N/A

**14.3 Transport hazard class(es)**

N/A

**14.4 Packing group**

N/A

**14.5 Environmental hazards**

N/A

**14.6 Special precautions for user**

N/A

**Trade name:** Hybridization Buffer and Wash Buffer 1

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**14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**  
N/A

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**SECTION 15: REGULATORY INFORMATION**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**  
The solutions are restricted to professional users.

**15.2 Chemical safety assessment**  
N/A

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**SECTION 16: OTHER INFORMATION**

See instructions for use. This product should only be used by adequately trained personnel

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. Wallac shall not be held liable for any damage resulting from handling or from contact with the above