



**cDNA SYNTHESIS BUFFER - SAFETY DATA SHEET**

**SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

<p><b>1.1 Product Identifier</b>                  Product Catalog: cDNA Synthesis Buffer                  CAS Number: N.A.</p>	
<p><b>1.2 Product use</b>                  Laboratory research.</p>	
<p><b>1.3 Details of the Supplier of the Safety Data Sheet</b>                  Spatial Transcriptomics AB  <b>Street Address:</b>                  Södra Fiskartorpsvägen 15 C  <b>City:</b> Stockholm  <b>Province:</b> Stockholm  <b>Postal Code:</b> 114 33  <b>Phone number:</b> +46736697828  <b>Email:</b> sg@spatialtranscriptomics.com</p>	
<p><b>1.4 Emergency telephone number +44 (0)870 8200418 (CHEMTREC)</b></p>	

**SECTION 2 – HAZARDS IDENTIFICATION**

<p><b>2.1 Classification of the substance or mixture</b></p>	
<p><b>GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)</b></p>	
<p>Acute toxicity, Oral, H300                  Skin corrosion/irritation, (Category 2), H315                  Serious Eye Damage/Irritation, (Category 2), H319</p>	
<p><b>2.2 GHS Label elements, including precautionary statements</b></p>	
<p><b>Hazard pictograms</b></p>	
<p><b>Signal word:</b></p>	<p>Danger</p>
<p><b>Hazard statements</b></p>	<p>H226 Flammable liquid                  H300 Fatal if swallowed                  H302 Harmful if swallowed                  H315 Causes skin irritation</p>

H319	Causes serious eye irritation
<b>Precautionary statements</b>	
P264	Wash hands thoroughly after handling
P302 + P352	IF ON SKIN: Wash with plenty of soap and water
P332 + P313	If skin irritation occurs: Get medical advice/attention
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313	If eye irritation persists: Get medical advice/attention
P301 + P312	IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell
P330	Rinse mouth.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.
<b>2.3 Hazards not otherwise classified (HNOC) or not covered by GHS</b>	
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.	

### SECTION 3 – COMPOSITION /INFORMATION ON INGREDIENTS

#### 3.2 Mixtures

##### Hazardous ingredients according to Regulation (EC) No 1272/2008

Ingredient	Concentration, % (v/v)	Cas #	EC Number	Index number	Classification
Actinomycin D	12	60-24-2	200-464-6	605-001-00-5	Acute Tox. 2 - H300
(R*,R*)-1,4-dimercapto-2,3-butanediol (DTT)	0,6				Eye Irrit. 2 - H319 Skin Irrit. 2 - H315 Acute Tox. 4 - H302
BSA	1				
First Strand Buffer	24				
dNTP mix	6				

DMSO	0,14				Flam. Liq. 4; H226
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## SECTION 4 – FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

Rinse mouth with water. Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

### 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

## SECTION 5 – FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Suitable extinguishing media. Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides, sulfur oxides.

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

Use water spray to cool unopened containers

## SECTION 6 – ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid substance contact. Do not inhale steams/aerosols. Ensure adequate ventilation

**6.2 Environmental precautions**

Do not allow to enter sewers/ surface or ground water.

**6.3 Methods and material for containment and cleaning up**

Absorb with liquid-binding material (AppliSorb). Dispose of the material collected according to regulations. Ensure adequate ventilation. Clean up affected area.

**6.4 Reference to other sections**

See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information

**SECTION 7 – HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge. For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

**Storage**

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**7.3 Specific end use(s)**

No further relevant information available.

**SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION**

**8.1 Control parameters**

**Components with workplace control parameters**

Component	CAS-No.	Value	Control parameters	Basis
Dimethyl sulfoxide	67-68-5	TWA	250.000000 ppm	USA. Workplace Environmental Exposure Levels (WEEL)

**8.2 Exposure controls**

**Appropriate engineering controls:** General industrial hygiene practice.

### **Personal protective equipment**

**Eye/face protection** Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Full contact Material: Nitrile rubber Minimum layer thickness: 0,4 mm Break through time: 480 min Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M) Splash contact Material: Nitrile rubber Minimum layer thickness: 0,2 mm Break through time: 60 min Material tested:Dermatril® P (KCL 743 / Aldrich Z677388, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario

**Body Protection** impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection** Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure** Do not let product enter drains.

## **SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES**

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

#### **General Information**

**Appearance**

**Form** Liquid

**Colour** Yellow

**Odour** No data available

**pH-value at 20 °C** No data available

**Melting point** No data available

**Boiling point/Boiling range** No data available

**Flash point** No data available

**Evaporation rate** No data available

**Flammability** (solid, gas) No data available

**Upper/lower flammability or explosive limits**

No data available

**Vapour pressure** No data available  
**Vapour density** No data available  
**Relative density** No data available  
**Water solubility** soluble  
**Partition coefficient** No data available  
**Auto-ignition temperature** No data available  
**Decomposition temperature** No data available  
**Viscosity** No data available  
**Explosive properties** No data available  
**Oxidizing properties** No data available

#### **9.2 Other information**

No data available

### **SECTION 10 – STABILITY AND REACTIVITY**

#### **10.1 Reactivity**

No further relevant information available.

#### **10.2 Chemical stability**

Stable under recommended storage conditions.

#### **10.3 Possibility of hazardous reactions**

No dangerous reactions known. Violent reactions possible with: strong oxidants  
Forms explosive gas mixture with air.

#### **10.4 Conditions to avoid**

Heat, flames and sparks.

#### **10.5 Incompatible materials**

Metals, oxidizing agents.

#### **10.6 Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides, Nitrogen oxides. Other decomposition products - No data available. In the event of fire: see section 5.

### **SECTION 11 – TOXICOLOGICAL INFORMATION**

#### **11.1 Information on toxicological effects**

##### **Acute toxicity**

(Actinomycin D)

LD50 Oral - rat - 7.2 mg/kg

Remarks: Diarrhoea

Blood: Other changes  
(DMSO)

LD50 Oral - Rat - 14,500 mg/kg

LC50 Inhalation - Rat - 4 h - 40250 ppm

LD50 Dermal - Rabbit - > 5,000 mg/kg

**Skin corrosion/irritation**

Actinomycin D: No data available

DTT: Irritating to skin.

**Serious eye damage/eye irritation**

Actinomycin D: No data available

DTT: Risk of serious damage to eyes.

**Respiratory or skin sensitization**

Actinomycin D: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

DTT: No data available

**Germ cell mutagenicity**

Actinomycin D: Laboratory experiments have shown mutagenic effects in (DNA damage, liver, rat).

DTT: No data available

**Carcinogenicity**

Actinomycin D: No data available

DTT: Conclusive but not sufficient for classification.

**Reproductive toxicity**

Actinomycin D: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

DTT: Conclusive but not sufficient for classification.

DMSO: Reproductive toxicity - Rat - Intraperitoneal Effects on Fertility: Abortion.

Reproductive toxicity - Rat – Intraperitoneal Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Reproductive toxicity - Rat - Subcutaneous

Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).

Reproductive toxicity - Mouse - Oral

Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

Developmental Toxicity - Mouse - Intraperitoneal

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

**Specific target organ toxicity - single exposure**

Actinomycin D: No data available

DTT: Conclusive but not sufficient for classification.

**Specific target organ toxicity - repeated exposure**

Actinomycin D: No data available

DTT: Conclusive but not sufficient for classification.

**Aspiration hazard**

No data available

**Additional Information**

Actinomycin D: RTECS: AU1575000 Anemia, Drowsiness, Weakness

Liver - Irregularities - Based on Human Evidence

DTT: No data available

DMSO: RTECS: PV6210000

Exposure to large amounts can cause: redness of skin, Itching, burning, sedation, Headache, Nausea, Dizziness Eyes - Eye disease - Based on Human Evidence

Eyes - Eye disease - Based on Human Evidence

**SECTION 12 – ECOLOGICAL INFORMATION**

**12.1 Toxicity**

**Toxicity to fish (DMSO)**

LC50 - Pimephales promelas (fathead minnow) - 34,000 mg/l - 96 h LC50 -

Oncorhynchus mykiss (rainbow trout) - 35,000 mg/l - 96 h

**Toxicity to daphnia and other aquatic invertebrates (DMSO)**

EC50 - Daphnia magna (Water flea) - 24,600 mg/l - 48 h (OECD Test Guideline 202)

**Toxicity to algae (DMSO)**

EC50 - Pseudokirchneriella subcapitata (green algae) - 17,000 mg/l - 72 h (OECD Test Guideline 201)

**12.2 Persistence and degradability**

No information available.

**12.3 Bioaccumulative potential**

No information available.

**12.4 Mobility in soil**

**Soil/water partition**

**coefficient ( $K_{oc}$ ):** No data available

**Mobility:** No data available



### **12.5 Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### **12.6 Other adverse effects**

No known significant effects or critical hazards

## **SECTION 13 – DISPOSAL CONSIDERATION**

### **13.1 Waste treatment methods**

**Recommendation:** Disposal must be made in compliance with respective national regulations to official regulations. Packagings that may not be cleansed are to be disposed of in the same manner as the product.

## **SECTION 14 – TRANSPORT INFORMATION**

### **DOT (US)**

UN number: 3462            Class: 6.1    Packing group: II  
Proper shipping name: Toxins, extracted from living sources, solid, n.o.s.  
(Dactinomycin) Poison Inhalation Hazard: No

### **IMDG**

UN number: 3462            Class: 6.1    Packing group: II            EMS-No: F-A, S-A  
Proper shipping name: TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.  
(Dactinomycin)

### **IATA**

UN number: 3462            Class: 6.1  
Packing group: II  
Proper shipping name: Toxins, extracted from living sources, solid, n.o.s.  
(Dactinomycin)

## **SECTION 15 – REGULATORY INFORMATION**

### **SARA 302 Components**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### **SARA 313 Components**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### **SARA 311/312 Hazards**

Acute Health Hazard, Chronic Health Hazard

<b>Massachusetts Right To Know Components</b>	CAS-No.	Revision Date
Dactinomycin	50-76-0	1993-04-24
<b>Pennsylvania Right To Know Components</b>	CAS-No.	Revision Date
Dactinomycin	50-76-0	1993-04-24
Water	7732-18-5	
Dimethyl sulfoxide	67-68-5	
<b>New Jersey Right To Know Components</b>	CAS-No.	Revision Date
Dactinomycin	50-76-0	1993-04-24
Water	7732-18-5	
Dimethyl sulfoxide	67-68-5	
<b>California Prop. 65 Components</b>	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer.	50-76-0	2007-09-28
Dactinomycin		
WARNING! This product contains a chemical known to the State of California to cause birth defects and other reproductive harm.	CAS-No.	Revision Date
Dactinomycin	50-76-0	2007-09-28

## SECTION 16 - OTHER INFORMATION

<b>Full text of R-Statements referred to under sections 2 and 3.</b>	
Acute Tox.	Acute toxicity
H300	Fatal if swallowed.
<b>HMIS Rating</b>	
Health hazard:	3
Chronic Health Hazard:	*
Flammaibility:	0
Physical Hazard:	0
<b>NFPA Rating</b>	
Health hazard:	3
Reactivity Hazard:	0
Fire Hazard:	0
This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.	
<b>Department issuing SDS:</b> Spatial Transcriptomics AB	

<p><b>Contact: Dr. Stefania Giacomello</b></p> <p><b>Abbreviations and acronyms:</b> RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) ICAO: International Civil Aviation Organisation ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods IATA: International Air Transport Association GHS: Globally Harmonised System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative.</p>	
<p>Disclaimer</p>	<p><b>This SDS is intended for research use only and to be used in laboratories.</b> The SDS is intended to provide a brief summary of our knowledge and guidance regarding the use of the materials in this kit. The information contained here has been compiled from sources considered by ST to be dependable and is accurate to the best of the company’s knowledge. It is not meant to be an all-inclusive document on worldwide hazard communication regulations.</p> <p>This information is offered in good Faith. Each user of this kit need to evaluate the conditions of use and design the appropriate protective mechanisms to prevent employee exposures, property damage or release to the environment.</p> <p>ST assumed no responsibility for injury to the recipient or third person for any damage to any property resulting from misuse or the product.</p>

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